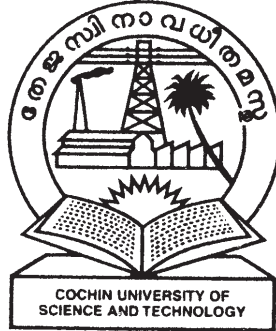




CUSAT Annual Report 2008-2009

Annual Report 2008-2009



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CUSAT Annual Report 2008-2009

**Annual Report
2008 - 2009**



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THE YEAR IN RETROSPECT

This report presented as required under Section 37 (i) of Chapter VI of the Cochin University of Science and Technology Act, 1986 covers the activities of the University during the period from April 1st, 2008 to March 31st, 2009.

The year under report witnessed steady progress in the effort of various University Departments / Schools / Institutions towards higher level of excellence in teaching and research and in organising a series of academic activities.



AIMS AND OBJECTIVES

The University of Cochin came into being on July 10th, 1971 by an ordinance which was replaced by the Cochin University Act 1971. The University of Cochin was reorganised and converted into a full-fledged University of Science and Technology by the Cochin University of Science and Technology Act, 1986 for the promotion of graduate and post graduate studies and advanced research in Applied Science, Technology, Industry, Commerce, Management and Social Science.

The University shall have the following objectives

- i. to prosecute and promote research in Applied Science, Technology, Industry, Commerce, Management and Social Science for the advancement of knowledge and for the betterment of society.
- ii. to provide facilities & offer opportunities for graduate & post-graduate education in Applied Science, Technology, Industry, Commerce, Management and Social Science by Instruction, Training, Research, Development and Extension and by such other means as the University may deem fit.
- iii. to devise and implement programmes of education in Applied Science, Technology, Industry, Commerce, Management and Social Science that are relevant to the changing needs of society in terms of breadth of diversity and depth of specialization.
- iv. to serve as a centre for fostering co-operation and exchanging of ideas between the academic and research community on the one hand and industry on the other.
- v. to organise exchange programme with other institutions of repute in India and abroad with a view to keeping abreast of the latest developments in relevant areas of teaching and research.

The University's basic philosophy and goals find eloquent expression in its coat of arms emblazoning the motto Tejasvi navadhitamastu. In essence it means May learning illumine us both (the teacher and the taught). The rising sun together with the coconut palm represents the birth of a new centre of learning in the land of Kerala. The book represents learning, the factory, its application and the transmission tower its centre of learning, that of fostering study and research in Applied Science, Technology, Industry, Commerce, Management and Social Science and the transference of such knowledge for the betterment of humanity.



CUSAT Annual Report 2008-2009

UNIVERSITY AUTHORITIES

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Dr. Gangan Pratap

PRO-VICE-CHANCELLOR

Dr. N.D. Inasu

REGISTRAR

Dr. N. Chandramohanakumar

FINANCE OFFICER

Sri. Sebastian Ouseph



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1. **Vice Chancellor**
2. **Pro Vice Chancellor**
3. **The Director of Technical Education**, Directorate of Technical Education, Padmavilasom Road, Thiruvananthapuram.
4. **The Principal Secretary to Government**, Higher Education Department, Government Secretariat, Thiruvananthapuram - 695 001
5. **The Secretary to Government**, Finance Department, Government Secretariat, Thiruvananthapuram - 695 001
6. **The Executive Vice President**, Kerala State council for Science, Technology and Environment, Sasthra Bhavan, Pattom P.O., Thiruvananthapuram – 695 004.
7. **Dr. K.N. Chandrasekharan Pillai**, Director, Indian Law Institute, Bhagwandas Road, New Delhi - 110 001.
8. **Dr. V.P.N.Nampoori**, Prof. & Director, International School of Photonics, Cusat, Kochi-22
9. **Dr. Joy Job Kulavelil**, HB 48, KKP Nagar, Union Christ College P.O., Aluva-2
10. **Adv. K.Mohanachandran**, H.No. XXXII/36, Chitrakalalayam Road, Edappally Toll, Kochi - 682 024
11. **Sri. Baby Chakrapani**, Lecturer, Department of Atmospheric Sciences, Cusat, Kochi-16
12. **Prof. P.O.J. Lebba**, Yakeen, Asramam, Kollam - 691 002
13. **Dr. I.S.Bright Singh**, Professor & Director, School of Environmental Studies, Cusat, Kochi - 22
14. **Shri. N.K.Vasudevan**, H.No. III/354, Sindooram, Adarsh Lane, Thrikkakara, Kochi - 682021
15. **Shri. C.M.Dinesh Mani, M.L.A.**, Chanthuruthil Veedu, Vennala, Kochi - 682 028
16. **Shri. Alphons Kannamthanam, M.L.A.**, Fathima Church Road, Elamkulam, Kochi - 682020
17. **Dr. Achuth Sankar S.Nair**, Hon. Director, Centre for Bio-Informatics, University of Kerala, Kariavattom P.O., Thiruvananthapuram - 685 581
18. **Dr. S.Salim**, Kudumbasree Mission, Civil Station, Kakkanad, Ernakulam.
19. **The Chairperson**, Cochin University Union, Cusat, Kochi - 22



MEMBERS OF ACADEMIC COUNCIL

EX-OFFICIO MEMBERS

1. **The Vice Chacellor**
2. **The Pro-Vice Chancellor**

NOMINEES OF VC'S OF OTHER UNIVERSITIES

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2. **Dr. D. Damodaran Namboodiri**, **Dean I/C**, Faculty of Fisheries, College of Fisheries Panangad, Kochi - 682 506.

MEMBERS OF THE SYNDICATE

3. **The Director of Technical Education**, Directorate of Technical Education, Padmavilasom Road, Thiruvananthapuram
4. **The Secretary to Government, Higher Education Department.**, Government Scretariat, Thiruvananthapuram
5. **The Secretary to Government, Finance Department**, Government Scretariat, Thiruvananthapuram
6. **The Executive Vice President**, Kerala State council for Science, Technology and Environment, Sasthra Bhavan, Pattom P.O., Thiruvananthapuram – 695 004.
7. **Dr. K.N. Chandrasekharan Pillai**, Director, Indian Law Institute, Bhagwandas Rd. New Delhi-1
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16. **Shri. Alphons Kannamthanam**, M.L.A., Fathima Church Road, Elamkulam, Kochi - 682 020
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18. **Dr. S.Salim**, Kudumbasree Mission, Civil Station, Kakkanad, Ernakulam.

DEANS OF FACULTIES

1. **Prof. P.O.J. Lebba** (Dean Faculty of Engineering, (Former consultant AICTE & Former Principal, TKM College of Engineering, Kollam) Yakeen, Asramam, Kollam - 691 002
2. **Dr. I.S.Bright Singh** (Dean, Faculty of Environmental Studies), Professor & Director, School of Environmental Studies, Cusat, Kochi - 22
3. **Dr. V.P.N.Nampoore** (Dean, Faculty of Technology), Prof. & Director, International School of Photonics, Cusat, Kochi - 22
4. **Dr. A. Aravindakshan** (Dean, Faculty of Humanities), **Professor**, Dept. of Hindi, CUSAT, Kochi - 22.
5. **Dr. V. Unnikrishnan Nayar** (Dean, Faculty of Science), Puthenpura, TC XV/1351(2), Gandhi Nagar, Union Christian College P.O., Aluva - 2
6. **Dr. D.Rajaseenan** (Dean, Faculty of Social Sciences), Professor, Department of Applied Economics, Cusat, Kochi - 22
7. **Dr. K. Mohankumar** (Dean, Faculty of Marine Sciences), Professor, Department of Atmospheric Sciences, CUSAT, Kochi - 16
8. **Dr. P.S.John** (Dean, Faculty of Medical Sciences), Professor & Head, Department of Orthopedics, Government Medical College, Gandhi Nagar P.O., Kottayam - 686 008
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28. **The Head**, Department of Computer Sciences, CUSAT, Kochi – 16.

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3. **Dr. V.P. Jagathy Raj, Reader**, School of Management Studies, CUSAT, Kochi – 22.
4. **Dr. M.Chandrasekharan, Professor**, Dept. of Bio Technology, CUSAT, Kochi-22
5. **Dr. A. Vijayakumar, Reader**, Department of Mathematics, CUSAT, Kochi – 22.
6. **Smt. Preetha Mathew, Reader**, CUCEK, Kuttanad

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2. **The Pro-Chancellor**
3. **The Vice Chancellor**
4. **The Pro-Vice Chancellor**
5. **The Mayor**, Cochin Corporation
6. **The Deputy Director**, Collegiate Education, Ernakulam.
7. **The Deputy Director of Education**, Ernakulam.
8. **The Chairman**, State Advisory Board of Education, Thiruvananthapuram
9. **The Director of Technical Education**, Directorate of Technical Education, Padmavilasom Road, Thiruvananthapuram.
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21. **Dr. Suresh Kumar P.**, Principal, College of Engineering, Ottapunna, Pallippuram P.O., Cherthala - 688 541



22. **Dr. N.Chandramohana Kumar**, Head, Department of Oceanography, Cusat, Kochi - 16
- 23 **Dr. K.T.Damodaran**, Professor (Retd.), School of Marine Sciences, Cusat, Kochi - 16
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30. **Dr. George Mathew**, Reader, School of Engineering, Cusat, Kochi - 22
31. **Sri. Joseph Alexander**, Reader, School of Engineering, Cusat, Kochi - 22
32. **Dr. Ramesh Babu T.**, Reader, Department of Physics, Cusat, Kochi - 22
33. **Sri. Sasi Gopalan**, Lecturer, School of Engineering, Cochin University of Science and Technology, Kochi - 22
34. **Dr. Sreekumar K.**, Reader, Department of Applied Chemistry, Cusat, Kochi - 22
35. **Sri. Thomas T.**, Lecturer, Cochin University College of Engineering Kuttanad, Pulincunnoo, Alappuzha
36. **Sri. Balanandan E.**, Ponnankulathuveedu, Kalamassery P.O., Ernakulam
37. **Sri. Chandrasekharan Nair K.**, President, All Kerala Bank Employees Federation, Thiruvananthapuram
38. **Sri. Abdul Assiss K.K.**, Vehicle Supervisor, Administrative Office, Cusat, Kochi - 22
39. **Sri. Harilal**, Selection Grade Assistant, Administrative Office, Cusat, Kochi - 22
- 40 **Abdul Salam**, 3rd Sem., B.Tech. E & CE, College of Engineering, Perumon
41. **Abhilash Sasikumar**, 5th Seem., B.Tech., CE, School of Engineering, Cusat, Kochi - 22
42. **Deepak K.R.**, Research Scholar, Department of Hindi, Cusat, Kochi - 22
43. **Nikhil N.P.**, 3rd Sem., B.Tech., CE, School of Engineering, Cusat, Kochi - 22
- 44 **Nikhil Nan**, 3rd Sem., B.Tech, EE, Cochin University of Engineering Kuttanadu, Pulincunnoo
45. **Sreeranj K.P.**, 3rd Sem., B.Tech, ME, Cochin University of Engineering Kuttanadu, Pulincunnoo
- 46 **Vinay Kumar G.**, 3rd Year, MBBS, Co-operative Medical College, Kalamassery, Kochi



47. **Sri. V.Abdul Razak**, Chairman, Slippons India (P) Ltd., 7/330, V.K.C.Building, Kolathara P.O., Kozhikode - 673 655
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49. **Sri. Jose Joseph**, Managing Director, Mamparampil Intermix (Pvt.) Ltd., Mamparambil, Pizhaku P.O., Kottayam
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52. **Sri. C.Sivasankara Pillai**, Lecturer in Civil Engineering, Govt. Polytechnic College, Kodumbu P.O., Palakkad
53. **Sri. Ananthanarayanan**, Director, National Physical & Oceanography Laboratory, Kochi - 21
54. **Dr. George Onakoor**, Former Director, The State Institute of Encyclopedia, "Sudarshana", Nalanchira, Thiruvananthapuram - 15
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59. **Sri. M.R.Rajasekharan**, Maruthanand House, Kayamkula P.O., Alappuzha
60. **Sri.C.J.Chacko**, Chamakkalayil, Muthalakkodam P.O., Thodupuzha
61. **Dr. K.P. Varkey**, Government Engineering College, Thrissur
62. **Dr. K.N. Chandrasekharan Pillai**, Director, Indian Law Institute, Bhagwandas Road, New Delhi - 110 001.
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68. **Dr. I.S.Bright Singh**, Professor & Director, School of Environmental Studies, Cusat, Kochi - 22



- 69 **Shri. N.K.Vasudevan**, H.No. III/354, Sindooram, Adarsh Lane, Thrikkakara, Kochi - 682 021
70. **Shri. C.M.Dinesh Mani**, M.L.A., Chanthuruthil Veedu, Vennala, Kochi - 682 028
- 71 **Shri. Alphons Kannamthanam**, M.L.A., Fathima Church Road, Elamkulam, Kochi - 682 020
- 72 **Dr. Achuth Sankar S.Nair**, Hon. Director, Centre for Bio-Informatics, University of Kerala, Kariavattom P.O., Thiruvananthapuram - 685 581
- 73 **Dr. S.Salim**, Kudumbasree Mission, Civil Station, Kakkanad, Ernakulam.
- 74 **Dr. Sebastian Paul MP**, Moonjappilly House, St. Francis Xavier Church Rd. Cochin- 682 018
- 75 **Dr. S. Babu Sundar**, Professor & Head, Department of Computer Applications, CUSAT, Kochi - 22.
76. **Dr. Mariamma Vincent Panikulangara**, Reader and Head, Department of Culture and Heritage, CUSAT, Kochi – 22.
77. **Shri. K. Babu**, M.L.A. Kannuparambathu, Sanskrit College Road, Thripunithura - 682 301.
- 78 **Shri. Saju Paul**, M.L.A., Panthalingal, Vengoor P.O., Perumbavoor, Ernakulam–683 546.
79. **Shri. Zakkariya K.A.**, Lecturer, School of Management Studies, CUSAT, Kochi – 22.
80. **Dr. K. Vanaja**, Lecturer, Department of Hindi, CUSAT, Kochi – 22.
81. **Smt. Susamma Chacko**, Principal, College of Engineering, Kalloppara, Pathanamthitta.
82. **Sri. R.S. Sasikumar**, 'Nirmalyam', Nemom, Thiruvananthapuram - 20.
83. **Prof. A.Lopez**, Vadakkeparambil, Parumala P.O., Thiruvalla



DEANS OF FACULTIES

1. **Engineering**

Prof. P.O.J.Lebba, (Former Consultant AICTE & Former Principal, TKM College of Engineering, Kollam Yakeen, Asramam, Kollam - 691 002

2. **Environmental Studies**

Dr. I.S.Bright Singh, Professor & Director, School of Environmental, CUSAT, Kochi – 22.

3. **Humanities**

Dr. A. Aravindakshan, Professor, Department of Hindi, CUSAT, Kochi – 22.

4. **Law**

Dr. K.N. Chandrasekharan Pillai, Director, Indian Law Institute, Bhagwandas Road, New Delhi - 110 001

5. **Science**

Dr. V. Unnikrishnan Nayar, Puthenpura TC XV/1351 (2), Gandhi Nagar Road 327, R.Suguthan Road, Vazhuthacaud, Thiruvananthapuram – 695 014.

6. **Social Sciences**

Dr. D.Rajasenan, Professor, Department of Applied Economics, CUSAT, Kochi – 22.

7. **Technology**

Dr. V.P.Narayanan Nampoori, Professor & Director, International School of Photonics, CUSAT, Kochi – 22.

4. **Marine Sciences**

Dr. K. Mohan Kumar, Professor, Department of Atmospheric Science, CUSAT, Kochi – 16.

5. **Medical Science and Technology**

Dr. P.S.John, Professor & Head, Department of Orthoedics, Doctors' Garden, Gandhi Nagar P.O., Kottayam -686 008



DEPARTMENT OF APPLIED CHEMISTRY

The Department of Applied Chemistry was established in 1976 with the support of UGC to play an important role in the further development of the industrial belt in the Greater Cochin Area by providing scientific support and trained personnel to the existing industries and by acting as a catalyst for the starting of new industries. The Department started an M.Sc. programme in Applied Chemistry in 1977. An M.Phil. programme in Chemistry was started in the year 1986. The Department has started an M.Tech. programme in industrial catalysis in 1996 which is approved by UGC and AICTE.

The Department has also served as a nucleus for starting the Department of Polymer Science and Rubber Technology and the Centre for Biotechnology by initiating B.Tech and M.Sc course in the respective areas. After the initial problems of infancy, the Department has grown and emerged as one of the best centres of Chemistry and has been fortunate to produce the first Bhatnagar Award Winner in Chemical Science in the entire State of Kerala. The UGC has identified it as one of the national centres to conduct refresher courses for University and College teachers in Chemistry.

The Department has been recently selected for the "Fund for improvement of S&T Infrastructure" (FIST) programme of Department of Science and Technology, Government of India and prestigious "Special Assistance Programme" (SAP) of University Grants Commission. Only a few Chemistry Departments were conferred this distinction at National level.

The Department has carried out many research projects, supported by Central and State Government agencies such as DST, MHRD, UGC, AICTE, CSIR, DRDO and STEC. Thirteen research schemes stand completed, valued at Rs. 69 lacs.

The Department has conducted several national seminars / symposia, the major ones being, a seminar and Mass Education programme in Environmental Awareness (1988), the National Symposium on Current Trends in Co-ordination Chemistry (1995) MATCON (2001), CTIC (2004) Frontiers in Chemistry (2006) and an International Seminar "Matcon (2007)". The Department has over 300 research publications to its credit during the last five years in addition to a few monographs. 70 students have taken their Ph.D from the Department. Almost all the students who has successfully completed the M.Sc. course in Applied Chemistry have found employment in industries, R&D institutions or colleges, some of them have pursued a career in research and have been awarded Ph.Ds. A few of them have also gone abroad and are well settled in industrial establishments, universities and other institutions.

1. Programme of Study / Research

1. M.Sc. (Applied Chemistry)
 2. M.Phil (Chemistry)
 3. M.Tech (Industrial Catalysis)
 4. Ph.D
-

**2. Faculty Members**

Sl.No.	Name	Designation	Qualification	Specialization
1.	Dr. K.K. Muhammed Yusuff	Professor	M.Sc. Ph.D.	Inorganic Chemistry & Catalysis
2.	Dr. S. Sugunan	Professor	M.Sc. Ph.D	Physical Chemistry & Catalysis
3.	Dr. M.R. Prathapa Chandra Kurup	Professor	M.Sc. Ph.D	Inorganic Chemistry
4.	Dr. K. Girish Kumar	Professor & Head	M.Sc., Ph.D	Analytical Chemistry
5.	Dr. K. Sreekumar	Professor	M.Sc., Ph.D	Industrial Catalysis
6.	Dr. S. Prathapan	Reader	M.Sc. Ph.D	Organic Chemistry
7.	Dr. N. Manoj	Reader	M.Sc., Ph.D	Organic Chemistry
8.	Smt. P.M. Sabura Begum	Lecturer	M.Sc., M.Phil	Organic Chemistry
9.	Dr. P.V. Mohanan	Lecturer	M.Sc., Ph.D	Analytical Chemistry
10.	Dr. P.A. Unnikrishnan	Lecturer	M.Sc., Ph.D	Organic Chemistry

3. Visiting Faculty

Sl.No.	Name	Qualification	Specialization
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4. Research Staff

Sl.No.	Name	Designation	Qualification	Specialization
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5. Research Scholars**Dr. K.K. Mohammed Yusuff**

Sl.No.	Name	Funding Agency	Guide	Area of Work
1.	Annu Anna Varghese	CSIR	Dr. K.K. Muhammed Yusuff	Coordination chemistry & catalysis
2.	Arun. V	University	Dr. K.K. Mohammed Yusuff	Coordination chemistry & catalysis
3.	Robinson P. Ponminisary		Dr. K.K. Mohammed Yusuff	Heterogenous Catalysis
4.	P.M. Sabura Begum	FIP	Dr. K.K. Mohammed Yusuff	Elastomer composites
5.	Manju Sebastian	KSCSTE	Dr. K.K. Mohammed Yusuff	Coordination chemistry & catalysis
6.	Lissy K. Thalakkottur		Dr. K.K. Mohammed Yusuff	oordination Chemistry C & catalysis
7.	Leeju. P.		Dr. K.K. Mohammed Yusuff	Coordination chemistry & Catalysis



8.	Varsha. G	University	Dr. K.K. Mohammed Yusuff	Coordination chemistry & catalysis
9.	Digna Varghese	CSIR	Dr. K.K. Mohammed Yusuff	Coordination chemistry & catalysis

Dr. S. Sugunan, Professor

Sl.No.	Name	Funding Agency	Guide	Area of Work
1.	Ajitha. S.	FiP	Dr. S. Sugunan	Enzyme Catalysis
2.	Joyes Jacob	FIP	Dr. S. Sugunan	Photo catalysis by modified Titania
3.	Reshmi. R	UJRF	Dr. S. Sugunan	Enzyme Catalysis
4.	Bolie Theratiil	CSIR	Dr. S. Sugunan	Catalysis by spinels
5.	Ambili. V.K.	UJRF	Dr. S. Sugunan	Catalysis by mesopoprous silicates
6.	Dhanya. T.P.	NIL	Dr. S. Sugunan	Photo catalysis by modified Titania
7.	Rajesh. K.M	BRNS	Dr. S. Sugunan	Photo catalysis by modified Titania
8.	Mothi Krishnamohan	DRDO	Dr. S. Sugunan	Photo catalysis by modified Titania
9.	Nissam. E	KSCSTEC	Dr. S. Sugunan	Catalysis by clays
10.	Cimi. A Daniel	IRELTDC	Dr. S. Sugunan	Catalysis by metal oxides
11.	Resephilo K.J.	NIL	Dr. S. Sugunan	Catalysis by Metal oxides
12.	Temina Mary Robert	UJRF	Dr. S. Sugunan	Photo catalysis by modified Titania
13.	Reni George	UJRF	Dr. S. Sugunan	Enzyme Catalysis
14.	Soumini C.	UJRF	Dr. S. Sugunan	Catalysis by mesopoprous silicates

Dr. M.R. Prathapachandra Kurup, Professor

Sl.No.	Name	Funding Agency	Guide	Area of Work
1.	Laly K.		M.R. Prathapachandra Kurup	Inorganic Chemistry
2.	Jessy Emmanuel		M.R. Prathapachandra Kurup	Inorganic Chemistry
3.	Sheeja. S.R.	CSIR	M.R. Prathapachandra Kurup	Inorganic Chemistry
4.	Nancy Mathew	UGC	M.R. Prathapachandra Kurup	Inorganic Chemistry
5.	Renjusha S.	CSIR	M.R. Prathapachandra Kurup	Inorganic Chemistry
6.	Neema Ani Mangalam		M.R. Prathapachandra Kurup	Inorganic Chemistry
7.	Reena. T.A.	UJRF	M.R. Prathapachandra Kurup	Inorganic Chemistry
8.	Roji J. Kunnath	UGC	M.R. Prathapachandra Kurup	Inorganic Chemistry
9.	Annie C.F.		M.R. Prathapachandra Kurup	Inorganic Chemistry
10.	K. Jayakumar		M.R. Prathapachandra Kurup	Inorganic Chemistry
11.	M. Sithambaresan	ICCR	M.R. Prathapachandra Kurup	Inorganic Chemistry
12.	Suja Krishnan		M.R. Prathapachandra Kurup	Inorganic Chemistry
13.	Sreesha Sasi		M.R. Prathapachandra Kurup	Inorganic Chemistry
14.	Bessy Raj. B.N.		M.R. Prathapachandra Kurup	Inorganic Chemistry

**Dr. K. Girish Kumar, Professor & Head**

Sl.No.	Name	Funding Agency	Guide	Area of Work
1	Beena S.	DRDO	Dr. K. Girish Kumar	Potentiometric sensors for Lanthanides
2	Leena R.		Dr. K. Girish Kumar	Fabrication of electrochemical sensors for pharmaceuticals
3	Litha V.K.	Rajiv Gandhi National Fellowship	Dr. K. Girish Kumar	Voltammetric sensors for pharmaceuticals
4	Pearl Augustine	DRDO	Dr. K. Girish Kumar	Fabrication of potentiometric sensors for pharmaceuticals
5.	Renjini Joseph		Dr. K. Girish Kumar	Sensors & Biosensors
6.	Sareena John		Dr. K. Girish Kumar	Fabrication of electrochemical sensors for pharmaceutical analysis (thesis submitted)
7.	Sindhu Issac	CSIR	Dr. K. Girish Kumar	Voltammetric sensors for pharmaceuticals
8.	Sobhana Mathew	Teacher fellow	Dr. K. Girish Kumar	Porphyrin based sensors
9.	Sreekumar C.S.	Teacher fellow	Dr. K. Girish Kumar	Potentiometric sensors
10	Theresa C.J.	DRDO	Dr. K. Girish Kumar	Electrochemical sensors

Dr. K. Sreekumar, Professor

Sl.No.	Name	Funding Agency	Guide	Area of Work
1	C.V. Elizabeth		K. Sreekumar	Nonlinear Optical Polymers
2	G. Rajesh Krishnan	DRDO	K. Sreekumar	Polymer supported polymer catalysis Heterogenous catalysis
3	K. Mangala	CSIR	K. Sreekumar	Heterogenous catalysis
4	M.V. Maheshkumar	DRDO	K. Sreekumar	Conjugated Polymers
5	N.A. Anoop	KSCSTE	K. Sreekumar	Energetic Polymers
6	S. Suresh	-	K. Sreekumar	Heterogenous catalysis
7	V. Kannan	-	K. Sreekumar	Heterogenous catalysis
8	Smitha George	CSIR	K. Sreekumar	Periphery modified dendrimers in Organic Synthesis
9	Jiby K. Gopinath		K. Sreekumar	

Dr. S. Prathapan, Reader

Sl.No.	Name	Funding Agency	Guide	Area of Work
1	John P.R.	-	Dr. S. Prathapan	Heterocycles
2	Jomon P. Jacob	-	Dr. S. Prathapan	Electron transfer
3	Sandhya Unnitan	CSIR	Dr. S. Prathapan	Dipolar Additions

**Dr. P.V. Mohanan, Lecturer**

Sl.No.	Name	Funding Agency	Guide	Area of Work
1	Ashly P.C.	-	Dr. P.V. Mohanan	Enzyme immobilization
2	Priya Rajan	-	Dr. P.V. Mohanan	Preparation of complexes
3	Navya Antony		Dr. P.V. Mohanan	Enzyme immobilization

Dr. P.A. Unnikrishnan, Lecturer

Sl.No.	Name	Funding Agency	Guide	Area of Work
1	Gisha George	CSIR	Dr. P.A. Unnikrishnan	Organic Chemistry
2	Jayakumar. K.	KSCSTE	Dr. P.A. Unnikrishnan	Organic Chemistry

6. Administrative Personnel

Sl.No.	Designation	No. of posts
1	Section Officer	1
2	Assistant Librarian	1
3	Assistant	3
4	Typist	2
5	Peon	2
6	Sweeper cum Cleaner	1

7. Technical Personnel

Sl.No.	Designation	No. of Posts
1	Technical Officer	1
2	Technical Assistant	2
3	Storekeeper	1
4	Laboratory Assistant	1

8. Students Enrollment

Sl.No.	Programme of Study	Men	Women	Total
1	M.Sc. I Year	4	7	11
2	M.Sc. II Year	5	4	9
3	M.Tech. (Industrial Catalysis) I Year	5	3	8
4	M.Tech (Industrial Catalysis) II Year	3	3	6
5	M.Phil I Semester		9	9

9. Research Facilities**a) Laboratories**

List of Equipments:

- | | |
|---|---|
| (i) Name of the equipments in the Department worth Rs. One Lakh and above along with the cost | 1. UV - Visible Spectrophotometer with Diffuse Reflectance Accessory, Labomed |
| | 2. UV - Vis Spectrophotometer, Thermo |



- | | |
|---|--|
| | 3. FT - IR |
| | 4. FT - IR ABB Bohmann with ATR accessory |
| | 5. Surface area Analyser |
| | 6. TG - DTA |
| | 7. Atomic Absorption Spectrometer |
| | 8. HPLC |
| | 9. GC |
| | 10. Electrochemical work station |
| (ii) Name of the equipment purchased in the X Plan worth Rs. One lakh and above | 1. UVD 3500 double beam spectrophotometer
2. FT - IR spectrophotometer - 4100 |
| (iii) Percent utilization of equipments | 100% |
| (iv) Whether the equipment is also used by other Departments / Colleges / other outside agencies (Give details) | Yes |

(b) Library

No. of Books / Journals on 31 st March of previous year	Additions during the year
3758	53

(c) Others : Nil

10. Distinguished Visitors

Visitors in the Department

The Scholars - in - Residence program introduced by the Government of Kerala was inaugurated on 24th February, 2009 by Dr. N. Chandramohanakumar, Registrar, CUSAT in the Department of Applied Chemistry, Dr. Swapan K. Pati, Associate Professor, JNCASR, Bangalore was the first Scholar to be introduced as part of the Program. Dr. Pati gave lectures on Modern Developments of Quantum Merchanics and Molecular Devised during 24-28 February, 2009.

Prof. K.L. Sebastian, Chairman, IPC, IISc Bangalore delivered Lectures on Quantum Chemistry and Statistical Termodynamics during 17-25 March, 2009.

Prof. A.G. Ramachandran Nair, Rtd. Professor, Pondicherry Central University gave lectures on Organic Synthesis during 16-27 March 2009

Lecture on Polymer Modeling by Professor Luigi Cavallo of UDS Salerno, Italy

11. Ph.D Awarded

Dr. S. Sugunan, Professor

Sl.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1.	Catalysis by Transition metal modified ceria and ceria-zirconia mixed oxide prepared via sol-gel route	Maya.G	Dr. S. Sugunan

**Dr. M.R. Prathapachandra Kurup, Professor**

Sl.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1	Tridentate Schiff Bases of Some Aroylhydrazides and their Metal Complexes: Spectral and Structural Studies	Mini Kuriakose	M.R. Prathapachandra Kurup
2.	Spectral and structural studies of transition metal complexes of thiosemicarbazones containing ring incorporated at N94) - position	Leji Latheef	M.R. Prathapachandra Kurup

Dr. K. Girish Kumar, Professor & Head

Sl.No.	Title of Thesis	Name of research Scholar	Supervising Guide
1	Fabrication of electrochemical sensors for pharmaceutical analysis	Sareena John	Dr. K. Girish Kumar
2.	Development of electrochemical sensors for the determination of certain pharmaceuticals	Pearl Augustine	Dr. K. Girish Kumar

Dr. S. Prathapan, Reader

Sl.No.	Title of Thesis	Name of research scholar	Supervising Guide
1	"Synthesis and photochemistry of a few olefin-appended dibenzobarrelenes and bisdibenzobarrelenes."	Ambily Mary Jacob	Dr. S. Prathapan
2.	"Studies on the solvent dependence in the reaction of a few (Anthracen - 9 - yl) methylamines and Sulfanes with reactive Acetylenes".	Rekha R. Mallia	Dr. S. Prathapan

12. List of Publications**Dr. K.K. Mohammed Yusuff**

- Sl.No.
1. Pearly Sebastian Chittilappilly, N. Sridevi and K.K. Mohammed Yusuff, "Ruthenium complexes of Schiff base ligands as efficient catalysts for catechol-hydrogen peroxide reaction", *Journal of Molecular Catalysis A: Chemical*, 286 92 - 97, 2008.
 2. N. Sridevi and K.K.M. Yusuff, "Sunthesis, characterization and kinetic studies on complex formed between amantadine hydrochloride and sodium molybdate at physiological pH" *Indian Journal of Chemistry* 47 A, 836-842, 2008.
 3. Pearly Sebastian Chittilappilly and K.K.M. Yusuff, "Synthesis, characterization and biological properties of ruthenium (III) Schiff base complexes derived from 3 - hydroxyquinoxaline - 2 - carboxaldehyde and salicylaldehyde" *Indian Journal of Chemistry* 47 A, 848 - 853, 2008
 4. Digna Varghese, V.Arun, Manju Sebastian, P. Leeju, G. Varsha and K.K.M. Yusuff, "N.N - Bis[(E)-quinoxalin-2-ylmethylidene]etjame-1,2-diamine" *Acta Crystallographica* E65, o435, 2009.



5. G. Varsha, V. Arun, Manju Sebastian, P. Leeju, Digna Varhese and K.K.M. Yusuff, "(Z) -2-Amino-3-[(E)-benzylideneamino]but-2-enedinitrile" *Acta Crystallographica E* 65, o919, 2009.
6. V. Arun, P.P. Robinson, S. Manju, P. Leeju, G. Varsha, V. Digna, K.K.M. Yusuff, "A novel fluorescent bisazomethine dye derived from 3-hydroxyquinoxaline-2-carboxaldehyde and 2, 3-diaminomaleonitrile" *Dyes and Pigments*, 82, 268-275, 2009.
7. V. Arun, N. Sridevi, P.P. Robinson, S. Manju, K.K.M. Yusuff, "Ni(II) and Ru(II) Schiff base complexes as catalysts for the reduction of benzene", *Journal of Molecular Catalysis A: Chemical*, accepted, DOI: 10.1016/j.molcata.2009.02.011.
8. P. Robinson, V. Arun, Sebastian Manju and K.K.M. Yusuff, "Oxidation kinetics of nickel nano crystallites obtained by controlled thermolysis of diaqua-bis(ethylenediamine) nickel(II) nitrate" *Journal of Thermal Analysis and calorimetry* accepted, DOI: 10.1007/s10973-009-0209-y.

Dr. S. Sugunan

Sl.No.

1. Tuning mesoporous molecular sieve SBA-15 for the immobilization of alpha-amylase, Sreedharan Ajitha and Sankaran Sugunan, *Journal of porous material* (accepted)
2. B.N. Narayanan*, Z. Yaakob, R. Koodathil, S. Chandralayam, S. Sugunan, F.K. Saidu, V. Malayattil, Photodegradation of Methylorange over Zirconia Doped TiO₂ using solar energy, *Euro Jour Sci Res.* 28(2009) 567-572.
3. Lyjo K. Joseph, Sanjay G., Suja H, Sugunan S, Nampoori VPN and Radhakrishnan P., "Thermal characterization of dye intercalated clay-based ceramics using photoacoustic technique". *Philosophical Magazine*, 89, (2009), 895-905.
4. Lyjo K. Joseph, Suja H, Sanjay G, Sugunan S., Nampoori VPN and Radhakrishnan P, "Thermal characterization of methylene blue intercalated montmorillonite clays using photoacoustic technique". *Applied Clay Science*, 42 (2009), 483-487
5. Sanjay G and Sugunan S, "Acid activated montmorillonite: An efficient immobilization support for improving reusability, storage stability and operational stability of enzymes", *J. of Porous Materials*, 15 (2008) 359-367.
6. N. Narayanan Binitha, Sankaran Sugunan*, Polyaniline/Pillared Montmorillonite Clay composite nanofibers, *Journal of Applied Polymer Science*, 107 (2008) 3367 - 3372
7. N.N. Binitha, S.Sugunan*, shape selective toluene methylation over chromia pillared montmorillonites, *Catalysis Communications*, 9 (2008) 2376-2380.
8. Kochurani George, S. Sugunan, Nickel substituted copper chromite spinels: preparation, characterization and catalytic activity in the oxidation reaction of ethylbenzene; *Catalysis Communications* 9 (2008) 2149-2153
9. Binitha N. Narayanan Alkylation of Benzene with 1-octene over titania pillared montmorillonite, and Sankaran Sugunan*, *reaction kinetics and catalysis letter*, 94 (2008) 77 - 83
10. Kochurani George and Sankaran Catalytic oxidation of cyclohexane over Cu-Zn-Cr ternary spinel systems; Kochurani George and Sankaran Sugunan *reaction kinetics and catalysis letters* Vol. 94, No. 2, 253-260 (2008)



11. P. Renu, T. Radhika and S. Sugunan, "Characterization and catalytic activity of vanadia supported on rice husk silica promoted samaria", *Catalysis communications*, 9,5, (2008) 584 - 589

Dr. M.R. Prathapachandra Kurup

1. Synthesis, spectral and structural studies of novel binuclear Ni(II) complex of salicylaldehyde 3-azacyclothiosemicarbazone, Leji Latheef, E.B. Seena, M.R.P. Kurup, *Inorganica Chimica Acta* 362 (2009) 2515.
2. Synthesis and spectral investigations of vanadium (IV/V) complexes derived from an ONS donor thiosemicarbazone ligand, Neema Ani Mangalam, M.R.P Kurup, *Spectrochim. Acta A* 71 (2009) 2040
3. Preparation, magnetic and EPR spectral studies of copper (II) complexes of an anticancer drug analogue, E. Manoj, M.R.P. Kurup, *Spectrochim. Acta A*, 72 (2009) 474.
4. Zinc(II) complexes derived from di-2-pyridyl ketone N4-phenyl-3-semicarbazone: Crystal structure and Spectral studies, T.A. Reena, E.B. Seena, M.R.P. Kurup, *Polyhedron* 27 (2008) 3461.
5. Structural and spectral studies on manganese(II) complexes of di-pyridyl ketone N(4)-methyl and N(4)-ethylthiosemicarbazones, S. Renjusha, M.R.P. Kurup, *Polyhedron* 27 (2008) 3294.
6. Synthesis, spectral characterization and crystal structure of N-2-hydroxy-4-methoxybenzaldehyde-N'-4-nitrobenzoyl hydrazone and its square planar Cu(II) complex, B.N. Bessy Raj, M.R.P. Kurup, *Spectrochim. Acta Section A*, 71 (2008) 1253.
7. Spectral and structural studies of copper(II) complexes of thiosemicarbazones derived from salicylaldehyde and containing ring incorporated at N(4) - position, Leji Latheef, M.R.P. Kurup, *Spectrochim. Acta A* 70 (2008) 86.
8. Synthesis and spectral studies of cadmium (II) complexes derived from di-2-pyridyl ketone and N(4)-phenylsemicarbazide: First structural report of a cadmium(II) complex of semicarbazone, T.A. Reena, E.B. Seena, M.R.P. Kurup, *Polyhedron* 27 (2008) 1825.
9. Synthesis, spectral and EPR studies of oxovanadium (IV) complexes incorporating tridentate ONO donor hydrazone ligands: Structural study of one oxovanadium(V) complex, E.B. Seena, Nancy Mathew, Mini Kuriakose, M.R.P. Kurup, *Polyhedron* 27 (2008) 1455.
10. Synthesis, spectral and structural studies of zinc(II) complexes of salicylaldehyde N(4)-phenylthiosemicarbazone, E.B. Seena, M.R.P. Kurup *Spectrochim. Acta A* 69 (2008) 726.
11. Structural and spectral studies of nickel(II) complexes with N(4), N(4) - (butane -1, 4 - diyl) thiosemicarbazones, E. Manoj, M.R.P. Kurup, *Polyhedron* 27 (2008) 275.
12. Synthesis and spectral studies of bithiocarbohydrazone and biscarbohydrazone of quinoline - 2 - carbaldehyde: Crystal structure of bis(quinoline-2-aldehyde) thiocarbohydrazone, E. Manoj, M.R.P. Kurup, H - K. Fun, *J.Chem. Cryst.* 38 (2008) 157.
13. Crystal study of salicylaldehyde N(4) - phenylthiosemicarbazone, E.B. Seena, M.R.P. Kurup, E. Suresh, *J. Chem. Cryst.* 38 (2008) 93.
14. Spectral and structural studies of nickel (II) complexes of salicylaldehyde 3 - azacyclothiosemicarbazones, Leji Latheef, M.R.P. Kurup, *Polyhedron* 27 (2008) 35.



Dr. K. Girish Kumar

1. Renjini Joseph, K. Girish Kumar, Electrochemical reduction and voltammetric determination of metronidazole benzoate at modified carbon paste electrode, *Anal. Left.*, 2009 (in press)
2. B. Saraswathyamma, I. Grzybowska, Cz. Orlewska, J. Radecki, W. Dehaen, K. Girish Kumar, H. Radecks, Electroactive Dipyrromethene – Cu (II) Monolayers deposited onto Gold Electrodes for Voltammetric Determination of Paracetamol, *Electroanalysis*, 20(21), 2317, (2008)
3. Beena Saraswathyamma, Marta Pajak, Jerzy Radecki, Wouter Maes, Wim Dehaen, K. Girish Kumar, Hanna Radecka, PVC supported liquid membrane and carbon paste potentiometric sensors incorporating a Mn(III)-porphyrin for the direct determination of undissociated Paracetamol, *Electroanalysis*, 20 (17), 2009, (2008).
4. K. Girish Kumar, Pearl Augustine, Sareena John, Jerzi Radecki and Hanna Radecka, fabrication of potentiometric sensors for the selective determination of Ketoconazole, *Anal.Left.*, 41(7), 1144, (2008)

Dr. K. Sreekumar

1. On the dipole moments and first - order hyperpolarizability of N, N-bis (4-bromobutyl)-4-nitrobenzenamine, V.C. Kishore, R. Dhanya, K. Sreekumar, Rani Joseph and C. Sudha Kartha, *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*, 70, 1227, 2008
2. Ground state and excited state dipole moments of alkyl substituted para - Nitroaniline derivatives, V.C. Kishore, R. Dhanya, K. Sreekumar, Rani Joseph and C. Sudha Kartha, *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*, 71, 1355, 2008.
3. First example of organic catalysis by polymer supported PAMAM dendrimers:- Highly efficient and recyclable catalyst for Knoevenagel condensation. G. Rajesh Krishnan and K. Sreekumar, (*European Journal of Organic Chemistry*, 4763 - 4768, 2008,s highlighted in *Synfacts*, 2008, 12, 1343
4. Ring opening of epoxides catalyzed by poly(amidoamine) dendrimers supported on crosslinked polystyrene, G. Rajesh Krishnan and K. Sreekumar, *Polymer*, 49, 5233-5240, 2008
5. Polystyrene - supported poly (amidoamine) dendrimer - manganese complexes; synthesis, characterization and catalysis.G. Rajesh Krishnan and K. Sreekumar, *Applied Catalysts A. general*, 353, 80-86. 2009
6. Three component Mannich reaction and 1, 5-benzodiazepine synthesis catalyzed by a tetranitrile - silver complex. G. Rajesh Krishnan, R. Sreerekha and K. Sreekumar (*Letters in Organic Chemistry*, 6, 17-21, 2009.
7. Organocatalysis by poly(amidoamine) dendrimers; Knoevenagel and Mannich reactions catalyzed in water. G. Rajesh Krishnan, Jinimol Thomas and K. Sreekumar *ARKIVOC*, 106 - 120, 2009
8. Silver - doped photopolymer media for holographic recording. V. Pramitha, K.P. Nimmy, N.V. Sunramanyan, Rani joseph, K. Sreekumar and Sudha Kartha, *J. Appl. Opt.* 48, 12, 2009.



9. Photophysical and Electrochemical Investigations on Photoconducting Poly(6-tert-butyl 1-3, 4-dihydro-2H-1, 3-benzoxazine), R. Dhanya, V.C. Kishore, K. Sreekumar, C. Sudha Kartha, Rani Joseph, *Macromol. Symp.*, 277, 112 - 118, 2009

Dr. S. Prathapan

1. Synthesis and antitumor activity of 3 (2J) - furanones. *J. Bioorg. Med. Chem.* 2009, 19 (764)

Dr. P. A. Unnikrishnan

1. Synthesis and antitumor activity of 3(2J)-furanones. *J. Bioorg Med. Chem.* 2009, 19(764)

Smt. P.M. Sabura Begam

1. Preparation and use of manozine oxide in Neoprene Rubber, *International Journal of Polymeric materials*, 57, 12, 2008.

13. (a) Seminar / Conference Presentations:**Dr. K.K. Mohammed Yusuff**

Name of Participant	Name of seminar / conference / workshop	Role
K.K.Mohammed Yusuli	National Conference on advances in physical and theoretical chemistry, APTChem - 2009	Participation
K.K. Mohammed Yusuff	International conference on Coordination and organometallic chemistry, ICCOC - 2009	Participation
K.K. Mohammed Yusuff	Workshop on Applications of Mass spectroscopy and related hyphenated techniques in analytical science	Participation
Robinson P. Ponminissary	National conference on advances in physical and theoretical chemistry, APTChem - 2009	Poster Presentation
Arun. V.	International conference on Coordination and organometallic Chemistry, ICCOC - 2009	Poster Presentation
Digna Varghese	International Conference on coordination and organometallic chemistry, ICCOC - 2009	Poster Presentation
Varsha G	International conference on coordination and organometallic chemistry, ICCOC - 2009	Participation
Leeju. P	International conference on coordination and organometallic chemistry, ICCOC - 2009	Participation
Manju Sebastian	International conference on coordination and organometallic chemistry, ICCOC - 2009	Participation
Manju Sebastian	Workshop on Applications of mass spectroscopy and related hyphenated techniques in analytical science	Participation

Dr. S. Sugunan

Name of Participant	Name of Seminar / Conference / Workshop	Role
S. Sugunan, Bolie Therattil, Reshmi. R, Rajesh. K.M., Ajitha S. Joyes Jacob	National seminar on current trends in Chemistry (CTRIC 2008), Department of Applied Chemistry, CUSAT - 2008	Oral Presentation



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Bolie Therattil	Sixteenth National Symposium and Workshop on Thermal Analysis, IGCAR, Kalpakkam, 2008	Oral Participation
S. Sugunan, Bolie Therattil, Rajesh. K.M.	CAT Workshop 2008, National Workshop on Catalysis, Bhubhaneshwar, 2008	Poster presentation
S. Sugunan, Reshmi. R., Bolie Therattil, Rajesh K.M., Dhanya T.J., Rose Philo K.J.	Indian Analytical Science congress, Munnar 2008	Poster presentation
Reshmi. R., Rajesh K.M., Ajitha S.	National Seminar on Current Advances in Chemical Science, S.H. College, Thevara Cochin 2008	Poster / Oral Presentation
Ambily V.K., Temina Mary Robert, Reni George, Cimi. A., Daniel, Nissam E	Orientation Programme in Catalysis, IIT-Madras, 2008	Participation
Bolie Therattil	Second Internal Symposium on advanced materials and polymers for aerospace and defence applications, Pune, 2008	Poster Presentation
Rajesh K.M.	International Conference on Fontiers in Nanoscience and Technology, Cochin 2009	Poster Presentation
Bolie Therattil, Rajesh K.M., Ambili V.K., Temina Mary Robert, Reni George, Cimi A Daniel, Nissam E., Mothi Krishnamohan, S. Sugunan	Catsymp - 19, National Symposium on Catalysis for sustainable Energy and Chemicals, Pune 2009	Poster presentation
Bolie Therattil, Rajesh K.M., Ambili V.K., Temina Mary Robert, Reni George, Cimi A., Daniel, Nissam E., Mothi Krishnamohan, Soumini C., Dhanya T.P., Ajitha S.,	National Conference on advances in physical and Theoretical Chemistry, Calicut University, 2009	Oral Presentation
Bolie Therattil	Second Internal Symposium on advanced materials and polymers for aerospace and defense applications, Pune, 2008	Poster Presentation

Dr. M.R. Prathapachandra Kurup

Name of Participant	Name of Seminar / Conference / Workshop	Role
M.R. Prathapachandra Kurup	Intrenational Conference on Coordination and Organometallic Chemistry, (ICCOC-2009) Bharathiyar University, Coimbatore 19 - 20 th March 2009	Participant
Sheeja. S. R.	International Conference on Coordination and Organometallic Chemistry (ICCOC - 2009) Bharathiyar University, Coimbatore 19 - 20 th March 2009	Poster presentation



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Reena. T. A	International Conference on Coordination and Organometallic Chemistry, (ICCOC - 2009) Bharathiyar University, Coimbatore 19-20 th March 2009	Poster Presentation
Neema Ani Mangalam	International Conference on coordination and organometallic chemistry, (ICCOC - 2009) Bharathiyar University, Coimbatore 19-20 th March 2009	Poster Presentation

Dr. K. Girish Kumar

Name of Participant	Name of Seminar / Conference / Workshop	Role
Dr. K. Girish Kumar	National Seminar on "Emerging Trends in Pharmaceutical Analysis", Sidhartha College of Pharmaceutical Sciences, February 2009	Presenting author
Leena R	National Seminar on "Emerging Trends in Pharmaceutical Analysis", Sidhartha College of Pharmaceutical Sciences, February 2009	Presenting author
Renjini Joseph	National Seminar on "Emerging Trends in Pharmaceutical Analysis", Sidhartha College of Pharmaceutical Sciences, February 2009	Presenting author
Sindhu Issac	National Seminar on "Emerging Trends in Pharmaceutical Analysis", Sidhartha College of Pharmaceutical Sciences, February 2009	Presenting author
Theresa C.J.	National Seminar on "Emerging Trends in Pharmaceutical Analysis", Sidhartha College of Pharmaceutical Sciences, February 2009	Presenting author
Laina A.L.	National Seminar on "Emerging Trends in Pharmaceutical Analysis", Sidhartha College of Pharmaceutical Sciences, February 2009	Presenting author
Renjini Joseph	International Seminar on "Frontiers in Chemical Research", Mangalore University, December 2008	Presenting author
Leena R	International Seminar on "Frontiers in Chemical Research", Mangalore University, December 2008	Presenting author
Sindhu Issac	National Seminar on "Current advances in Chemical Science", Sacred Heart College, Thevara, November 2008	Presenting author
Litha V.K.	National Seminar on "Current advances in Chemical Science", Sacred Heart College Thevara, November 2008	Presenting author
Sindhu Issac	National Seminar on "Current Trends in Chemistry", CUSAT, January 2008	Presenting author
Litha V.K.	National Seminar on "Current Trends in Chemistry", CUSAT, January 2008	Presenting author

**Dr. K. Sreekumar, Reader**

Sl.No.	Name of Participant	Name of the Conference	Title of the Presentation	Role
1	N.A. Anoop	POLYCHAR - 16, Lucknow	Synthesis and Characterization of Thermolastic Elastomeric Binders of BAMO	Presenter
2	K. Sreekumar	POLYCHAR - 16, Lucknow	The Photocurrent Action Spectrum of Poly (6-tert-butyl-3-methyl-3, 4-dihydro-2H-1, 3-benzoxazine) / poly(methyl methacrylate) Blend	Co-author
3	K. Sreekumar	POLYCHAR - 16, Lucknow	Photophysical and Electrochemical Investigations on Photoconducting Poly (6-tert-butyl-3-methyl-3, 4-dihydro-2H-1, 3-benzoxazine)	Co-author
4	C.V. Elizabeth	POLYCHAR - 16, Lucknow	Synthesis and characterization of Polyurethanes with Isosorbide as Chiral Moiety	Presenter
5	K. Mangala	POLYCHAR - 16, Lucknow	Application of Metal Incorporated Polycarbosilace in Heterogeneous Catalysis	Presenter
6	K. Sreekumar	APT, 2009, Cochin	Effect of Sealing on the diffraction efficiency of an Acrylamide based photopolymer	Co-author
7	K. Sreekumar	PHOTONICS 2008, New Delhi	Peristrophic Multiplexing in a Methylene Blue Doped Acrylamide Polymer	Co-author
8	C.V. Elizabeth	SAMPADA 2008, Pune	Nonlinear optical properties and thermal studies of polyesters with diethyl tartarate as chiral moiety	Presenter
9	N.A. Anoop	SAMPADA 2008, Pune	Synthesis and characterization of polyphosphazene based energetic binders	Presenter
10	K. Sreekumar	NLS 2008, New Delhi	Characterization of a Methylene Blue sensitized Poly (Vinyl Alcohol)/ Acrylamide Photopolymer for Holographic Data Storage	Co-author
11	K. Sreekumar	ICOICT 2009, Thiruvananthapuram	Holographic multiplexing in a silver doped acrylamide photopolymer	Co-author
12	K. Sreekumar	ICONTOP 2009, Kolkata	Holographic lens recorded in Eosin sensitized acrylamide based photopolymer	Co-author



13	C.V. Elizabeth	MACRO 2009, Chennai	Isomannide based NLO active chiral polyurethanes with main chain amino chromophores	Presenter
14.	N.A. Anoop	MACRO, 2009 Chennai	Synthesis and characterization of novel polyphosphazene base energetic binders	Presenter

Dr. S. Prathapan

Sl.No.	Name of Participant	Name of the Conference	Name of Seminar / Conference/Workshop	Role
1.	Ambily	"Synthesis and photochemistry of a few olefin - appended dibenzobarrelenes and bisdibenzobarreleness".	Sponsored project	Resource person
2.	Rekha R. Mallia	"Studies on the solvent dependence in the reaction of a few (Anthracen - 0 yl) methylamines and Sulphanes with reactive Acetylenes".	Water resource management (Both at Karunya University)	Special invitee

Dr. N. Manoj, Reader

Name of participant	Name of Seminar/Conference/Workshop	Role
Dr. N. Manoj	One day workshop in Fontiers in Chemistry DB Pampa Colle, Parumala, Mannar	Invited Speaker
Dr. N. Manoj	Invited talk on Photo induced Electron transfer at Kannur University School of Chemical Sciences, Edat, Payyannur.	

P.M. Sabura Begum

Name of Participant	Name of Seminar/ Conference / Workshop	Role
P.M. Sabura Begum	Polymer prospects of challengers	Presentation
P.M. Sabura Begum	Novel polymeric materials	Presentation

14. Awards / Honours / Fellowships etc. received:

Name of Recipient	Name of Fellowship / Honour / Award	Awarding Agency
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15. Sponsored Research Project :**Dr. K.K. Mohammed Yusuff**

Sl.No.	Title	Sponsoring Agency	Amount	Investigator(s)
1.	Special Assistance Programme (DRS)	U.G.C.	43.2 lakhs	Dr. K.K. Mohammed Yusuff (Coordinator)
2.	Chemical analysis and Standardization of Ayurvedic formulations	Kerala Government	40 lakhs	Dr. K.K. Mohammed Yusuff (Principal Investigator), Dr. S. Prathapan & Dr. Jacob Philip (Coinvestigators)

**Dr. S. Sugunan**

Sl.No.	Title	Sponsoring Agency	Amount	Investigator(s)
1.	Studies on surface properties and catalytic activity of copper chromites on thermal decomposition of ammonium perchlorate	CSIR	15,00,000	Dr. S. Sugunan
2.	Pillared clay catalyzed green route oxidation of phenol in aqueous media	KSCSTEC	10,00,000	Dr. S. Sugunan
3.	Studies on photocatalysis by nano titania in pollution control	BRNS	14,98,726	Dr. S. Sugunan
4.	Studies on photocatalysis by nanotitania for detoxification of water containing pollutants	DRDO	17,22,976	Dr. S. Sugunan
5.	Catalysis by nanocrystalline ceria modified with transition metals	IRELTDC	20,38,790	Dr. S. Sugunan

Dr. M.R. Prathapachandra Kurup

Sl.No.	Title	Sponsoring Agency	Amount	Investigator(s)
1.	A correlative study between stereochemistry and biological activity of oxovanadium (IV) complexes	CSIR	8,71,000/-	M.r. Prathapachandra Kurup
2.	Investigations of structural aspects of transition metals complexes of some aroyl hydrazones	KSCSTE, Thiruvananthapuram	7,26,000/-	M.R. Prathapachandra Kurup

Dr. K. Girish Kumar

Sl.No.	Title	Sponsoring Agency	Amount	Investigator(s)
1.	FIST	DST (Departmental project)	90 lakhs	Dr. K. Girish Kumar (Co-ordinator)
2.	Development of Electrochemical Sensors for the Determination of Pharmaceutical	DRDO	17,92,800	Dr. K. Girish Kumar

Dr. K. Sreekumar

Sl.No.	Title	Sponsoring Agency	Amount	Investigator(s)
1.	Heterogeneous Catalysts based on Polymer Supported dendrimers, their Metal Complexes and Nanoparticle Conjugates	DED0	31.5 lakhs	Dr. K. Sreekumar



Nanostructured Polymeric Ink for Printable Chemosensors KSCSTE 7.78 Dr. K. Sreekumar

16. Research Programmes and Activities :**Dr. K.K. Mohammed Yusuff, Professor**

Sl.No.	Problems/Topics	Investigator(s)
1.	Synthesis characterization and catalysis of some new transition metal complexes and zeolite encapsulated complexes	K.K. Mohammed Yusuff, Lissy. K. Thalakkottur and Annu Anna Varghese
2.	Synthesis characterization and catalysis of some new transition metal complexes with Schiff bases	K.K. Mohammed Yusuff, Manju Sebastian, Arun V., Leeju P., Varsha.G and Digna Varghese
3.	Synthesis characterization and catalysis of some supported metal catalysts, employing metal complexes.	K.K. Mohammed Yusuff and Robinson. P. Pominissery
4.	Application of nano zinc oxide in rubber and polymeric materials	K.K. Mohammed Yusuff, Rani Joseph and P.M. Sabura Begum

Dr. S. Sugunan, Professor

Sl.No.	Problem / Topic	Investigator(s)
1	Catalysis by immobilized enzymes	Dr. S. Sugunan
2.	Catalysis by spinels	Dr. S. Sugunan
3.	Catalysis by metal oxides	Dr. S. Sugunan
4.	Catalysis by mesoporous silicates	Dr. S. Sugunan
5.	Photocatalysis by modified titania	Dr. S. Sugunan

Dr. M.R. Prathapachandra Kurup, Professor

1	Studies of metal complexes of some bis (thiosemicarbazones)	Laly K. & M.R.P. Kurup
2.	Studies of metal complexes of aroyl hydrazones	Jessy Emmanuel & M.R.P. Kurup
3.	Studies of metal complexes of multidentate ligands	Sheeja S.R. & M.R.P. Kurup
4.	Studies of metal complexes of multidentate ligands	Nancy Mathew & M.R.P. Kurup
5.	Studies of metal complexes of thiosemicarbazones	Renjush R. & M.R.P. Kurup
6.	Studies of metal complexes of some hydrazones	Neema Ani Mangalam & M.R.P. Kurup
7.	Studies of metal complexes of semicarbazones	Reena T.A. & M.R.P. Kurup
8	Metal complexes of carbohydrazones and thiocarbohydrazones	Roji J. Kunnath & M.R.P. Kurup
9	Studies of metal complexes of semicarbazones	M. Sithambaresan & M.R.P. Kurup
10.	Metal complexes of semicarbazones	Annie C.F. & M.R.P. Kurup
11.	Studies of transition metal complexes	K. Jayakumar & M.R.P. Kurup



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|---|-------------------------------|
| 12. Studies of metal complexes of some bis (thiosemicarbazone)s | Suja Krishnan & M.R.P. Kurup |
| 13. Ligating properties of some anions | Sreesha Sasi & M.R.P. Kurup |
| 14. Structural and NLO properties of some metal complexes | B.N. Bessy Raj & M.R.P. Kurup |

Dr. K. Girish Kumar, Professor & Head

Sl.No.	Problem / Topic	Investigator(s)
1.	Development of Potentiometric sensors for metal ions	Beena S. & K. Girish Kumar
2.	Fabrication of electrochemical sensors for the determination of pharmaceuticals	Sindhu Issac & K. Girish Kumar
3.	Development of electrochemical sensors for the determination of pharmaceuticals	Litha V.K. & K. Girish Kumar
4.	Development of electrochemical sensors for various pharmaceuticals	Theresa C.J. & K. Girish Kumar
5.	Development of electrochemical sensors for various pharmaceuticals	Renjini Joseph & K. Girish Kumar
6.	Development of electrochemical sensors for various pharmaceuticals	Leena. R & K. Girish Kumar
7.	Development of ion selective electrodes for pharmaceuticals	Sobhana Mathew & K. Girish Kumar
8.	Application of electrochemical sensors for the determination of pharmaceuticals	Iaina A.L & K. Girish Kumar
9.	Development of electrochemical sensors	Divya Thomas & K. Girish Kumar

Dr. K. Sreekumar, Professor

Sl.No.	Name of the Scholar	Topic of Research
1.	Kannan V	Modified Natural Clay based Heterogeneous Catalysts for Organic Synthesis
2.	Mangala. K.	Metal incorporated polycarbosilanes Heterogeneous Catalysts
3.	Mahesh Kumar. M.V.	Theoretical and experimental studies on conjugated polymers of Thiophene and related Heterocycles
4.	Elizabeth C.V.	Nonlinear optical properties of polyesters and polyurethanes with main chain chirality
5.	Anoop. N.A.	Energetic binders based on polyoxetanes, polyoxiranes and polyphosphazenes



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| 6. Smitha George | Periphery modified dendrimers supported on crosslinked polymers as heterogeneous catalysts |
| 7. Jiby Gopinath | Nanostructured and multifunctional conjugated polymers as chemosensors |

Dr. S. Prathapan, Reader

Sl.No.	Problem / Topic	Investigator(s)
1.	Electron Transfer Reactions	Jeomon P. Jacob
2.	Dipolar additions	John. P.R., Sandhya Unnithan

Dr. N. Manoj, Reader

Sl.No.	Problem / Topic	Investigator(s)
1.	Synthesis of triarylcation based single oxygen sensitizers for photodynamic therapy	Seena Sebastian, Dr. N. Manoj
2.	Synthesis and study of trianglenium cations in homogeneous and heterogeneous media	Pravitha N.P., Dr. N. Manoj

Dr. P.V. Mohanan, Lecturer

Sl.No.	Problem / Topic	Investigator(s)
1.	Enzyme immobile	Ashly P.C., Dr. P.V. Mohanan
2.	Complex preparation	Priya Rajan, Dr. P.V. Mohanan
3.	Enzyme immobilization of polymer	Navya Antony

Dr. P.A. Unnikrishnan, Lecturer

Sl.No.	Problem / Topic	Investigator(s)
1.	Intramolecular Diels Alder Reactions	Eason M. Mathew
2.	Effect of molecular Geometry on Photophysics and Photochemistry of a few selected molecules	Gisha George

17. Seminar/Conference/Workshop/Refresher Course conducted by the Department:

1. National Science day was celebrated February, 2009.
2. A programme "Magic of Chemistry" was conducted for school children during the 5 Saturdays of November 2008.

18. Consultancy Work :

Sl.No.	Nature of Consultancy	Sponsoring Agency
	NIL	



DEPARTMENT OF APPLIED ECONOMICS

The Department of Applied Economics was established in the University in the year 1979. It was originally envisaged primarily as a research - oriented department with its focus on applied economic problems. Situated in a Science and Technology academic environment, the department promotes studies and research pertaining to the economic dimensions of science, technology and society as also the economic problems of the region.

1. Programmes of Study / Research

The candidates for the Ph.D and M.Phil programmes are admitted on the basis of an entrance test and an interview, the dates of which are notified by the University during the month of December. Candidates eligible for the junior research fellowship from the UGC are exempted from the entrance test for the Ph.D programme.

The Master of Business Economics (MBE) programme at the department is designed to provide advance theoretical and applied economics education, involving:

- A grounding in the principles of microeconomics
- An understanding of different schools of thought in macroeconomic theory and policy
- An appreciation of the nature of business and its role within the privacy enterprise system
- The ability to use basic economic principles to analyse decision - making within the firm and identity and explain the impact of key governmental policies on business
- A familiarity with recent developments in economic approaches to business strategy.
- A range of transferable skills in task - planning, communication, research, information analysis and interpretation and team - working.

2. Faculty Members

Sl.No.	Name	Designation	Qualification	Specilisation
1	Dr. S. Harikumar	Professor & Head	M.A., Ph.D	Agricultural Economics, Environmental Economics
2.	Dr. P. Arunachalam	Reader	M.A., M.Phil, Ph.D	Quantitative Methods, International Economics
3	Dr. D. Rajasenan	Professor	Ph.D	Econometrics, Fisheries Economics
4	Dr. M. Meera Bai	Reader	M.A. (Eco), M.A. (History), Ph.D	Industrial Economics, Gender Economics
5	Sri. P.K. Manoj	Lecturer	B.Tech, MBA, MA (Eco), M.Com, M.Phil, MCom, LLB, PH.D, CAIIB, AMT (Fin.), AMIE	Finance and Accounts, Business Strategy, Operations Management



3. Visiting Faculty (If any)

Sl.No.	Name	Designation	Qualification	Specilisation
Nil				

4. Research Staff

Sl.No.	Name	Designation	Qualification	Specilisation
1.	Merlin Joseph	Research Associate	MA., Ph.D	Industrial Economics

5. Research Scholars

Sl.No.	Name	Funding Agency	Guide	Area of Work
1.	Bindu George		Dr. D Rajasenan	Technological change and modernization in the fishing sectors: the question of substainability
2.	Joy Joseph		Dr. P.R. Wilson	An examination of household microenterprises in Urban informal sector and their impact in providing incremental income to households in Kerala.
3.	Kunhikannan. T.P.		Dr. M.K. Sukumaran Nair	Socio-economic mobility and development in Kerala - A Study across three generations
4.	Tojo Jose		Dr. P. Arunachalam	Capital flows and macro-financial cycle formation: A case study of India
5.	Smitha T.H.		Dr. K.C. Sankaranarayanan	Monetary Policy
6.	Rajini K.M.		Dr. K.C. Sankaranarayanan	Human Resource
7.	Binni Chandy		Dr. Tharian George	
8.	Mary Antony		Dr. S. Anilkumar	Exploitation of Marine Fishery Resources with the help of modern communication tools and its contributions to Kerala Economy : A case study of Kollam coastal village
9.	Sudheer. S.P.		Dr. P. Arunachalam	Impact of Globalisation on the spices economy of Kerala



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10.	Florence M.A.	UGC FIP	Dr. D. Rajasenan	Socio-economic impact of economic reforms on higher education with special emphasis on Kerala scenario
11.	Jomi Thomas		Dr. S. Anilkumar	Socioeconomic development through communication and journalism
12.	Benny Thomas		Dr. P. Arunachalam	A study on the socio-economic profile of the prisoners in the jails of Kerala
13.	Raveendra Kumar. D		Dr. D. Rajasenan	Role of Matsyafed in the Development of small scale fisheries and fisherman welfare
14.	Mini Zacharia		Dr. M.K. Sukumaran Nair	Technological capability of small firms
15.	Shelly. M.K.	ICSSR	Dr. George Varghese	A comparative study on the economic impact of self financing course at higher education
16.	Prasanth D			Decentralised planning in Kerala with special reference to special component plan
17.	Aliyar A.B.		Dr. P. Arunachalam	Relevance of Islamic economic methodology to solve the present day economic problems
18.	Harilal. G		Dr. Moly P. Koshy	A study of post VRS Life pruned Labour Force
19.	T. Dhanalakshmi	Rajiv Gandhi National Fellowship	Dr. K.C. Sankaranarayanan	A study on solid waste management
20.	Sajitha. P.P.		Dr. K.C. Sankaranarayanan	Paradigm for rural women empowerment in India - A case study of Pallakkad District
21.	V. Sreekumar		Dr. Meera Bai. M	Irrational electricity tariff in Kerala and its impact
22.	Parvathy. P		Dr. Rajasenan	Quality and safety aspects of trade with special reference to sanitary and phytosanitary



23. Saji. T.G	UGC FIP	Dr. George Varghese	Implications of fundamentals analysis in Indian Stock Market - A study with reference to software industry in India
24. Sangeetha K. Prathap		Dr. Meera Bai. M	Regional disparities in commercial banking
25. Jayasree Paul		Dr. Mary Joseph	"Sustainability of the Kerala Modal of economic growth". The role of human development
26. Ansar M.S.		Dr. P. Arunachalam	Growth characteristics of finances of the State of Kerala from 1957-58 to 2005-06
27. Ranjini R. Prabhu		Dr. D Rajasenan	
28. Binu. P. Paul		Dr. D Rajasenan	
29. Satish Bino		Dr. P. Arunachalam	Strategic supply chain engineering for rational management of Seafood Trade of India: Focussed on International Business
30. Vinod K.U		Dr. Meera Bai. M	
31. Jayson Jacob		Dr. Mary Joseph	
32. Ebrahim. Y.C.		Dr. P. Arunachalam	
33. Abdul Nazar Vallasserri		Dr. P. Arunachalam	
34. Mini. P.P.		Dr. P. Arunachalam	
35. Elizabeth George		Dr. K.C. Sankaranarayanan	
36. Nemat Shereen		Dr. K.C. Sankaranarayanan	
37. Remya Mohandas		Dr. M. Meerabai	
38. Regis Mathew			
39. Jayesh Balan		Dr. P. Arunachalam	A study on socio economic impact of AIDS on AIDS affted people in Kerala
40. Justin Joseph		Dr. P. Arunachalam	The self role of self help groups in community development: A case study of self help groups under the Palai Social Welfare Society
41. Igy George		Dr. K.C. Sankaranarayanan	Economic Linkage of Airport - A case study of Cochin International Airport Ltd.



42.	Aparna	UGC JRF	Dr. Rajasenan	Community participation and Eco-tourism Development in Kerala - A solution for sustainability
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6. Administrative Personnel

Sl.No.	Designation	No. of Posts
1	Section Officer	1
2	Sel. Gr. Assistant	1
3	Section Officer (Typist)	1
4	Peon	1
5	Sweeper cum cleaner	1
6	Assistant on daily wage basis	1
7	Asst. Librarian	1
8	Professional Assistant on daily wages	1

7. Technical Personnel

Sl.No.	Designation	No. of posts
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8. Students Enrollment

Sl.No.	Programme of Study	Men	Women	Total
1.	MBE IV	9	5	14
2.	MBE II	6	10	16
3.	M.Phil. II	2	8	10
4.	M.Phil I	2	7	9

9. Research Facilities

a. Laboratories (List out Major equipments available)

b. Library

No. of books and journals as on 31 st March of the previous year	Additions during the current year
Books - 10569	48
Back Volume - 1600	55
Indian Journals - 17	23
Foreign Journals - 11	1

c. Others

10. Distinguished visitors

Sl.No.	Name	Affiliation	Remarks
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11. Ph.Ds Awarded

Sl.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1.	A study of scheduled tribe co-operative in Wayanad district performance, problems and prospects 2008	A. Bhaskaran	Dr. M. Meera Bai

12. Publications**a. Books**

Sl.No.	Faculty	Title
1.	Dr. P.K. Manoj	<p>“Emerging technologies and financing models for affordable housing in India” (Edited Book, Editor: Dr. P.K. Manoj) (ISBN: 978-93- 80095- 01- 1) Director, Directorate of public relations and publications, CUSAT. March 2009.</p> <p>“Banking, Financial Services and Markets: Emerging Paradigms” (Edited Book, Editor : Dr. P.K. Manoj) (ISBN: 978-93-80095-02-8) Director, Directorate of Public Relations and Publications, CUSAT March 2009.</p> <p>“Special Economic Zones in India, Financial inclusion: Challenges and opportunities” (Edited Book, Editor: Dr. P.K. Manoj) (ISBN : 978-81-8387-275-1) Serials publications, New Delhi.</p>
	Dr. Meerabai. M	<p>Introduction: Emerging Trends in Technical Education in Kerala in Meera Bai. M.(Ed.) Technical Education in Kerala: Emerging Trends, Serials publications, New Delhi, 2009.</p> <p>Technical Education in India: The way ahead in Technical Education in Kerala: Emerging Trends, Serials publications, New Delhi, 2009.</p> <p>Technical Education and Gender needs in Technical Education in Kerala: Emerging Trends, serials publications, New Delhi, 2009.</p> <p>Women empowerment in Kerala - Still ahead? Article appeared in the seminar proceedings on “Women empowerment in India: Issues and challengers” organized by the Department of Economics. OU College for Women (Autonomous), Koti, Osmania University, Hyderabad during March 23-24, 2009</p>

b. Papers



13. Participation in Seminar / Conference / Refresher Courses etc by Faculty / Students.

Sl.No.	Faculty	Paper
1.	Dr. Arunachalam. P	<p>Participated and presented a paper on Special Economic Zones in India: Lessons from China: in the International Conferences on “Opportunities and Challengers in Global Business” held at International Institute of Foreign Trade and Research, Indore on 8th and 9th August 2008.</p> <p>Participated as Chairperson of a session on SEZ in India in the International Conference on “Opportunities and Challengers in Global Business” held at International Institute of Foreign Trade and Research, Indore 8th and 9th August 2008</p> <p>Participated as invited guest and Chairperson of a session in the UGC and ICSSR sponsored National Seminar on “Information Technology and Economic Growth held at Al-Amen Arts, Science and Commerce College, Bangalore on 28th and 29th August 2008.</p> <p>Participated as a Chairperson and also presented a paper on “SEZ in India: Lessons from Chins” in the International Conference organized by Serials Publications, Delhi, held from 08.09. 2009 to 12.09.2009 in New Delhi</p> <p>Participated as a Resource Person and also presented a paper on WTO and Industrialisation with special reference to SEZ in India in the Ministry of HRD, Govt. of India sponsored National Seminar on WTO and Indian Economy organized by S.T. Hindu College, Nagarcoil held on 19th and 20th September 2008.</p> <p>Participated and presented a paper on SEZ in India: Lessons from China, in an International Conference, on advanced computing and communication technologies for Higher performance applications conducted from 24th to 26th September 2008 at Federal Institute of Science and Technology (FISAT), Angamaly, Cochin, Kerala.</p> <p>Participated as a Keynote Speaker in a UGC sponsored National Seminar on India’s Economic Reforms-recent changes and future challengers organized by Sri. Sarada College for Women, Salem, Tamil Nadu held on 27.09.2008.</p> <p>Participated as a Chairperson in a Technical Session SEZ - Globalisation, Social and Economic Development in a UGC, ASHSS, ICSSR(SRC) and APSCHE sponsored National seminar on “Special economic Zones: Engines of growth and social development for India-present problems and future prospects” held at Osmania University, Hyderabad held on 16th and 17th October 2008.</p> <p>Participated and presented a paper on SEZ in India: Lessons from China in a UGC, ASHSS, ICSSR(SRC) and APSCHE sponsored National seminar on “Special Economic Zones: Engine of growth</p>



and social development for India-Present problems and future prospects” held at Osmania University, Hyderabad held on 16th and 17th October 2008.

Participated as an expert and chaired a session in a National Seminar on Rural Development in India: Opportunities and Challenges, organized by Department of Economics, Manonmaniyam Sundearanar University, Tuiryunelvel, Tamil Nadu.

Participated and presented a paper on information technology for Rural Development: Lessons from Netherlands, in a National Seminar on Rural Development in India: Opportunities and Challenges, organized by Department of Economics, Manonmaniyam Sundearanar University, Thiryunelvel, Tamil Nadu.

Participated and presented a research paper on “Special Economic Zones and Displacement of population in India” in a National Seminar on Population Dynamics and Human Development”, organized by the Centre for Population Studies, Madras University, Chennai-600 005 held from 21.11.08 to 22.11.08.

Participated in as an expert to give a talk on “Impact of Educational Backwardness of Minorities” organized by PG Department of Economics, MES Mampad College, Malapuram District, Kerala held from 24.11.08 to 25.11.08.

Participated in as an expert and also presented a research paper on “Information Technology and Skill Development in India”: in the UGC sponsored National conference oin “Emerging Entrepreneurial Strategies for self employment and skill development” organized by Department of Commerce and research centre, Scott Christian College, Nagercoil, Tamil Nadu held on 12th and 13th of December 2008.

Participated as an expert and presented a research paper on “Global Economic Recession: Impact on External Sector” in a National seminar on “Global Economic Recession”, organized by the Department of Economics, MAMO College, Mukkam, Calicut, Kerala, held on 2nd and 3rd of January 2009.

Participated as an expert and presented a research paper on “Economic Impact of Identity Theft in India: Lessons from America” in the International Workshop on information in the Digital Age: Security, Identity and Management (INDIA - SIM '09) sponsored by City University, London and held during January 22-23, 2009 at the International Institute of Information Technology, Bangalore

Participated as an expert and presented a research paper on “Special Economic Zones in India: Opportunity for increasing our competitiveness” in a UGC sponsored National Economic Conference on India at 61: Towards a new development paradigm” held during 23rd and 24th of January 22-23, 2009 at Ar. Joseph’s College, Bangalore.



Participated as a resource person and presented a research paper on “Higher Education in India: Issues and Imperatives”, in a NAAC sponsored National Seminar on Quality Sustenance in Higher Education held on 20th and 21st February 2009 at the St. Mary’s College, Thoothukudi.

Participated as a Keynote in a UGC sponsored National Conference on “Inclusive Growth” organized by Holy Cross College (Autonomous) Thiruchrappalli, Tamil Nadu, held on 26th and 27th February 2009.

Presented a research paper on “Higher Education in India: Issues and Imperatives” in the National Seminar on National Conference on “Inclusive Growth” organized by Holy Cross College (Autonomous) Tiruchrappalli, Tamil Nadu, held on 26th and 27th February 2009.

Presented a research paper on Trade and Eradication of Poverty in India: Special Economic Zones perspective at the National Seminar on “Linkages between Trade and Poverty” organized by the Department of Economics and Centre for youth Development studies”, Tiruchirappalli, Tamil Nadu held on 4th and 5th March, 2009.

Participated as a Resource Person and Chaired a session on Educationa and Women Empowerment at the National Seminar on “Role of Empowered Women in Empowering Women” organized by Sarah Tucker College (Autonomous) Tirunelveli - 7, held on 12th and 13th March 2009.

Participated in the National Seminar on Banking organized by the Department of Economics, Cochin Universtiy of Science and Technology, Kochi - 22, held on 23rd and 24th March 2009.

Participated as a Resource Person and presented a paper on ECONOMIC RECESSION 2008: IS GLOBAL ECONOMY GETS GOLD WHEN USA SNEEZES? In a national seminar on “Contemporary Relevance of economic ideas of Jawaharlal Nehru against the backdrop of Global Recession” organized by Centre for Nehru Studies, Manonmanjam Sundraranar University, Tirunelveli held on 24th, 25th and 26th March 2009.

Participated as a Resource Person and presented a paper entitled “Economic Disparities and Terrorism” at the International Seminar on “Ethnic Identity and Terrorism” organized by Department of Sociology, University of Madras, Chepauk, Chennai held on 25th and 26th March 2009.

Participated as Resource Person and presented a paper entitled “Investment in SEZ and Transformation of India: The China Way” in a UGC sponsored National Seminar of Infrastructure Investment for the Transformation of Modern India: Vision 2020” organized by Nirmalagiri College, Kannur, held on 26th and 27th and 28th March 2009.”



Sexual Harassment at Workplaces', organized by the National Institute of Public co-operation and Child Development, Southern Regional Centre, Bangalore during September 23-25, 2008.

Dr. M. Meerabai 'Women Empowerment in India: Issues and Challenges' organized by the Department of Economics, OU College for women (Autonomous), Koti, Osmania University, Hyderabad during March 23-24, 2009.

Dr. S. Harikumar

1. Urban Health status, a study of Cochin Corporation, International Conference on Health and Development, Kannur University, Oct 2009.
2. Impact of Globalisation on the employment in the small scale sector, state level seminar on impact of globalization on small scale sector, N.S.S. College, Cherthala, 29th October.
3. Micro Finance: Prospects and Challenges, National Seminar on Micro Finance and Women Empowerment, Government College, Kodancherry, Kozhikode, November 2008.
4. Inter District Inequality in infrastructural Development of Kerala, National Seminar on Infrastructure Investment for the Transformation of Modern India: Vision 2020, Nirmalagiri College March 2009.
5. Poverty inflation and Development in India during Post Reform Period, Key Note address, National seminar, Government Brennan College, March 2009.
6. National Seminar on inclusive growth. Albertain institute of Management, January 2009.
7. International Conference of SME, Social Responsibility and Opportunities at the Bottom of the pyramid, Institute of Small Enterprises and Development, December 2008.
8. Seminar on Islamic Finance, Indian Association for Islamic Economics, Kerala Chapter, February 2009. Seminar on Slowdown in the Economy - Impact on Kerala, Annual conference of confederation of Indian Industries Kerala Chapter, February, 2009.

Research Papers

Dr. Arunachalam "Special Economic Zones in India: Lessons from China" Proceedings in an International Conference, on advanced computing and communications Technologies for Higher performance applications conducted from 24th to 26th September 2008 at Federal Institute of Science and Technology (FISAT), Angamaly, Cochin, Kerala. Special Economic Zones, Proceedings, National seminar on Indias Economic Reforms-recent.

Dr. S. Harikumar 1. Knowledge Economy in Kerala, Kerala economy trends during the Post Reform Period, ed. K. Rajan, Srials Publications 2008



2. Higher Education System in Kerala, Technical Education in Kerala Emerging Trends ed. Meera Bai. M. Serials Publications, 2009.
3. Environment and Health Status: A Some issues in Ernakulam District, Perspective of Health Economics ed E. Asokan, Serials publications, 2009.
4. Liberalisation and demand for Technical Manpower: Case of Kerala, Education and Health in the Post Reform Period, ed. K. Gangadharan, Serials publications, 2009

Dr. P.K. Manoj

“Learn Manufacturing: Strategy for enhanced competitiveness of Indian Manufacturing Sector” *International Journal of Management Sciences* (ISSN 0973-2101), Vol. 4, No.2, Dec. 2008, pp 85-99

“Flexible Manufacturing for Enhanced productivity of Indian Manufacturing Industry: An Analysis” *South Asian Journal of Socio-Political Studies* July-Dec 2008, Vol. 9, No.1, pp. 52-57.

“Learning from Cross-Country Experiences in Housing: a Microfinance Approach for Inclusive Housing in India: *Journal of Global Economy* Vol.4, No.3, July-Sept. 2008

“Cost competitiveness and Indian Economy: Significance of Mandatory Cost Audit in the Globalized Regime” *The Management Accountant* Vol. 43, No.4, April 2008, pp. 204-208 & p. 211

“Economics Education in India: Need for a Market Friendly Curriculum in the Globalised Regime” *University News* Vol. 46, No.27, July 07-13m 2008, Association of Indian Universities (AIU), New Delhi, pp. 01-09

“Advanced Manufacturing Technologies and Competitiveness of Indian Industry” *Erudition*

The Albertian Journal of Management, AIM, Ernakulam, Vol. 2, Issue 2, July 2008, pp. 109-115.

15. Sponsored Research Projects

Sl.No.	Title	Sponsoring Agency	Amount	Investigator(s)
1.	“Development of an Inclusive and Sustainable Housing Finance System in India: Evidence form the State of Kerala”.	UGC (March 2009)	Rs. 4,76,200/-	Dr. P.K. Manoj (PI)
2.	“Social Safety Nets, Technology & Industrial Policies for Informal Women Workers in Globalised India”: sponsored A Micro Level study - UGC Major Research Project (Ongoing)			Dr. M. Meerabai
3.	MappiMapping of Technically Skilled Manpower in, Sponsored by ICSSR, New Delhi.			Dr. S. Harikumar



16. Research Programmes and Activities:

Sl.No.	Problem / Topic	Investigator(s)
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17. Seminar / Conference / Workshop / Refresher Courses conducted by the Department

Sl.No.	Title	Duration	Coordinator	Funding Agency
1.	National Seminar (Two day) Emerging Trends in Technical Education in Kerala	2 days	Dr. M. Meera Bai	AICTE
2.	"Intellectual Property Rights"	1 day	Dr. M. Meera Bai	Kerala State Council for Science, Technology and Environment
3.	National Technology Seminar June 09, 2008, in connection with National Technology Day 2008 (NTD 2008) celebrations, "Emerging Technologies and Financing Models for Affordable Housing in India". 01 Day 09 June 2008 KSCSTE (Govt. of Kerala)	1 day	Dr. P.K. Manoj	KSCSTE (Govt. of Kerala)
4.	Second National Banking Seminar, "Banking, Financial Services and Markets: Emerging Paradigms" 2 Days - 23-24 March 2009 by UGC	2 days	Dr. P.K. Manoj	UGC

18. Consultancy Work

Sl.No.	Name of Consultancy	Name of Consultant	Sponsoring Agency
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DEPARTMENT OF ATMOSPHERIC SCIENCES

The Department of Atmospheric Sciences was formed in 1996 by bifurcating the erstwhile Physical Oceanography and Meteorology Division of the School of Marine Sciences. The Department started offering a 4-semester M. Sc programme in Meteorology since 1975 and a 4-semester M. Tech in Atmospheric Science since 1989.

Apart from teaching activities, research works in modelling, diagnostic, theoretical and observational studies in the field of Meteorology/Atmospheric Sciences are in full swing. Government of India has identified the Department of Atmospheric Sciences, CUSAT as one of the Centers of Excellence to carry out research work in the frontier area *Mesoscale Modelling of Monsoon Related Predictions*, an ambitious project under the **New Millennium Indian Technology Leadership Initiative (NMITLI)**, along with other premier national institutes, such as IIT, Delhi, IISc., Bangalore, NAL, Bangalore, CMMACS, Bangalore, IITM, Pune and TIFR, Bombay. Presently CUSAT is involved in the Phase II research activities of NMITLI Project.

The University Grants Commission has selected the Department of Atmospheric Sciences under its **Special Assistance Programme (SAP)** based on the quality of teaching, academic achievements, research in thrust area and viable potential for future development. The essence and primary aim of SAP of the UGC is the combination of teaching and research to encourage group research efforts. The project entitled, ***Influence of Arabian Sea and the Orography of Western Ghats on the Weather and Climate of Kerala***, under UGC – SAP - Level DRS Phase I from August 2002 to July 2007. After the successful completion of SAP Phase I, UGC has sanctioned **SAP Phase II** project for next 5 years (2007-2011) for pursuing research on the topic 'A Study on the Changes in the Land-use Pattern and Deforestation in the Western Ghats and its Effect on the Rainfall of Kerala'. The Department receives Rs. 50 lakhs to carry out research in the frontier area of Atmospheric Sciences. The financial support for five years is expected to develop the Department into a Centre of Excellence. This programme aims at encouraging the pursuit of excellence and team work in Monsoon Research in the Asia-Pacific region through concerted efforts on advanced research, establishing a state-of-art database on monsoon and allied fields including satellite data, manpower development and extension services and training.

Department of Science and Technology (DST) identified the Department of Atmospheric Sciences as one of the premier centres in India in the field of Atmospheric Research and Teaching and sanctioned Rs. 30 Lakhs under its **FIST** programme.

UGC has also identified this Department as the Nodal Centre and funded for introducing Computer Applications courses at the post graduate level and extending lectures to other selected Departments in the University.

The Department has been pursuing research on the Indian Monsoon for the last two decades. Taking into account the often-felt need for a coordinated effort on monsoon research in the country, a Centre for Monsoon Studies was established in the Department in July 2000.



Six efficient and dynamic faculty are available in the Department. Prestigious awards such as BOYSCAST, Commission of the European Communities (CEC) Fellowships, etc. were awarded to the faculty. The Department has produced 42 Ph. Ds and published about 234 research papers in reputed international and national scientific journals. In addition, more than 300 research papers were presented in various national/international scientific conferences in India and abroad. Eminent Scientists and Professors are often invited to the Department for giving lectures in advanced areas

The Department has high speed computational facilities, an automatic weather station and a full-fledged surface weather observatory. It has also setup a data bank, which has NCEP/NCAR reanalysis global data, UARS data from NASA, Rocket data, MST Radar data, surface weather observations, TOMS data, etc.

During the last 5 years, the Department organized 8 national-level seminars. In addition, 4 UGC Refresher Courses were conducted for the benefit of College teachers. Several national and International Conferences in Climate Variability and Predictability, Stratosphere Troposphere Interactions, TROPMET2000, Scale Interactions and Variability of Monsoons, Atmosphere Ocean Interactions, etc were successfully organized by the Department.

1. Programmes of Study/Research

- (1) M.Sc. Meteorology
- (2) M.Tech Atmospheric Sciences
- (3) Ph.D Programme in Meteorology/Atmospheric Science

The syllabi for both the M.Sc. Course in Meteorology and the M.Tech Course in Atmospheric Sciences are fully modified at par with the syllabi of foreign universities of international standard. The M.Sc. Course is now in Credit System with 50% internal and external evaluations and the M.Tech Course with 100% internal evaluation. M.Tech Course is a four-semester programme from 2002 admissions.

2. Faculty Members

Sl.No.	Name	Designation	Qualification	Specilisation
1.	Dr. Santosh. K. R	Reader & Head	M.Sc., Ph. D	Remote Sensing
2.	Dr. H. S. Ram Mohan	Professor	M.Sc.Tech., Ph.D	Agricultural Meteorology, Hydrometeorology
3.	Dr. K. Mohan Kumar	Professor	M.Sc., Ph. D	Stratosphere-Troposphere Interactions
4.	Dr. C. A. Babu (on sabbatical leave)	Reader	M.Sc., Ph. D	Boundary layer Meteorology
5.	Sri. B. Chakrapani	Lecturer (Sel. Gr.)	M.Sc.	Numerical Modelling
6.	Dr. V. Madhu	Lecturer	M.Sc., Ph. D	Middle Atmospheric Dynamics
7.	Dr. P. V. Joseph	Emeritus Professor	MA, Ph.D	Tropical Meteorology
8.	Dr.B.V. Charlotte	Lecturer on contract basis	M.Sc., Ph.D	Synoptic Meteorology



3. Visiting Faculty (If any) NIL

Sl.No.	Name	Designation	Qualification	Specilisation
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4. Research Staff

Sl.No.	Name	Designation	Qualification	Specilisation
1.	Dr.Venu G Nair	RA, NMITLI Project	M.Sc., Ph.D	
2.	Prasanth A Pillai	SRF, NMITLI Project	M.Sc.	
3.	Krishnamohan	JRF, NMITLI Project	M.Sc	
4.	Rajeev K	JRF, SAP-II	M.Sc	
5.	Shereekul Ansar	JRF, SAP-II	M.Sc.	

5. Research Scholars

Sl.No.	Name	Funding Agency	Guide	Area of Work
1.	Asha S Philip	CSIR SRF	Dr. C. A. Babu	Meteorology
2.	Abish B	CSIR SRF	Dr. K.Mohan Kumar	
3.	Anila Alex	CSIR JRF	Dr. K.Mohan Kumar	
4.	Jayakrishnan P R	CSIR JRF	Dr. C. A. Babu	"
5.	Johnson Zacharia		Dr. C. K. Rajan	"
6.	Lorna R Nayagam	Uni-JRF	Dr. H.S. Ram Mohan	"
7.	Nithin Viswambharan	UGC JRF	Dr. K.Mohan Kumar	"
8.	Prasanth A Pillai	CSIR-SRF	Dr. K. Mohan Kumar	"
9.	Rajesh. J	Uni-JRF	Dr. K. Mohan Kumar	"
10.	Resmi E A		Dr. K. Mohan Kumar	"
11.	Sivaprasad.P	UGC-JRF	Dr. C. A. Babu	"
11.	Smitha A	CSIR SRF	Dr. H. S. Ram Mohan	"
12.	Smitha John		Dr. K. Mohan Kumar	
13.	Subash. N		Dr. H. S. Ram Mohan	"
15.	Vijayakumar. P	CSIR-JRF	Dr. Santosh. K. R	"
16.	Vanisree. S		Dr. C. K. Rajan	"
17.	Gopakumar C.S		Dr. H.S. Ram Mohan	
18.	Joseph Sebastian M D		Dr. C. K. Rajan	
19.	Krishnakumar K.N		Dr. H.S.Ram Mohan	"
20.	Sailaja Devi T		Dr. C. K. Rajan	"
21.	Sakkeer Hussain. A		Dr. Santosh K R	"
22.	Sabin. T. P		Dr. C A Babu	
23.	Sanjay Kumar Mehta		Dr. K. Mohan Kumar	
24.	Shaji Joseph E		Dr. C. K. Rajan	"



6. Administrative Personnel

Sl.No.	Designation	No. of Posts
1.	Section Officer	1
2.	Office Supdt.	1
3.	Assistant	1

7. Technical Personnel

Sl.No.	Designation	No. of Posts
1.	Technical Assistant Gr. III	1
2.	Technical Officer Gr. I	1

8. Student Enrollment

Sl.No.	Programme of Study	Men	Women	Total
1.	M.Sc. Meteorology	5	7	12
2.	M.Tech Atmospheric Sciences	-	2	2
3.	Ph. D	2	1	3

9. Research Facilities

a. Laboratories (List out Major equipments available)

1. Meteorological Instrumentation Laboratory
2. Synoptic Lab
3. Computer Lab
4. Surface Meteorological Observatory
5. Modelling Lab : SGI O2/origin 250/IBM/ Workstation
6. Atmospheric Data Bank

b. Library

No of books and Journals as on 31 st March of the Previous Year	Additions during the current year
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c. Others

10. Distinguished visitors

Sl.No.	Name	Affiliation	Remarks
1.	Dr. Radhakrishnan	VSSC	
2.	Dr. P. Pradeep	Pune University	

11. Ph.D s Awarded

Sl.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1.	<i>Tropical Mesoscale Convective Systems and Associated Energetics: Observational and Modeling Studies</i>	Abhilash S	Dr.K.Mohan Kumar



12. Publications

a. Papers

Sl.No.	Name of Paper
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1. Local Hadley Circulation Over Asian Monsoon Region Associated with Tropospheric Biennial Oscillation and El Nino-Southern Oscillation
 2. Climatology of precipitable water and precipitation over Middle East region and its fluctuation associated with low pressure system
 3. Simulation of microphysical structure associated with tropical cloud clusters using mesoscale model and comparison with TRMM observations
 4. Stratosphere troposphere interaction associated with biennial oscillation of Indian summer monsoon
 5. An ocean-atmosphere interaction mechanism for the active break cycle of the Asian summer monsoon
 6. Microphysical Structure associated with Tropical Cloud Clusters simulated using a mesoscale model and comparison with TRMM observations
 7. Role of TBO and ENSO scale Ocean-Atmosphere interaction in the Indo-pacific region on Asian Summer Monsoon variability,
 8. Vertical Structure and Evolution of a Supercell Storm: Observations Using VHF Radar
 9. Effect of late 1970's Climate shift on Tropospheric Biennial Oscillation – Role of Indian Ocean processes on Asian Summer monsoon
 10. Independent and combined influence of El Nino Southern Oscillation and Indian Ocean dipole on tropospheric biennial oscillation
 11. Common mode of variability of boreal summer intraseasonal oscillation and tropospheric biennial oscillation
 12. Seasonal modification of Walker Circulation Cells associated with Tropospheric Biennial Oscillation
 13. Stratosphere-Troposphere coupling over Indian monsoon region
 14. Objective definition of the Indian summer monsoon onset, Journal of Climate
 15. Possible link of stratospheric QBO and TBO associated with Indian-Australian monsoon systems
 16. Solar signal in seasonal moisture fields over peninsular India
 17. Variability and Teleconnectivity of Northeast Monsoon Rainfall over India
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b. Books

Sl.No.	Name of Book
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1. Stratosphere Troposphere Interactions: An Introduction by K. Mohanakumar Published by Springer, The Netherlands, June 2008 ISBN 9781402082160

**13. Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.**

Name of Participant	Name of Seminar / Conference/ Workshop	Role
Prof. K.Mohan Kumar	37 th COSPAR Scientific Assembly, Montréal, Canada , 13-20, July 2008	Presented a paper
Prof. K.Mohan Kumar	SPARC IV General Assembly, Bologna, Italy 31 August-5 Sept 2008	Presented a paper
Dr.V. Madhu	SPARC IV General Assembly, Bologna, Italy 31 August-5 Sept 2008	Presented a paper
Dr. C. A. Babu	First International conference on “water resources and climate change in the MENA region” at Muscat, 2-4 November 2008.	Presented a paper
Prof. K. Mohan Kumar	89 th Annual Meeting of America Met Society, Phoenix, Arizona, USA, 11-18 January 2009	Release of Book : Stratosphere Troposphere Interactions: An Introduction
Dr. Venu G Nair	21 st Kerala Science Congress, Kollam, 28-31, January 2009	Participated

14. Awards/ Honours/ Fellowships etc. received

Name of Recipient	Name of Fellowship/ Honour /Award	Awarding Agency
Das Someshwar., S. Abhilash , M. Das Gupta, J. P. George, S. R. Kalsi, S. K. Banerjee, S. B. Thampi, D. Pradhan and K. Mohanakumar (2006) Assimilation of Doppler Weather Radar wind in a mesoscale model and their impact on simulation of thunderstorms and severe weather systems. Report no. NMRF/RR/01/2006, 120 pages, Published by NCMRWF	SAARC Award for Senior Scientists in Meteorology for the year 2007	SAARC
Dr.K.Mohan Kumar	ASLI's Choice award for the best book of 2008 in the fields of meteorology/ climatology / atmospheric sciences for the book : StratosphereTroposphere Interactions: An Introduction	Atmospheric Science Librarians International (ASLI), USA

**15. Sponsored Research Projects**

Sl.No.	Title	Sponsoring Agency	Amount (Lakhs)	Investigator(s)
1.	Project on Fund for Improvement of Sci. & Tech. Infrastructure	DST	30	Head of the Department
2.	Evaluation of Pollutant Transport and Dispersion in a Coastal area using Mesoscale Model	DST	9.12	G. Bindu
3.	Vertical Structure and Dynamics of Tropical Mesoscale Convective Systems : Observational and Modelling Studies	ISRO	18.11	K.Mohan Kumar
4.	Numerical Simulation of Atmospheric Dispersion for Kerala Coast	ISRO	7.11	C. K. Rajan
5.	Study of Rain Bearing Monsoon Clouds Using INSAT Data	ISRO	7.47	Santosh K R
6.	Intra-seasonal Oscillation of Precipitation and Its Coherence with Circulation During Monsoon Using TMI Data	ISRO	3.96	H. S. Ram Mohan & Santosh K R
7.	Extended Range Prediction of Active and Break Phases of Indian Summer Monsoon	ISRO	19.80	P. V. Joseph & C. A. Babu
8.	Meteorological Observation Network in Kerala (Anthariksha)	ISRO, Planning Board, Govt. of Kerala & CUSAT	25.00	C.K.Rajan
9.	Impact of Bay of Bengal cyclones & West Pacific Typhoons in the sea & swell conditions over Bay of Bengal	SNOM & CUSAT	5.00	C.K.Rajan
10.	Study on the Anomalous Propagation over East Central Arabian Sea	NODPAC & CUSAT	5.00	C.K.Rajan
11.	Effect of global warming and the land use changes on the weather and climate of Kerala	SAP -DRS Phase II-UGC	36.50	K.Mohan Kumar
12.	Mesoscale modeling for monsoon related weather prediction- Ph II- Development of topography module and coupled slab ocean atmosphere model simulations of Intraseasonal variability of monsoon using Varsha GCM	CSIR- NMITLI Ph.II	31.93	K.Mohan Kumar



16. Research Programmes and Activities:

Sl.No. Problem / Topic	Investigator (s)
1. TBO and Monsoon Variability	Prasanth A Pillai / Dr. K. Mohan Kumar
2. Numerical Simulation of Atmospheric Dispersion over Kerala coast	Vanisree S / Dr. C. K. Rajan /
3. SST and Deep Convection	Sabin. T. P. / Dr. C A Babu
4. Indian Ocean Climate Variability	Asha. S. Philip / Dr. CA Babu / Hareesh Kumar
5. Development of Drought Indices for Indo Gangetic Basins	Subash. N / Dr. H. S. Ram Mohan
6. Crop Weather Modelling of Coconut in the Humid Tropics	Krishnakumar K.N. / GSLHV Prasada Rao / Dr. H. S. Ram Mohan
7. Mesoscale Modelling of a Coastal Environment	B. Chakrapani / Dr. H. S. Ram Mohan
8. Climate Variability and Plantation Crops	Gopakumar C. S / GSLHV Prasada
9. Physical Effects of Rainfall on Exploitation of Hevea	Dr. C. K. Rajan / Sylajadevi
10. Study of Monsoon Clouds using Satellite Data	Vijayakumar P / Dr. Santosh. K. R
11. Boundary Layer Dynamics and Monsoon	Jayakrishnan P R / Dr. C. A. Babu
12. Influence of Arabian Sea on the Weather & Climate of Kerala	Rajesh. J / Dr. K. Mohan Kumar
13. Inter-Tropical Convergence Zone and its Variability	Joseph Sebastian M.D / Dr. C. K. Rajan
14. Influence of Topography on the Climate of Kerala	Lorna R Nayagam/Dr. H. S. Ram Mohan
15. Mixed Layer Variations in the Arabian Sea	Johnson Zacharia / Dr. C. K. Rajan
16. Influence of wind stress curl over the Bay of Bengal	Smitha A / Dr. H. S. Ram Mohan
17. Sudden Stratospheric warming over Northern Hemisphere	Reshmi E A / Dr. K. Mohan Kumar
18. Stratosphere-Troposphere coupling	Nithin Viswambharan / Dr. K. Mohan Kumar
19. Mesoscale Modelling of Atmospheric Phenomena	Smitha John / Dr. K. Mohan Kumar
20. Aerosol Study in Boundary Layer	Sivaprasad P / Dr. C. A. Babu
21. Ozone – climate interaction	Anila Alex / Dr. K. Mohan Kumar
22. A study on the dynamics of atmospheric aerosols over Indian subcontinent and its influence on Indian summer monsoon	Abish. B/Dr.K.Mohan Kumar



17. Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department

SI.No.	Title	Duration	Coordinator	Funding Agency
1.	Meeting to honour Chaandrayan Mission and Book Release of Dr.K.Mohan Kumar	9 Dec 2008	Dr. H. S. Ram Mohan	IMS Cochin Chapter & DAS
2.	Expert committee meeting of DST scientists in connection with ST radar Installation	25 Feb 2009	Dr.K.Mohan Kumar	DST
3.	Workshop conducted on WMO Day 2009: Theme : <i>Weather, climate and the air we breathe</i>	23 March 2009	Dr. H. S. Ram Mohan	IMS Cochin Chapter & Department of Atmospheric Sciences

18. Consultancy Work : Nil

SI. No.	Name of Consultancy	Name of Consultant	Sponsoring Agency
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DEPARTMENT OF BIOTECHNOLOGY

The mandate of the Department is to train human resources in Biotechnology and to cater to the needs of the Nation in harnessing the vast biodiversity and to promote bioindustries, not only in the state of Kerala but also in the Nation. The M.Sc. programme in Biotechnology offers comprehensive education in all aspects of modern Applied Biology. The programme has been designed in such a way that the students are well trained in state-of-the-art techniques in the world of Fermentation, Molecular Biology, Genetic Engineering, Bio-informatics, Molecular Neurobiology and Immunology. The theoretical and practical knowledge acquired by the student during the first three semesters is perfected through an intensive dissertation work during the fourth semester. Topically relevant problems are identified for the purpose so as to impart training in identification and execution of research problems and interpretation of data.

Most of the M. Sc. students opt for research programmes in national/international laboratories after they complete their programme. They also find employment in industries, educational institutions and other organizations involved in R and D and also in medical, pharmaceutical, agricultural and environmental biotechnology sectors.

Research activities of the Department are presently centered on areas such as Microbial Technology, Medical Biotechnology, Genetic Engineering, Molecular Neurobiology, Cell Biology and Plant Biotechnology. The research students generally get absorbed as Scientists in different national and international laboratories and as lecturers in Universities/Colleges.

On an average, about 60% of the M.Sc students clear the NET and 80% pass the GATE.

50 students have so far taken their doctoral degrees from the Department, with about **27** scientific publications from the Department.

A Centre for Neurosciences was established during 2000 in the Department with the intention of bringing the Industries, medical colleges and hospitals closer to research accomplishments. The Centre organizes annual workshops, meetings, lectures and awareness programmes. The Centre also takes up extension activities like conducting neurological surveys, diagnosis, awareness programme, clinical and scientific testing. The research interests of the Centre include molecular aspects of Neurotransmitter receptors functional regulation in relation to Diabetes, Cell proliferation, Cancer, Epilepsy, Herbal medicines, Alcoholism, Bone fracture healing, Stem Cell differentiation Aging, Hypoxia and Hypoglycemia. The Centre offers an elective paper in Molecular Neurobiology for M.Sc students and other interested students in the University. It provides opportunities to do research activities in Molecular Neurobiology for students of India and abroad.

Every year the Centre conducts World Brain Awareness Programme for the students of Colleges, Schools and Public. This makes people aware how efficiently they can make use of their brain for a better living avoiding disease occurrence.

The Department has linkages with R & D Institutions and Industries such as Sree Chitra Tirunal Institute of Medical Sciences, Indian Spices Research Board, Rajiv Gandhi Centre for



Biotechnology, Amirtha Institute of Medical Sciences, Lakeshore Hospital and Research Centre, Madona Hospital and Research Centre, Synthite Industries, Kerala Ayurveda Pharmacy Ltd, Medical College, Kottayam, MOSC Medical College, Kolenchery and Muvattupuzha Medical Centre.

1. Programmes of Study/Research: M. Sc. and Ph. D., Biotechnology

2. Faculty Members

Sl.No.	Name	Designation	Qualification	Specialisation
1	Dr. M Chandrasekaran (LWA)	Professor	Ph. D.	Microbial Technology
2	Dr.C.S.Paulose	Professor & Head, DBT	Ph. D.	Molecular and Cellular Neurobiology
3	Dr. Sarita.G.Bhat	Senior Lecturer	Ph.D.	Bioprocess Technology
4	Dr Padma Nambisan	Senior Lecturer	Ph.D.	Plant Biotechnology

3. Visiting Faculty (If any) - NIL

Sl.No.	Name	Designation	Qualification	Specialization
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4. Research Staff - NIL

Sl.No.	Name	Designation	Qualification	Specialization
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5. Research Scholars

Sl.No.	Name	Funding Agency	Guide	Area of Work
1.	Nandhu M S	-	Dr. C. S Paulose	Spinal cord Regeneration: Therapeutic role of neurotransmitters combination and bone marrow supplementation
2.	Linda Louis	CSIR	Dr. Sarita G Bhat	Studies on Vibriophages
3.	Satheesh kumar S	-	"	Studies on virulence factors in environmental vibrios
4.	Jes Paul	-	Dr. C S Paulose	Stems cell therapy in Parkinson 's disease: Dopaminergic receptor subtypes functional regulation by norepinephrine, serotonin, acetylcholine and GABA
5.	Prasanth S	CSIR	Dr. Sarita G Bhat	Isolation, purification, characterization and application studies of cysteine protease inhibitors from microorganisms
6.	Jikku Jose	-	Dr. Padma Nambisan	Studies on induction of variability for enhanced oil production through in vitro culture in jatropa curcas
7.	Jasmin Koshy	-	"	Studies on the use of mushrooms for fibre extraction from weeds and agri waste



8	Anita Pinheiro	-	"	IN VITRO evaluation of microbial retting of agri waste for fibre extraction
9.	P Karthikeyan	-	Dr. M Chandrasekaran	Studies on archaeobacteria
10.	Ummu Habeeba K	CSIR	Dr. Padma Nambisan	Studies on genetic engineering of fatty acid metabolism in jatropha (<i>Jatropha curcas</i> L.) for enhanced biodiesel production
11.	Rekha Mol K R	CSIR	Dr. Elyas K K	Natural peptides of therapeutic importance

6. Administrative Personnel

Sl.No.	Designation	No. of Posts
1	Section Officer	One
2	Office Supdt.	One
3	Clerical Assistant.	One
4	Peon	One
5	Sweeper-cum-cleaner	One

7. Technical Personnel - NIL

Sl.No.	Designation	No. of Posts
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8. Student Enrollment

Sl.No.	Programme of Study	Men	Women	Total
1	M.Sc.	6	8	14
2	Ph.D.	5	6	11

9. Research Facilities

a. Laboratories (List out Major equipments available)

1. PCR unit-Automatic Thermocycler (Eppendorf) – 2 no.s
2. Gel Documentation system (Amersham Pharmacia)
3. Gel documentation system (Biorad)
4. HPLC (Shimadzu)
5. Liquid Scintillation Counter (Wallac 1409)
6. Protein gel electrophoretic systems (Amersham Pharmacia)
7. Chromatographic columns (Amersham Pharmacia)
8. Refrigerated Centrifuge (Heraeus)
9. Spectrophotometer (Spectronic Genesis 5, Milton Roy (USA))
10. Spectrophotometer (Shimadzu)
11. Hybridization oven (Amersham Pharmacia) 2 no.s
12. Fermenter 14 litre - Fully automated (Scigenics)



13. Mini jar fermenter (Eyela Inc. Japan)
14. Gamma Counter (ECI)
15. Phase contrast microscope (Nikon, Japan)
16. Inverted Phase Contrast Microscope (Olympus CK 40)
17. Lyophilizer (Yamata Neocool, Japan)
18. Electronic balance (Mettler) 2no.s
19. UV Cross linker (Hoefer)
20. -70°C Freezer (Sanyo)
21. Ice flaker (Sanyo)
22. Refrigerated Centrifuge (Sigma)
23. Real Time PCR
24. Confocal Microscope
25. Nanospectrophotometer
26. Cryostat

b. Library

No of books and Journals as on 31 st March of the Previous Year	Additions during the current year
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1514

96

c. Others

10. Distinguished visitors

Sl.No.	Name	Affiliation	Remarks
1	Prof. K Subha Rao	University of Hyderabad Hyderabad	Scientific discussion, Intl. meeting & for exam
2.	Dr. K P Mohankumar	IICB, Kolkatha - 32	"
3.	Dr. B G Unni	Deputy DirectorDST,	"
4.	Dr. Kamilesh K Dey	Molecular NeuropharmacologyIreland	"
5.	Dr. Justin V Moorthy	University College Ireland	"
6.	Prof. P J George	Allahabad Agricultural Uty.Allahabad	"
7.	Dr. J F Cockren	Massey University, Newzealand	"
8.	Dr. V R Nair	IRE Research CentreBeach Road, Kollam	"
9.	Prof.P Balaram	IISc., Bangalore	"
10.	Prof.K S Krishnan	TIFR, INCBS, Bangalore	"
11.	Prof. Ishan Patro	Co-ordinator & HeadJivagi UniversityGwalore	"
12.	Dr. G A Ravisanker	Scientist G & HeadCFTRI, Mysore	"
13.	Dr.(Mrs) Rita Banerjee	Scientist E & Member SecretaryDST, New Delhi	"



14. L M Romeo	Tech. University of Loja	South America	”
15. Prof. Ashoke R Thakur	Vice-Chancellor	West Bengal State Uty.	Kolkatha ”
16. Prof. Jamal Ahamed	Director, Professor of Endocrinology,	AMU, Aligarh	”
17. Sam Mathew	Director, Motif Macdonald Engineering Consultant		”
18. Prof. K P Gopinathan	Professor/INSA Senior Scientist,	IITBangalore	”
19. Prof. G A Ghafur	NCERT,	New Delhi.	”

11. Ph.Ds Awarded

SI.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1.	Extracellular α -glucosidase production by marine aspergillus sydowii BTMFS 55	Madhu K M	Dr. M Chandrasekaran
2.	Studies on isolation and molecular characterization of plasmids from vibrios	Manjusha S	Dr. Sarita G Bhat
3.	Muscarinic M1 and M3 Receptors, IP3 and camp functional regulation in streptozotocin induced diabetic rats: Insulin and somatotrophin induced rejuvenation as a function of age	Savitha Balakrishnan	Dr. C S Paulose
4.	Extra cellular Marine Bacterial Lipase	Lailaja V P	Dr. M Chandrasekaran
5.	Dopamine D ₁ and D ₂ Receptor Gene Expression and cGMP, IP3 and Ca ²⁺ Regulation in the Brain Regions of Hypoxic Neonatal Rats: Role of Glucose, Oxygen and Epinephrine Supplementation	Binoy Joseph	Dr. C S Paulose
6.	Pigment production by marine <i>Serratia</i> sp. BTWJ8	Jissa G Krishna	Dr. M Chandrasekaran

12. Publications**a. Papers****SI. No. Name of Paper**

- G. Gireesh, Reas. S. Khan, Jobin Mathew, **C. S. Paulose**. Decreased M1 receptor gene expression in the cerebral cortex of streptozotocin induced diabetic rats and *Aegle marmelose* leaf extract's therapeutic function. *Journal of Ethnopharmacology*. DOI: 10.1016/j.jep.2007.11.036. (2008). **C.I-1 I. F. 2.049**
- Balarama Kaimal, Akash. K. George, **C. S. Paulose**. Aminobutyric acid receptor functional decrease in the hypothalamus during Pancreatic regeneration in rats. *Pancreas*. (2008). **I F. 2.121**



- 3 Finla Chathu, Ameer Krishnakumar, **C. S. Paulose**. Acetylcholine Esterase Activity and Behavioural Response in Hypoxia Induced Neonatal Rats: Effect of Glucose, Oxygen and Epinephrine Supplementation. *Brain and Cognition*. (2008). **I.F- 2.81**
- 4 **4. Akash k George, S. Balarama Kaimal, C S Paulose**. Enhanced 5HT 2A receptor status in the hypothalamus and corpus striatum of ethanol treated rats. *Cellular and Molecular Biology*. (2008) DOI 10.1007/s10571-008-9281- 2 **C.I-1 I.F- 1.7**
- 5 **5. Akash KG, Anju TR, Peeyush KT, Paulose CS**. Enhanced dopamine D(2) receptor function in hypothalamus and corpus striatum: their role in liver, plasma and in vitro hepatocyte ALDH regulation in ethanol treated rats. *J Biomed Sci*, Jun 7. (2008). **I.F- 1.995**
- 6 **A. Joseph, S. Antony, C. S. Paulose**. Increased glutamate receptor gene expression in the cerebral cortex of insulin induced hypoglycemic and streptozotocin-induced diabetic rats. *Neuroscience* (2008) 156: 298-304. **I.F- 3.35**
- 7 **C. S. Paulose** and Savitha B. Adrenergic, dopaminergic and serotonergic gene expression 3 in low dose, long time insulin and somatotropin treatment to ageing rats: rejuvenation of brain function (2008) *Biogerontology* DOI: 10.1007/s10522-008-9183-1 **I. F. 3.547**
- 8 **R Remya Robinson, Ameer Krishnakumar and C. S. Paulose**. Enhanced Dopamine D1 and D2 Receptor Gene Expression in the Hippocampus of Hypoglycaemic and Diabetic Rats. *Cellular and Molecular Neurobiology*, DOI: 10.1007/s10571-008-9328-4 (2008) **I.F 2.219**.
- 9 **Savitha Balakrishnan, Jobin Mathew, Sherin Antony, Paulose CS**. Muscarinic M1, M3 receptors function in the brainstem of streptozotocin induced diabetic rats: their role in insulin secretion from the pancreatic islets as a function of age. *European Journal of Pharmacology*, 10.1016/j.ejphar.2009.01.047 (2009) **I.F 2.376**
- 10 **Akash K. George, Anju T. R, Paulose C. S**. Enhanced 5-HT_{2A} receptors in brain stem and ALDH activity in brain stem and liver: 5-HT_{2A} regulation on ALDH in primary hepatocytes cultures in vitro. *Neurochemical Research*. NERE1163R1. (2009).
- 11 **Gireesh G. Peeyush Kumar T, Jobin Mathew and C. S. Paulose** Enhanced muscarinic M1 receptor gene expression in the corpus striatum of Streptozotocin induced diabetic rats. *Journal of biomedical sciences* 2009 doi: 10.1186/1423-0127-16-38.
- 12 **Gireesh G, Santhosh K Thomas, Binoy Joseph and C S Paulose** Antihyperglycemic and insulin secretory activity of *Costus pictus* leaf extract in streptozotocin induced diabetic rats and invitro pancreatic islet culture *journal of ethnopharmacology* 2009 doi 10.1016/j.jep.2009.03:026
- 13 **C. S. Paulose** and Anju T. R. Neurotransmitter receptor's functional regulation in disease management: a molecular approach. *Science India* (2009) 13(4): 30-35..
- 14 **J. P Rappai, V. Raman, P. A. Unnikrishnan, S. Prathapan, S. K. Thomas, C.S. Paulose**. Preliminary investigations on the synthesis and antitumour activity of 3(2H)- furanones. *Bioorganic and medicinal chemistry letters*. 19: 764-765. (2009)
- 15 **Ameer Krishnakumar, Pretty Mary Abraham, Jes Paul and C. S. Paulose**. Down-regulation of cerebellar 5-HT_{2C} receptors in pilocarpine-induced epilepsy in rats: Therapeutic role of *Bacopa monnieri* extract. *Journal of Neurological Sciences*. JNS-D-08-00669. (2009). **I.F 2.195**
- 16 **Padma Nambisan and Sarita G Bhat** (2008) Women in Science meeting report, *Current Science*, Vol.95, No.1



- 17 Manjusha S and Sarita G Bhat (2008) Characterization of plasmids from Multiple antibiotic resistant Vibrios isolated from Molliscans and crustaccans of Kerala. Proc. International Conf.Biodiv.Conserv & mgt. 2008: 674-678 (ISBN 978-81-907269-7-9)
- 18 Raghul Subin S, Smitha S and Sarita G Bhat (2008) Exploration of Marine benthic vibrios as a promising source of bioactive molecules. In proceedings of the National Seminar on 'Bioactive compounds from the marine organisms' Edited and published by Dept. of Marine Biology, Microbiology and Biochemistry, CUSAT.
- 19 Hamza Zeena P., Anna Dilfi K F., Kurian Thomas and Sarita G Bhat (2009) Biodegradability studies on LDPE – search blends using amylase producing vibios. Intl.J.Polymeric Materials. Vol.58:1-10.
- 20 Anna Delfi K F, Hamza Seena P, Kurian Thomas and Sarita G Bhat (2009) Effect of amylase producing vibrios from the benthic environments on the biodegradation of low density polyethylene destrin blends Polymer plastics technology and engineering 48:602-606
- 21 Raghul Subin S, Smitha S and Sarita G Bhat (2008) Exploration of marine benthic vibios as a promising source of bioactive molecules. Paper presented at National Seminar on 'Bioactive compounds from the marine organisms' from 14-15 th March 2008, organized by the Dept. of Marine Biology, Microbiology and Biochemistry, CUSAT
- 22 Anna Delfi K F, Hamza Seena P, Kurian Thomas and Sarita G Bhat (Sep.2008) Effect of amylase producing vibrios from the benthic environments on the biodegradation of low density polyethylene destrin blends. In proceedings of international conference on advances in Polymer Technology, held from September 25-27, 2008, Cochin organized jointly by CUSAT and IRI
- 23 Sarita G Bhat (Sept.2008) Safer alternatives for cleaner environments. In proceedings of the UGC-sponsored national seminar on environmental biotechnology: Challenges and opportunities. Held on 17th Sept, 2008 at SN College, Nattika, Thirssur
- 24 Linda Louis, Jeena Augustine, and Sarita G Bhat (2009) Isolation, purification and partial characterization of vibriophages from mangrove ecosystem. Poster presented at the International Symposium on Marine Ecosystem: Challenges and opportunities (MECOS,09) from 9th to 12th February, 2009
- 25 Helvin Vincent, Smitha S, and Sarita G Bhat (2009) Isolation of a novel protease gene using the Metagenomic approach. Postel presented at the International symposium on Marine Ecosystem: Challenges and Opportunities (MECOS, 09) from 9th to 12th February, 2009
- 26 S Raghul Subin, Siju Varghese, M K Sateesh and Sarita G Bhat (2009) Characterization and diversity of polyhydroxyalkanuoates producing vibrios inhabiting the marine benthic environments. Poster presented at the International Symposium on Marine Ecosystem: Challenges and opportunities (MECOS,09) from 9th to 12th February, 2009
- 27 Extracellular beta glucosidase produced by Marine aspergillus sydowii BTMFS 55 under solid state fermentation using statistical experimental design: Biotechnology and Bioprocess Engineering 2008

B. Books

Nil

**13. Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.**

Name of Participant	Name of Seminar / Conference/ Workshop	Role
Jobin Mathew, Peeyush Kumar T, C.S. Paulose	GABA receptor functional regulation in the cerebral cortex of pilocarpine induced epileptic rats: neuroprotective role of Bacopa monnieri. 21st Kerala science congress, Kollam (January 2009)	Meeting attended
Anu Joseph, Sherin Antony, C. S. Paulose	Enhanced NMDA Receptors Gene Expression and Neurodegeneration in the Cerebellum of Insulin Induced Hypoglycaemic & Streptozotocin Induced Diabetic Old Rats. 21st Kerala science Congress, Kollam. (January 2009)	Meeting attended
Pretty Mary Abraham, Ameek Krishnakumar and C. S. Paulose,	Effect of pyridoxine and Aegle marmelose leaf extract and Serotonergic receptor functional Regulation in Streptozotocin induced Diabetic Rats. 77th Annual Meeting of the Society of Biological Chemists (India) IIT Madras, Chennai. (December 2008)	Meeting attended
Sherin Antony, Anu Joseph, Peeyush Kumar T, C. S. Paulose.	Enhanced Muscarinic M3 receptor gene expression in the cerebral cortex of Diabetic and Insulin Induced Hypoglycemic rats. 77th Annual Meeting of the Society of Biological Chemists (India) IIT Madras, Chennai. (December 2008)	Meeting attended
Pretty Mary Abraham, Korah P Kuruvilla, CS Paulose.	Altered 5ht2a Receptor Gene Expression In The Brain Stem Of Diabetic Rats: Supplementation Of Pyridoxine And Aegle Marmelose Leaf Extract. International Conference on Advances in Neuroscience & XXVI Annual Meeting of Indian Academy of Neurosciences. Department of Biotechnology. Cochin University of Science and Technology. (December 2008)	Conference attended
Peeyush Kumar T, Gireesh G and C. S. Paulose.	Altered Muscarinic M3 receptor gene expression in the cerebral cortex and Cerebellum of Diabetic rats: Supplementation of Vitamin D3. International Conference on Advances in Neuroscience & XXVI Annual Meeting of Indian Academy of Neurosciences. Department of Biotechnology. Cochin University of Science and Technology. (December 2008)	Meeting attended



Sherin Antony, Nandhu M.S, C. S. Paulose	Alterations in the muscarinic M1 and M3 receptor gene expression in the corpus striatum of diabetic and insulin induced hypoglycaemic rats. International Conference on Advances in Neuroscience & XXVI Annual Meeting of Indian Academy of Neurosciences. Department of Biotechnology. Cochin University of Science and Technology. (December 2008)	Conference attended
Akash K. G, Nandhu M. S., Paulose C. S	Increased binding of [3H] YM-09151-2 to DA D2 and decreased ALDH function in the cerebellum of ethanol treated rats. International Conference on Advances in Neuroscience & XXVI Annual Meeting of Indian Academy of Neurosciences. Department of Biotechnology. Cochin University of Science and Technology. (December 2008)	Conference Organized & Conducted
Anju T R, C S Paulose.	GABA A receptor functional regulation in the cerebral cortex of hypoxia induced neonatal rats: Effect of glucose and oxygen treatment. International Conference on Advances in Neuroscience & XXVI Annual Meeting of Indian Academy of Neurosciences. Department of Biotechnology. Cochin University of Science and Technology. (December 2008)	Conference Organized & Conducted
Jobin Mathew, Binoy Joseph, C.S. Paulose	Decreased GABA receptor gene expression in the cerebral cortex of the epileptic rats therapeutic application of Bacopa monnieri. International Conference on Advances in Neuroscience & XXVI Annual Meeting of Indian Academy of Neurosciences. Department of Biotechnology. Cochin University of Science and Technology. (December 2008)	Conference organized
Jes Paul, Jobin Mathew, C.S. Paulose	Decreased GABA ₃ receptor subunit gene expression in the cerebral cortex of the epileptic rats therapeutic application of Bacopa monnieri. International Conference on Advances in Neuroscience & XXVI Annual Meeting of Indian Academy of Neurosciences. Department of Biotechnology. Cochin University of Science and Technology. (December 2008)	Conference organized
C. S. Paulose and PS John	Effect of neurotransmitters combination and bone marrow cells supplementation on spinal cord regeneration and functional recovery. International Conference on Advances in Neuroscience & XXVI Annual Meeting of	Conference organized



C. S. Paulose, Anu Joseph	Indian Academy of Neurosciences. Department of Biotechnology. Cochin University of Science and Technology. (December 2008) Enhanced NMDA and metabotropic GluR5 glutamate receptor subunits gene expression in the corpus striatum of insulin induced hypoglycaemic and streptozotocin induced diabetic rats. International Symposium on Molecular aspects of brain aging and neurological disorders and annual meeting of society for neurochemistry, India held at Guru Nanak Dev University, Amritsar (November 2008)	Meeting organized
Jes Paul, Jobin Mathew, C.S. Paulose	Increased malate dehydrogenase activity and insulin in epileptic rats: Effect of Bacopa monnieri. International symposium on molecular aspect of brain aging and neurological disorders & annual meeting of society for neurochemistry (India). Department of Biotechnology Guru Nanak Dev University, Amritsar. (November 2008)	Meeting organized
C. S. Paulose	Application of Analytical Science in Biotechnology. Indian Analytical Science Congress 2008 organised by Indian Society of Analytical Scientists Munnar, (November 2008)	Meeting organized
Jobin Mathew, Jes Paul, C.S. Paulose	Increased epileptic functional abnormality and therapeutic application of Bacopa monnieri in rats. Annual meeting of society for Biotechnologists, India National conference on new frontiers and current trends in Biotechnology & platinum jubilee celebrations of Department of Biochemistry. Department of Biochemistry University of Madras. (October 2008).	Conference attended
Peeyush Kumar T, Gireesh G and C. S. Paulose	Altered Muscarinic M3 receptor gene expression in the cerebral cortex and Cerebellum of Diabetic rats: Supplementation of Vitamin D3. Annual meeting of society for Biotechnologists, India National conference on new frontiers and current trends in Biotechnology & platinum jubilee celebrations of Department of Biochemistry. Department of Biochemistry University of Madras. (October 2008).	Conference attended
Paulose C. S., Binoy Joseph	"Dopamine D ₂ receptor Functional Regulation in the cerebral cortex of Hypoxia induced neonatal rats: Effect of Glucose, Oxygen and Epinephrine treatment". 8 th Biennial Meeting	Meeting Attended



Sherin Antony, Anu Joseph, and C. S. Paulose	of the Asia Pacific Society of Neurochemistry, Shanghai, China (June 2008) “Decreased [3H] QNB Binding to Muscarinic M1 Receptors in the cerebral cortex of Diabetic and insulin induced hypoglycaemic rats”. 8 th Biennial Meeting of the Asia Pacific Society of Neurochemistry, Shanghai, China (June 2008).	Meeting Attended
Dr. Sarita G Bhat	Attended and presented an invited paper in the UGC sponsored National Seminar on environmental biotechnology: Challenges and opportunities. Held on 17 th Sept.2008 at SN College, Nattika	Meeting attended & paper presented
Dr. Sarita G Bhat	Attended the International Symposium on Marine Ecosystem: Challenges and opportunities (MECOS,09) from 9th to 12th February, 2009 at Kochi, organized by CMFRI and MBAI	Conference attended
Dr. Sarita G Bhat	Attended the UGC sponsored Refresher course in Marine Biology organized by Dept. of Marine Biology, Microbiology and Biochemistry, School of Marine Sciences, CUSAT from 2-23 rd March, 2009	Seminar Attended &Paper presented
Dr. Sarita G Bhat	As Jt. Co-ordinator, conducted a one day Seminar on ‘WiS-Career in Science’ sponsored by the Indian Academy of Science, Panel on Women in Science, Bangalore April, 5, 2008	Seminar conducted and attended
Dr. Padma Nambisan	WIS – A Career in Science	Seminar conducted and attended
Dr. M Chandrasekaran	Bio prospecting of marine biodiversity. International conference on biodiversity conservation and management held at CMFRI, Cochin organized by Rajiv Gandhi Chair in Contemporary Studies, CUSAT (Invited)	Conference attended
Dr. M Chandrasekaran, Soorej M Bhasheer, and Beena P S	Industrial enzymes from Marine Fungi. International Conference & Workshop on Recent Advances in Bioengineering held at SRM University	Conference attended
Dr. M Chandrasekaran	‘Fishery waste and slaughter house waste management’ National seminar on decentralized waste management held at SMS, CUSAT organized by CERDAT, CUSAT in	Seminar attended



Jissa G Krishna, Soorej M Basheer, Beena P S and Dr. M Chandrasekaran	collaboration with Centre for Environment and Waste Management, Cochin, April, 7-8, 2008 Marine bacteria as source of pigment for application as dye in textile industry. International Conference on biodiversity conservation and management. Theme: Ecosystems and sustainable development. Biocam 2008	Conference attended
Chandrasekaran M, Soorej M Basheer and Beena P S	"Marine Fungal Enzymes for Environmental Applications". National Conference on Aquatic Microbiology: Status, Challenges and Opportunities held at Department of Aquatic Biology and Fisheries, University of Kerala, Thiruvananthapuram, April 24-25	Conference attended

14. Awards/ Honours/ Fellowships etc. received

Name of Recipient	Name of Fellowship/ Honour /Award	Awarding Agency
Dr. M Chandrasekaran	Member Task Force on Aquaculture and Marine Biotechnology	DST Govt.of India 2006 - 2009
Dr. M Chandrasekaran	Member, Sub Committee of Earth Science Research Committee on Disaster Preparedness	HRD Group, New Delhi (May 2006 to March 2009)
Dr. M Chandrasekaran	Subject Expert for reviewing research publications for the journals of Food Science Technology, Journal of Marine Biological association of India (Germany), Journal Biochemical Engineering (UK), Applied Biochemistry and Biotechnology (Europe)	Zoological Society of India 2008
Dr. M Chandrasekaran	Subject expert for reviewing research projects	Govt. of India

15. Sponsored Research Projects

Sl.No.	Title	Sponsoring Agency	Amount (in lakhs)	Investigator(s)
1.	Neurotransmitter Receptor Functional Regulation in Epilepsy: Memory Modulation using Medicinal Plant, <i>Bacopa monnierr</i>	KSCSTE 2006-09	Rs.20.70 lakhs	Dr C S Paulose
2.	Hypoxia and Brain Disorders: Adrenergic and Serotonergic Gene Expression: Dopamine, Glutamate, GABA and Acetylcholine functional inter-relationship	DST, GOI 2006-2009	Rs.44.50 lakhs	Dr C S Paulose



3	Production purification, genetic characterization and application studies of tannase enzyme from marine fungus <i>Aspergillus awamori</i> ,	DST 2007-08	Rs.9.84 lakhs	Mrs. Beene P. S under the Women Scientist Scheme
4	Isolation, characterization and application of protease enzyme inhibitors from marine microorganisms.	Department of Biotechnology, New Delhi 3 yrs (2007-2010)	Rs.34.00 Lakhs	Dr. Elyas K K(PI)
5	Morphometric and Molecular characteristics of deep sea fishes and screening and isolation of potentially bioactive molecules From deep sea organisms”, “Feb. 2008 - Feb. 2013.	Ministry of Earth Sciences (CMLRE-MOES) Govt. of India	Rs 1.3 crores	Dr.M Chandrasekaran
6	Role of benthic Vibrios in the mineralization process in the marine environments	DOD2006-07	Rs.16.41 Lakhs	Dr. Sarita G Bhat(PI)
7.	Green wealth for rural women through fiber extraction from agri-waste (Sanctioned in Feb.2007) DBT, GOI	Feb.2007) DBT, GOI	Rs.18.46 lakhs	Dr. Padma Nambisan
8	Advanced Research in Neuro-transmitters Functional Regulation to Diabetes and Pancreatic Regeneration : Insulin Secretion and Function at Molecular Level	2007-2012 DST, GOI	2.50 Crores	Dr. C S Paulose
9	Adrenergic and Muscarinic receptors gene expression in the Streptozotocin induced diabetic rats: Role of stress on insulin secretion as a function of age.	2007-2010 ICMR, GOI	36.13 lakhs	Dr. C S Paulose
10	Stem cell therapy in Parkinson's disease: Dopaminergic receptor subtypes functional regulation by norepinephrine, serotonin, acetylcholine and GABA	2008-2011 ICMR	30 lakhs	Dr. C S Paulose
11	DST-FIST II Phase	2009-2013	85 Lakhs	Head of the Dept. Dept of Biotechnology

16. Research Programmes and Activities:

SI.No.	Problem / Topic	Investigator (s)
1	Microbial Technology	Prof (Dr) M. Chandrasekaran
2	Molecular and Cellular Neurobiology	Dr. C. S. Paulose



- | | | |
|---|-----------------------|---------------------|
| 3 | Bioprocess Technology | Dr. Sarita. G. Bhat |
| 4 | Plant Biotechnology | Dr. Padma Nambisan |
| 5 | Medical Biotechnology | |
| 6 | Neuroendocrinology | |

17. Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department

Sl. No.	Title	Duration	Coordinator	Funding Agency
1	NBNI Meeting	Dec 9-10, 2008	Dr. C. S. Paulose	NBRC
2	IAN-2008	Dec 12-14, 2008	"	IAN, DST, DBT, ICMR, BRNS, CSIR, KSCSTE
3	DST workshop on Live Cell Imaging	Dec 15-17, 2008	"	DST
4	World Brain Awareness Week, Cochin, 2009	March 16-22, 2009	"	European Dana Alliance, London, IDAB CUSAT
5	Task Force Meeting on Aquaculture and Marine Biotechnology	August 19-20, 2008	Dr. M Chandrasekaran	DBT

18. Consultancy Work

Sl. No.	Name of Consultancy	Name of Consultant	Sponsoring Agency
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DEPARTMENT OF CHEMICAL OCEANOGRAPHY

The department of Chemical Oceanography has credentials of facilities and rich expertise in teaching / research on various chemical aspects of the aquatic system. It has pioneered investigations in many areas of vital significance and has contributed valuable inputs into the national database. Chemical Oceanography (Marine Chemistry) is the fulcrum for interaction between the various disciplines of Marine Sciences.

Two members of the faculty carried out post - doctoral research in the U.K. through the award of Commonwealth Academic Staff Fellowships.

Sophisticated instrumental facilities available in the department include UV-VIS Spectrometer, AAS, GC, CHN, Polographic Analyzer, Laminar Flow Chambers, etc.

The department is actively engaged in consultancy and extension activities that include Analytical Testing / Training, Water Quality Analysis etc.

1. Programmes of Study / Research

M.Sc. (Hydrochemistry)

Research

2. Faculty Members

Sl.No.	Name	Designation	Qualification	Specialization
1.	Dr. N. Chandra-mohanakumar	Professor & Head of the Dept. Chemistry	M.Sc., Ph.D	Chemical Oceanography, Analytical Techniques, Theoretical & Physical
2.	Dr. Jacob Chacko	Professor	M.Sc., Ph.D	Chemical Oceanography, Analytical Techniques, Theoretical & Physical Chemistry
3.	Dr. S. Muraleedharan Nair	Reader	M.Sc., Ph.D	Chemical Oceanography, Analytical Techniques, Organic Chemistry
4.	Dr. C.H. Sujatha	Sr. Lecturer	M.Sc., Ph.D	Chemical Oceanography, Analytical Techniques, Inorganic Chemistry

5. Visiting Faculty (If any)

Sl.No.	Name	Designation	Qualification	Specialization
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6. Research Staff

Sl.No.	Name	Designation	Qualification	Specialization
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7. Research Scholars

Sl.No.	Name	Funding Agency	Guide	Area of Work
1.	Deepulal P.M.		Dr. C.H. Sujatha	
2.	Anuradha. V	UJRF	Dr. S. Muraleedharan Nair	
3.	Gireesh Kumar. T.R.	UJRF	Dr. N. Chandramohanakumar	
4.	Ratheesh Kumar. C.S.		Dr. N. Chandramohanakumar	
5.	Shaiju. P.	RFMS	Dr. S. Muraleedharan Nair	
6.	Prashob Peter K.J.		Dr. S. Muraleedharan Nair	
7.	Renjitha Raveendran		Dr. C.H. Sujatha	
8.	Manju M.N.		Dr. N. Chandramohanakumar	
9.	Geetha Andrews		Dr. Jacob Chacko	
10.	Radhika. S.		Dr. C.H. Sujatha	
11.	Bindu. K.R.		Dr. N. Chandramohanakumar	
12.	Josekutty J. Ozhukayil	UGC	Dr. N. Chandramohanakumar	
13.	Aneesh Kumar. N.		Dr. C.H. Sujatha	
14.	Pratheesh. V.B.		Dr. C.H. Sujatha	
15.	Sumangala K.N.		Dr. C.H. Sujatha	
16.	Nebula Murukesh		Dr. N. Chandramohanakumar	
17.	Abhilash P. Kailas		Dr. S. Muraleedharan Nair	
18.	Manju Mary Joseph*		Dr. N. Chandramohanakumar	

*Under adjudication

6. Administrative Personnel

Sl.No.	Designation	No. of Posts
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1.	Selection Grade Assistant	2
2.	Lab Assistant	1
3.	Peon	1

7. Technical Personnel

Sl.No.	Designation	No. of Posts
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1.	Technical Assistant (Grade I)	1 (Vacancy)
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**8. Student Enrollment**

SI.No.	Programme of Study	Men	Women	Total
1.	M.Sc. (Hydrochemistry)8	15	23	
2.	Ph.D. 9	9	18	

9. Research Facilities

a. Laboratories (List out Major equipments available)

UV - VIS Spectrometer, AAS, GC, CHN, Polographic Analyzer, Laminar Flow Chambers etc.

b. Library

No. of books and Journals as on 31st March of the Previous Year	Additions during the current year

c. Others

10. Distinguished Visitors Nil

SI. No.	Name	Affiliation	Remarks

11. Ph.Ds Awarded

SI.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1.	Unraveling a benchmark for Sulphur Akin in the Cochin Estuarine System	Nify Benny	Dr. C.H. Sujatha
2.	Geochemistry of transition, Non-Transition and Rare - Earth Elements in the Surficial Sediments of Continental Shelf of Kerala and an Annex to the Cochin Estuarine System	Laluraj C.M.	Dr. S. Muraleedharan Nair
3.	Metal Partition Dynamics in a Tropical Riverine system	Sheela V.S.	Dr. N. Chandramohana kumar
4.	"Nutrient Mobility in Chalakudy River, typified with Riparian Buffer Zone and its adjoining Estuary: Spatio-temporal Manifestations"	Padma P.	Dr. S. Muraleedharan Nair
5.	Seasonal Ramification in the Biochemical composition of Organic Matter in Chalakkudi River - Estuary	Suryakumari. S.	Dr. S. Muraleedharan Nair



6.	Geochemistry of rare earth elements and trace metals along the western continental shelf of India.	Siby Varghese	Dr. N. Chandramohana kumar
7.	Hydrogeochemical evaluation of inorganics and bio-organics environments.	Resmi. T.R.	Dr. Jacob Chacko
8.	Characterization & distribution of amino acids in the mangrove sediments of Kochi.	Zeena P. Ravi	Dr. N. Chandramohana kumar
9.	Biogeoorganics and trace metal speciation in mangroves	Sarika P.R.	Dr. N. Chandramohana kumar
10.	Sterols in mangrove sediments of the Cochin Estuary.	Narayanan T.	Dr. N. Chandramohana kumar
11.	Chemodynamics and Exohydrology of a tropical Estuary	Renjith K. R.	Dr. N. Chandramohana kumar
12.	Biogeochemistry and Phosphorus Dynamics of the surface sediments of the Western Continental Shelf in India	Josia Jacob	Dr. N. Chandramohana kumar

12. Publications

a. Papers

Sl. No. Name of Paper

1. Distribution and Enrichment of Trace Metal levels in the sediments of Nagapattanam in the subsequent years of 2004 Tsunami Disaster. (Nify Benny and Sujatha C.H.)
2. A comparative study of the labile organic matter in the Continental shelf region of South East and South West part of Indian Peninsula. (Elizabeth Serin A.L. and Sujatha C.H.)
3. Distribution of total organic matter along southwest coast of India. (Deepulal P.M. and Sujatha C.H.)
4. Trace Metal Speciation in Sediments after Remedial approach (Nify Benny and Sujatha C.H.)
5. Impact of December 2004 Tsunami on Indian Coasts and Mitigation Measures, 2009. (Nify Benny and Sujatha C.H.)
6. Nutrient dynamics in the two lakes of Kerala, India. (Renjitha Raveendran, Fanimol C.L., Samantha K.N., Nify Benny and Sujatha C.H.)
7. "Isolation, stabilization and characterization of Xanthophyll from Marigold flower - Targets Ereta - L" Communicated in the J. of Modern Applied Sciences (Pratheesh V.B. and Sujatha C.H.)
8. Review Article Published in the Book "Natural and Anthropogenic Disasters" by Capital Publishing Company.



9. Anu Gopinath and Nair. S.M. 2008. Allometric variability of heavy metals in corals of Lakshadweep islands. *Toxicol.. Environ.. Chem..* 90:1135-1144.
Jacob. J., Chandramohanakumar N., Jayaraj K.A., Raveendran T.V., Balachandran K.K., Joseph T., Nair. M., Achuthankutty C.T., Nair K.K.C., George R., Ravi. Z.P., 2008 biogeochemistry of the surficial sediments of the western and eastern continental shelves of India. *Journal of Coastal Research*, 24, 1240-1248.
10. Geetha. R., Chandramohanakumar. N., and Mathews L. 2008 Geochemical Reactivity of Surficial and Core Sediment of a Tropical Mangrove ecosystem, *International Journal of Environmental Research*, Vol. 2, No. 4, pp. 329-342
11. Gopinath, Anu, Chandramohanakumar. N., Padmalal. D., Nair. S., Muraleedharan, 2008. Distributed characteristics in fractionation of phosphorus in a coral reef sedimentary environment, *Chemical Speciation and Bioavailability*, Volume 20, Number 3, pp. 149-159
12. Joseph, Manju mary, Kumar C.S., Ratheesh Kumar, T.R. Gireesh, Renjith K.R., Chandramohanakumar. N. 2008. Biogeochemistry of surficial sediments in the intertidal systems of a tropical environment. *Chemistry and Ecology*, Volume 24, Number 4, 247-258 (12)
13. Sarika. P.R., Chandramohanakumar. N., 2008. Geochemistry of heavy metals in the surficial sediments of mangroves of the south coast of India *Chemistry and Ecology*, Volume 24, Number 6, 437-447.
14. Jacob. J., Jayaraj K.A., Rehman H.H., Chandramohanakumar. N., Balachandran K.K., Raveendran. T.V., Joseph T., Nair. M., Achuthankutty. C.T., (2009) Biogeochemistry of the surficial sediments of the western and eastern continental shelves of India *Chemistry and Ecology*: 25(2), 2009, 135-149.
15. Renjith K.R., Chandramohanakumar. N., 2009. Distribution of Heavy Metals in the surficial sediments of a complex micro-tidal Estuarine System in southwest India, *Research Journal of Chemistry and Environment*, 13, 34-44 Bottom of Form.

13. Awards / Honours / Fellowships etc. received

Name of Recipient	Name of Fellowship / Honour / Award	Awarding Agency
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16. Sponsored Research Projects

Sl.No.	Title	Sponsoring Agency	Amount	Investigator(s)
1.	Distribution Characteristics of DMS and DMSP in the Cochin Estuarine System	MoES	Rs. 21,18,000/-	Dr. C.H. Sujatha, Sr. Lecturer
2.	Hydro geochemical quality assessment of ground waters in selected districts of Kerala.	KSCSTE	Rs. 9,10,800/-	Dr. C.H. Sujatha, Sr. Lecturer
3.	Biogeochemistry of the mineral resources in the lime shell deposits at the coastal belt of Kannur District, Kerala	UGC	Rs. 57,500/-	Dr. C.H. Sujatha, Sr. Lecturer



17. Research Programmes and Activities:

Sl. No.	Problem / Topic	Investigator(s)
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18. Seminar / Conference / Workshop / Refresher Courses conducted by the Department.

Sl. No.	Title	Duration	Coordinator	Funding Agency
1.	Babu.V., Anuradha V. and Nair. S.M. 2008. Seasonal and temporal variations of cyclodiene pesticides in the sediments of Kuttanad backwaters. Proc. 20th Kerala Sci. Cong. India. 07-13/543-545.			
2.	Gireesh Kumar T.R., Ratheesh Kumar. C.S., Deepulal P.M. and Chandramohanakumar N., 2009. Monitoring of water and sediment quality around Cochin Harbor area with a special emphasis on metal pollution. Proceedings of OSICON' 09 National Conference of Ocean society of India held at Vishakapattanam March 19-21, 2009.			
3.	Renjith K.R., Chandramohanakumar. N. 2009 Geochemical characteristic of a tropical estuarine system in the south west coast of India. Proceedings of OSICON' 09 National Conference of Ocean society of India held at Vishakapattanam March 19-21, 2009.			
4.	Manju Mary Joseph, Ratheesh Kumar C.S., Gireesh Kumar T.R., Chandramohanakumar N., 2009. Biochemical evaluation of Mangalavanam, a tropical mangrove forest in the south west coast of India. Proceedings of OSICON' 09 National Conference of Ocean society of India held at Vishakapattanam March 19-21, 2009.			
5.	Ratheesh Kumar C.S., Manju Mary Joseph, Gireesh Kumar T.R., Renjith K.R., Chandramohanakumar N., 2009. Heavy metals in the surface sediments of three tropical mangrove systems in south west India. Proceedings of OSICON' 09 National Conference of Ocean society of India held at Vishakapattanam March 19-21, 2009.			
6.	Deepulal, Gireesh Kumar T.R. and Sujatha C.H., 2009. Distribution of total Organic matter along the south west coast of India. Proceedings of OSICON' 09 National Conference of Ocean society of India held at Vishakapattanam March 19-21, 2009.			
7.	Shaiju P., and S.M. Nair., 2009. Seasonal and spatial hydrography of eutropic tropical estuary. Proceedings of OSICON' 09 National Conference of Ocean society of India held at Vishakapattanam March 19-21, 2009.			

17. Consultancy Work

Sl. No.	Name of Consultancy	Name of Consultant	Sponsoring Agency
1.	ASETT (Analytical Services and Training Unit)	Cochin Port Trust	Cochin Port Trust



DEPARTMENT OF COMPUTER APPLICATIONS

Computer Applications is one of the thrust areas in Science and Technology. In appreciation to its growing importance in business and industrial scenario, the University has established the Department of Computer Applications to facilitate research and human resource development in the subject. The department offers Master's Programme in Computer Applications (M.C.A.) and research programme leading to Ph.D.

The department in its present form was founded on 01/01/1995 as one of the constituent departments of School of Computer Science Studies, under the Faculty of Technology. From 11/04/1992, it was a division under the School of Mathematical Sciences. The University could implement the MCA Programme with substantial financial assistance, jointly, from the UGC and DOE, Government of India. Presently, the department is housed in the first floor of the School of Engineering building.

1. Programmes of Study/Research

- (i) MCA (Regular Batch & Cost-sharing Batch)
- (ii) Ph.D.

2. Faculty Members

Sl.No.	Name of the staff	Designation	Qualification	Specialization
1.	Dr. S. Babu Sundar	Professor (under suspension)	M.Sc., Ph.D. M.Tech	Computer applications Fuzzy Logic Artificial Intelligence
2.	Mr. A. Sreekumar	Lecturer	M.Sc., M.Tech.	Compiler Design Number Theory Cryptography
3.	Dr. K.V. Pramod	Lecturer	M.Sc., Ph.D.	Simulation & Modelling Morphology Cryptography
4.	Dr. B. Kannan	Reader	M.Sc., M.Phil, M.Tech., Ph.D.	Artificial Intelligence Database Design
5.	Ms. Malathi S.	Lecturer	M.C.A, M.Tech.	Software Quality Assurance Project Management Testing Software Engineering
6.	Mr. Ajmal V.S. (on leave)	Lecturer	M.C.A	Database Design Visual Programming Object Oriented Design

3. Visiting Faculty (Guest Faculty and Lecturer on Contract Basis)

Sl.No.	Name	Qualification	Specilisation
1.	Rafidha Rahiman K.A.	MCA	Systems Software
2.	Annu James	MCA	Computer Networks, Computer Graphics



3.	Simily Joseph	MCA	Data Mining
4.	Aneeta Francis	MCA	Operating Systems
5.	Sruthi Syamalan	M.Sc. Statistics	Statistics
6.	Sudheep Elayidam	M.Tech.	Java

4. Research Staff : NIL

5. Research Scholars

Sl.No	Name	FundingAgency	Guide	Area of work
1.	A.Sreekumar	Part-time	Dr. S. Babu Sundar	Secret Sharing Schemes using Visual Cryptography
2.	Aysha V	"	"	Image processing and pattern recognition and data compression
3.	Sindhu M.S.	"	"	Artificial Intelligence expert systems
4.	Aneurin Salim	"	"	Computer Applications
5.	Mary Jelthruth	"	"	Computer Applications
6.	Cecil Sam Koshy	"	"	A comprehensive study on Routing, Coverage and Security in Wireless Sensor Network
7.	S. Arumughavelan	"	"	Computer Applications
8.	Ramkumar.P.B	"	Dr. K.V. Pramod	Some problems related to Coding Theory in Computer Science
9.	Manju C	"	"	Algorithms
10.	Ajan U.Nair	"	"	Some problems related to Network Protocols
11.	Jomy John	"	"	Image processing
12.	Resmi S.	"	"	Computer Applications
13.	Ramkumar R.	"	"	Graph Theory
14.	Binu Jacob	"	"	Computer Applications
15.	Archana S.N.	"	Dr. Humayoon Kabir S.	Virtual Resource Sharing Centre for the Engineering Colleges to Affiliated Mahatma Gandhi : A University Proposal
16.	Surendran Cherukodan	"	"	Impact of Open Source Software on Libraries : a web based study
17.	Beena A.L.	"	"	Library Science

6. Administrative Personnel

Sl.No.	Designation	No. of Posts
1.	Section Officer	1
2.	Sel. Gr. Assistant	1



3. Senior. Gr. Assistant	2
4. Sr Gr Typist/Steno	1
5. U.D. Typist/Steno	1
6. Junior Librarian	1
7. Peon Spl.Gr.	1
8. Peon	1

7. Technical Personnel

Sl.No.	Designation	No. of Posts
1.	Technical Assistant Gr. III (Computer)	1
2.	Technical Assistant Gr. II (Computer)	1
3.	Technical Assistant Gr.II (Electrical)	1

8. Student Enrollment

Sl.No.	Programme of Study	Men	Women	Total
1.	MCA 2006-09	33	25	58
2.	MCA 2007-10	41	17	58
3.	MCA 2008-11	44	14	58

9. Research Facilities

a. Laboratories (List out Major equipments available)

Department Laboratory:

The department has a well equipped laboratory, which is being constantly updated with the latest computers. At present the laboratory has 60 IBM Desktops based on Pentium IV with Windows XP, 30 AMD Athlon 64 bit PCs running Suse Linux 9.3 (64 bit), 3 Desktops IBM Thinkcentre Intel Pentium D, 2 IBM Thinkpads, one Dell Poweredge 1950 Server, 12 TFL Orchid Intel Core 2 Duo Desktops, IBM X Series 255 Server Quad Processor based on Intel Xeon with Windows 2003 Server, Acer Altos 12000 Xeon Dual Processor running as Linux Server. The department provides 24 hour internet access to its students through a dedicated link to the campus network.

The department has also at its disposal modern state of the art equipment such as multimedia projector imported from Davis Corporation, M/s. Davis Link, FZE, Jebel Ali Freezone, UAE, to aid in the teaching process. Some of the sister departments also look forward to us for their special needs.

b. Library

Department Library:

At present, the department library has more than 4683 books concerning various disciplines in Computer Science and Computer Applications. The faculty members of the department gives special attention to purchase the latest books on a particular subject which help the students to be aware of the latest trends in a particular subject. Also the department library subscribes journals and magazines of international standard. It is proposed to have a new Digital Library.



	No. of books/journals on 31 st March of previous year	Addition during the year
Books	4340	343
International Journals	6	2
Magazines	8	0

c. Others**(i) Placement Cell & its functioning**

The department has a placement cell managed by the students and actively assisted by the faculty members. Majority of the students have become part of major IT companies.

(ii) Seminars & Conferences:

The department has conducted many seminars and conferences concerning the latest trends in industry and technology. A seminar cell functions in the department.

(iii) SAMCA:

The Students Association of MCA conducts the annual festival of MCA students and also actively assists the faculty members in conducting the activities of the department.

10. Distinguished visitors : NIL**11. Ph.Ds Awarded**

Sl.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1.	Real Time Raga Detection and Analysis using Computer	K.N. James	Dr. S. Babu Sundar
2.	Re-Engineering and Re-Defining University Libraries in the Context of Modern Information and Communication Technologies	A.T. Francis	Dr. Humayoon Kabir S.
3.	Internet Utilization and Academic Activities of Faculty Members in the Universities of Kerala: An Analytical Study	Sweety Isaac	Dr. Humayoon Kabir S.

12. Publications**a. Papers**

Name of Author	Title of Publications	Year	Name of Journal
Dr. B. Kannan (Co-authors: Manoj Changat, Sandi Klav•ar)	The Median function on graphs with bounded profiles.	2008	Discrete Applied Mathematics
Dr. B. Kannan (Co-authors : Boštjan Brešar, Manoj Changat, Sandi Klav•ar Matja• Kovše and Ajitha R. Subhamathi)	Computing Median and antimedial sets in median graphs	2008	Algorithmica Published online



Dr. B. Kannan (Co-authors: Manoj Changat, Sandi Klav•ar, Joseph Mathews, Iztok Peterin, G.N. Prasanth and Simon Špacapan)	Antimedial Graphs	2008	Australasian Journal of Combinatorics, Volume 41
Dr. B. Kannan(Co-authors: Manoj Changat, Iztok Peterin, Simon Špacapan, Primo• Šparl, Ajitha R. Subhamathi)	Strongly Distance Balanced Graphs and Graph products	2009	European Journal of Combinatorics
Sri. A. Sreekumar & Dr. S. Babusundar	Uniform Secret Sharing Scheme for (2,n) Threshold Using Visual Cryptography	2008	International Journal of Information Processing

b. Books : NIL

13. Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.

Name of Participant	Name of Seminar / Conference/ Workshop	Role
Sri. A. Sreekumar	International Conference on Hack-in.2009, conducted by IIT Kanpur	Paper Presentation

14. Awards/ Honours/ Fellowships etc. received: NIL

15. Sponsored Research Projects : NIL

16. Research Programmes and Activities : NIL

17. Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department
NIL

18. Consultancy Work : NIL



DEPARTMENT OF COMPUTER SCIENCE

Estd : 1984

The Department of Computer Science came into existence in 1984 with an M.Tech. Course in Computer and Information Sciences, which was the first in the state of Kerala. In 1986, the Department was identified by the Defense Research and Development Organization for conducting a M.Sc. programme in Computer Software, as a feeder course to the DRDO Laboratories. The department served as a seeding agent for the establishment of the Computer Centre, which was inaugurated by the then Prime Minister in 1990. The department was entrusted with the responsibility of conducting the MCA programme in June 1994, which helped to streamline the course and setting it into the right track. The B.Tech. course started in 1996, was given co-ordinating support by the department in the branch of Computer Science & Engineering. A new M.Tech. programme in Software Engineering sponsored by UGC was also started in the academic year 2000-2001

Ph.D. programme in the areas of Artificial Intelligence, Networking, Information Systems Engineering etc. are being pursued.

The department has so far received grants to the tune of Rs. 10 crore from various national agencies. The INFOCUS project with support from the Netherlands Government and collaboration of the Delft University of Technology was piloted by the department.

The campus Intranet, the CUSAT website, the campus intercom system were all initiated and commissioned by the department. The Centre for Information Resource Management was proposed and nurtured by the department.

The department provides technical expertise and support to various Government/ Quasi-government bodies.

1. Programmes of Study/Research

1. M.Tech. Computer and Information Science
2. M.Tech. Software Engineering
3. Ph. D

2. Faculty Members

Sl. No.	Name	Designation	Qualification	Specialisation
1	Dr. K. Poulose Jacob	Professor	M.Tech, Ph.D	Parallel Architecture, Computer Networks, Information Systems Engineering
2	Krishna R. Putcha (Superannuated on 30.06.2008)	Reader	M.Tech., M.S	Super Computing



3	Dr. Sumam Mary Idicula	Reader	M.Tech., Ph.D	Natural language Processing, Human Computer Interaction
4	K. B. Muralidharan (on leave)	Lecturer	M.Tech.	Artificial Intelligence
5	G. Santhosh Kumar	Sr. Lecturer	M.Tech.	Software Engineering Wireless Mobile Networks
6	Mrs. U.Mini	Lecturer (on contract)	M.Tech	Information Systems
7	Mrs. Susan George	-do-	-do-	Software Engineering

3. Visiting Faculty (if any) :

Mr. Mohanan. K, Scientist, NPOL, Kakkanad

4. Research Staff : Nil

5. Research Scholars (Full Time & Part-time)

Sl. No.	Name	Funding Agency	Guide	Area of Work
1	Manju G		Dr. Sumam Mary Idicula	CAI
2	Shibu Ray S		Dr. Baby M D	Information seeking behavior
3	Surekha Mariam Varghese		Dr. K. Poullose Jacob	System Security
4	Susan Mathews (Thesis submitted)		Dr. Baby M D	IT and Professional Library Development
5	Shahana T.K (Thesis submitted)		Dr. K. Poullose Jacob	VLSI
6	Rekha K. James		Dr. K. Poullose Jacob	VLSI
7	G. Santhosh Kumar		Dr. K. Poullose Jacob	Sensor Networks
8	Sheena Mathew (Thesis submitted)		Dr. K. Poullose Jacob	System Security
9	Litta A J		Dr. Sumam Mary Idicula	Neural Networks
10	Bindhu M S		Dr. Sumam Mary Idicula	Natural Language Processing
11	Bindya M Varghese		Dr. N. Unnikrishnan	
12	Daleesha M.Viswanathan		Dr.Sumam Mary idicula	Human computer Interaction
13	Sudeep Elayidom M		Dr.Sumam Mary idicula	Dataminiing
14	Vineetha S.		Dr.Sumam Mary idicula	Bioinformatics
15	Binsu C. Kovoov		Dr. K. Poullose Jacob	System Security
16	Binu Elias Kurian		Dr. K. Poullose Jacob	Information Systems Engineering



17	Mohanam K.	Dr. Sumam Mary Idicula	Software Engineering
18	Mini U.	Dr. K. Poullose Jacob	Information Science
19	Sreeraj M (FT)	Dr. Sumam Mary idicula	Artificial Intelligence
20	Santhosh Simon	Dr. K. Poullose Jacob	Expert Systems
21	Prime Kumar (FT)	Dr. Sumam Mary idicula	Neural Networks
22	Sindhu L.	Dr. Sumam Mary idicula	Natural Language Processing
23	Bindu Baby Thomas	Dr. Sumam Mary idicula	Natural Language Processing
24	Lini Varghese	Dr. K. Poullose Jacob	Mobile Computing
25	Syama Das (FT)	Dr. Sumam Mary idicula	Data mining
26	Vimina E.R	Dr. K. Poullose Jacob	Computer Vision
27	Anupama Surendran (FT)	Dr. Philip Samuel	Object Oriented Program Testing
28	Pradeep M (FT)	Dr. David Peter	Adaptive MAC in Adhoc Wireless Networks
29	Manilal D L (FT)	Dr. David Peter	MAC layer design in Hybrid Traffic in WI-MAX Network Environment

6. Administrative Personnel

Sl. No.	Designation	No. of posts
1	Section Officer	1
2	Assistant	1 + 1 (vacant)
3	Office Superintendent (Typist)	1
4	Peon	1
5	Sweeper / Cleaner	1

7. Technical Personnel

Sl. No.	Designation	No. of posts
1	Tech. Officer Gr. I	1
2	Tech. Asst. Gr. III	3
3	Tech. Asst. Gr. II	1
4	Junior Librarian	1

8. Students Enrollment

Sl. No.	Programme of Study	Men	Women	Total
1	M.Tech. Degree in Computer and Information Science			
	2007-2009 batch	7	12	19
	2008-2010 batch	8	10	18



2 M.Tech. Degree in Software Engineering			
2007-2009 batch	2	15	18
2008-2010 batch	4	14	18
3 Ph. D			
2008-09	5	5	12

9. Research Facility

A. Laboratory

1. IBM server X3400 Intel Xeon 3 GHz, 2GB ECC DDR2 SDRAM, 2*73 GB, DVD Writer, FDD, 20/40 GB DAT, 17" TFT monitor	- 03 No.
2. Server (HCL) XEON 3.2 GHz dual processor, 1 GB DDR-2 RAM, 146*3 SCSI HDD, DVD Writer, FDD, TFT Monitor	- 01 No.
3. HCL Infiniti Global line server, PIV, 128 MB, 48 GB, CDD, FDD, CRT monitor.	- 01 No.
4. PC (IBM) Pentium duo 1 GB, 80 GB, FDD, Combo drive, TFT Monitor	- 18 Nos.
5. PC (HCL) Pentium IV 512 MB, 40 GB, FDD, CDD, TFT monitor	- 24 Nos.
6. PC (PCS) PIV 256 MB 40 GB FDD, CDD, CRT Monitor	- 06 Nos.
7. PC PIV910 Mother board, 256 MB, 10 GB, CDD, FDD, CRT Monitor	- 01 No.
8. PC AMD SEMPRON 256 MB 10 GB, CDD, FDD, CRT Monitor	- 02 Nos.
9. PC (Accel) PIII 256 MB, 40 GB, FDD, CDD, CRT Monitor	- 06 Nos.
10. PC (HCL) PIII 256 MB 40GB FDD, CDD, CRT Monitor	- 01 Nos.
11. PC (HCL) PIII, 128 MB, 8GB, CDD, FDD, CRT Monitor	- 01 No.
12. PC (WIPRO) PII 256 MB, 40 GB, FDD, CDD, CRT Monitor	- 06 Nos.
13. PC (HCL) Pentium 128 MB, 16 GB, CDD, FDD, CRT Monitor	- 01 No.
14. PC AMD 2500 64 bit, 512 MB, 40 GB, CDD, FDD, CRT Monitor	- 01 No.
15. UPS 30KVA Tata Leibert	- 01 No.
16. PC 104 based embedded boards	- 05 Nos.
17. PowerQuicc Reference Design board	- 01 No
18. NI's PXI Controller	- 01 No
19. Mica Mote Educational Kit	- 01 No
20. Montavista Development Kit	- 01 No

SOFTWARE

-
1. Windows 2000
 2. Oracle 8i
 3. Rational Suite Enterprise Edition
 4. Math Lab
 5. RT- Linux Pro 2.2



6. Lab view 8.2
7. Windriver Tornado 2.2.1/Vx Works 5.5.1
8. Montavista Linux

B. LIBRARY

No. of books/journals as on 31 st March of the previous year		Additions during the current Year	
Books	4760	Books	139
Journals	40	Journals	8

C. OTHERS

Overhead Projectors, Multimedia Projector etc.

10. Distinguished Visitors

Sl. No.	Name	Affiliation	Remarks
1	Dr. Jessy Deshene	University of Alabama, Birmingham, USA	
2	Mr. Jose Sebastian	Perot Systems Corporation, New York	
3	Mr. Dakshinamurthy	IBM Academic Initiative, Chennai	
4	Mr. Krishna Prasad, General Manager	UST Global, Trivandrum	

11. Ph.D. Awarded

Nil

Three Theses sent for adjudication

12. Publications

Dr. K. Poulose Jacob

1. "Voting-based Clustering Scheme for Energy Efficient Routing in Sensor Networks" Third International Conference on Information Processing, ICIP 2009 Bangalore, August 2009
2. "Duty cycle approach on energy conservation in wireless sensor networks- A Review" International Journal of Engineering Research & Industrial Applications, Volume 2, No. V/VI, 2009
3. "Fixed Point Decimal Multiplication using RPS Algorithm" 2008 IEEE International Symposium on Parallel and Distributed Processing Sydney, Australia, Dec 2008
4. "Decimation Filter Design Toolbox for Multistandard Wireless Transceivers using MATLAB", *International Journal of Signal Processing*, World Academy of Science, Engineering and Technology, Volume 5 Number 2, Spring 2009.
5. "RRNS-Convolutional Concatenated Code for OFDM based Wireless Communication with Direct Analog - to - Residue Converter", *International Journal of Electrical, Computer and Systems Engineering*, World Academy of Science, Engineering and Technology, Vol. 2, No. 2, Spring 2008, pp.86-93.



6. "A Novel Sigma-Delta based Parallel Analog-to-Residue Converter", International Journal of Electronics, Vol.96, No. 6, June 2009, 571–583, Taylor and Francis
7. "Jerim-320: a 320-bit hash function with dual applications - A Statistical Analysis" Journal of Discrete Mathematical Sciences & Cryptography Vol.11 (2008), No.4, pp. 471 - 482
8. "RNS based Programmable Decimation Filter For Multistandard Wireless Transceivers" *ECTI Transaction on Electrical Engineering, Electronics and Communications*, ECTI - Transaction Journal, Vol. 6, No. 2, pp. 57-66, 2008.
9. "JERIM-320: A New 320-bit Hash Function with Higher Security" International Journal of Computer Science & Applications [in Press]
10. "A Tool Box Approach to Decimation Filter Design Tool for Multi-standard Wireless Transceivers" IETECH Journal of Communication Techniques, International Engineering and Technology Publications, Vol.2, No.3, pp. 181-188, 2008.
11. "Dual Mode RNS based Programmable Decimation Filter for WCDMA and WLANs" IEEE International Symposium on Circuits & Systems, Washington, pp.952-955, May 2008
12. "Validation of Embedded Software through Static Analysis of Machine Codes" International Conference IACC'09, Patiala, 2009
13. "RNS based Programmable Multimode Decimation Filter for WCDMA and WIMAX" IEEE 67th Vehicular Technology Conference, Singapore, pp.1831-1835, May 2008
14. "Reversible Binary Coded Decimal Adders using Toffoli Gates" Lecture Notes in Electrical Engineering, Vol.14: Advances in Computational Algorithms and Data Analysis, Springer Netherlands, 2008
15. "Fast Reversible Binary Coded Decimal Adders", International Journal of Electronics, Circuits and Systems (IJECS) Volume 3 Number 1 (Winter 2008) pp 254-267

Dr. Sumam Mary Idicula

1. Suryapriya S, Anuja K, Sumam Mary Idicula, "A study on Machine Translation and Indian Sign language generation Systems", Proceedings of the National Conference on Research in Engineering, Kerala, March 009.
2. Syama B, Sumam Mary Idicula, "HMM Based Speech Recognition System for Malayalam", ICAI '08 - The 2008 International Conference on Artificial Intelligence, LAS Vegas, Nevada, USA July, 2008.

Santhoshkumar.G

1. Service Oriented Architecture for Data Retrieval from WSNs, International Journal on Information Processing, Accepted for Publication.
2. Safe Contiki OS, 2nd International Conference on Education and Research, Rajagiri School of Engineering and Technology, Kochi, Kerala, India, March 11- 14 (2009)
3. Formal Verification of programs in ADA language for flight software application, 2nd International Conference on Education and Research, Rajagiri School of Engineering and Technology, Kochi, Kerala, India, March 11-14 (2009)



4. An Energy Aware Load Balanced Clustering Scheme for Sensor Networks, National Conference on Computational Science and Engineering, Rajagiri School of Social Sciences, Kochi, Kerala, India, February 6-7 (2009)
5. Analysis of COX-3 Gene and Phylogeny Construction, National Conference on Computational Science and Engineering, Rajagiri School of Social Sciences, Kochi, Kerala, India, February 6-7 (2009)
6. Mobility Metric based LEACH-Mobile Protocol. 16th International Conference on Advanced Computing and Communications (ADCOM 2008), Anna University, Chennai, India, December 14-17 (2008)
7. Routing Protocol Enhancement for handling Node Mobility in WSNs. IEEE TENCON 2008, University of Hyderabad, Hyderabad, India, November 18-21 (2008)
8. Service Oriented Architecture for Data Retrieval from WSNs. International Conference on Information Processing (ICIP2008), UVCE, Bangalore, Karnataka, India, August 08 -11 (2008)
9. Motion Segmentation and Meanshift Assisted Contour Refinement for Airborne Video. IADIS International Conference on Computer Graphics and Visualization 2008, Amsterdam, The Netherlands, July 24-26 (2008)

13. Participation in Seminar/Conference/ Refresher courses etc.

Participant(s)	Programme	Role
Dr. K.Poulose Jacob.	ISPA-08: IEEE 2008 International Conference at Australia, 10-12 December 2008.	Presented Research Paper
Dr. Sumam Mary Idicula	IEEE International Conference on Electro/Information technology at Iowa State University, Ames, Iowa, USA during May 18-21, 2008	Presented Research Paper
G. Santhosh Kumar	ICIP 2008 - August 2008ADCOM 2008 - December 2008TENCON '08 - December 2008	Presented Research Paper

14. Awards / Honours / Fellowship etc. received:

Invited talk delivered at the National Conference at FISAT by Dr. K. Poulose Jacob.

15. Sponsored Research Projects

Sl.No.	Title	Sponsoring Agency	Amount (Rs.)	Investigator(s)
1	"Development of Regional Language interface for Information Retrieval from Database"	ISRO	Rs.6.7 Lakhs	Dr. Sumam Mary Idicula
2	"Development of Multimodel Interface for Information Retrieval from Databases"	ISRO	Rs.9.5 Lakhs	Dr. Sumam Mary Idicula



16. Research Programmes and Activities:

Three Research Scholars working under the guidance of Dr. K. Poullose Jacob have completed the work and have submitted their Theses.

17. Seminar/Conference/Workshop/ Refresher Courses:

1. National Conference on Software Engineering in Association with CSI
2. INTELLECTIONS: Invited Lectures

18. Consultancy work:

Sl. No. Name of Consultancy Sponsoring Agency

-
- | | | |
|---|---|---------------------------------|
| 1 | Computerisation and Networking Solution | Government of India undertaking |
|---|---|---------------------------------|
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DEPARTMENT OF ELECTRONICS

The University of Cochin instituted the Department of Electronics in the year 1975. This is envisaged as a postgraduate Department with Master's Degree and Ph.D programmes in frontier fields of Electronics. The Department was inaugurated by Prof. M.G.K. Menon in 1975. Realising the growing needs of trained man-power in various fields of Electronics, the University decided to start teaching programmes in the Department, anticipating formal sanction and approval of the University Grants Commission, All India Council for Technical Education, etc. in due course. Initially, an M.Tech. course was started with a student strength of 6. Subsequently it was raised to 20 in the general category and 5 in the sponsored quota.

In 1983, the All India Council for Technical Education (AICTE) and the University Grants Commission (UGC) extended financial support to the M.Tech. course. The Doctorate Programmes of the Department are mainly in the fields of Underwater Acoustics, Ocean Electronics, Microwave Propagation & Antennas, Pattern recognition, Microprocessor Applications, Signal processing and Display Devices. External agencies like the Department of Science & Technology (Govt. of India), Indian Space Research Organisation (ISRO), C.S.I.R., Atomic Energy Commission, Defence Research and Development Organisation and the State Government are supporting this Department through various Research projects and Research Fellowships.

In 1990, the Department started M.Sc. degree course in Electronics co-sponsored by UGC and Department of Electronics (Govt. of India). In 1988, the University Grants Commission sanctioned "COSIST" assistance of Rs.57.86 lakhs to the Department for development of postgraduate education and research in the areas of Microprocessor Applications and Microwave Antennas.

In 1993, the Department was selected by UGC for the Departmental Research Support (DRS) in the field of Ocean Electronics, with a financial assistance of about 60.00 lakhs for five years. In 1998, an additional financial assistance was sanctioned for Rs. 33.00 lakhs under DRS scheme for a period of 5 years. In 2005, DST selected this Department for financial assistance under their FIST Programme. An amount of Rs. 59.00 lakhs was sanctioned by DST for a period of 5 years. Sponsored projects are running in the Department for a total outlay of Rs.577.76 lakhs.

Ministry of Human Resources Development has given assistance for Rs.75.00 lakhs for establishing an advanced VLSI Laboratory and Signal Processing Laboratory in this Department. In the year 2007 the University Grants Commission has given Rs.20.00 lakhs and Rs.30.00 lakhs in 2008 specifically for creating infrastructural facilities in this Department. UGC has also sanctioned 13 separate Research Fellowships namely Research Fellowship for Meritorious Students (RFMS) to this Department in 2007, 2008 and 2009. The UGC has sanctioned Rs.75.00 lakhs to the Department for implementing the DSA (Phase II) Programme. In 2008, the DST has sanctioned two projects to the Department at a total cost of Rs.44.80 lakhs, and the Ministry of Earth Sciences has sanctioned a project at total cost of Rs.95.00 lakhs to the Department. The DRDO, Govt. of India has sanctioned a project for development



and study of Polymer composites for efficient EMI shielding property at microwave frequencies at a total cost of Rs.62.75 lakhs in the year 2008. The UKIERI has sanctioned Rs.62.75 lakhs for the project integrated smart antennas for next generation millimeter wave wireless communication in the year 2008. The VSSC has sanctioned Rs.8.89 lakhs for design and simulation of dielectric diplexer to the Department in 2008. Overall the Department has running more than 15 sponsored projects at a total cost of Rs.640.82 lakhs.

The technical biasing of the University, spectacular growth of Electronics industries in Kerala and the location of the University in the industrial zone of the State are all favourable aspects for hope of substantial development of this Department.

1. Programmes of Study/Research

2. Faculty Members

Sl.No.	Name	Designation	Qualification	Specilisation
1.	Dr.K. Vasudevan	Professor & Head	M.Sc., Ph.D.	Antennas, Electromagnetics, Microwave Devices, Radar Systems, Microwave Communications
2.	Dr. P.R.S.Pillai	Professor	M.Sc., Ph.D.	Digital Communication Computer Networks, Underwater Acoustics Microprocessors
3.	Dr. P. Mohanan	Professor	M.Sc., Ph.D.	Antennas, Microwave Networks, Microwave Communication
4.	Dr. C.K.Aanandan	Professor	M.Sc., Ph.D.	Microwave Communication, Radar Systems and Antennas
5.	Dr. Tessamma Thomas	Reader	M.Sc., M.Tech, Ph.D.	Speech/Image & Bio-medical Signal Processing, Digital System Design
6.	Dr.R.Mary Lourde (On leave)	Reader	B.Tech., M.Tech., Ph.D	Digital Electronics, Control Systems, Automation
7.	Mr.James Kurian	Reader	M.Sc., M.Tech.	Instrumentation, Embedded Systems
8.	Dr.Supriya M.H.	Sr.Lecturer	B.Tech., M.Tech., Ph.D.	Signal Processing, Network Analysis, Digital Electronics, Microprocessors, Computer Graphics, Control Systems, Data Structures.

3. Visiting Faculty (If any)

Sl.No.	Name	Designation	Qualification	Specilisation
1.	Sri. A.K.Prakash	Formerly Senior Scientist, NPOL	M.Tech.	Radar & Communication

4. Research Staff

Sl.No.	Name	Designation	Qualification	Specilisation
1.	Dr. Jaimon Yohannan	Principal Investigator of DST Research Project	Ph.D.	Microwave Electronics



5. Research Scholars

Sl.No.	Name	Funding Agency	Guide	Area of Work
Full – Time				
1.	Gijo Augustine	UJRF	Dr. K. Vasudevan	Microwave Electronics
2.	Bybi.P.C.	UGC	Dr.P.Mohanan	Microwave Electronics
3.	Deepti Das	DST	Dr.C.K.Aanandan	Microwave Electronics
4.	Gopikrishna.M	UGC	Dr.C.K.Aanandan	Microwave Electronics
5.	Jitha.B.	UGC	Dr.C.K.Aanandan	Microwave Electronics
6.	Robin Augustine	UGC	Dr. K. T. Mathew	Microwave Electronics
7.	Shameena.V.A.	UGC	Dr. P. Mohanan	Microwave Electronics
8.	Prajas John	JRF	Dr.P.R.S. Pillai	Embedded Systems
9.	Deepu.V.	JRF	Dr. P. Mohanan	Microwave Electronics
10.	Sarin.V.P.	UGC	Dr. K. Vasudevan	Microwave Electronics
11.	Prabha.C.	JRF	Dr.P.R.S.Pillai	Target Identification and tracking using neural networks
12.	Ullas G. Kalappura	UGC	Dr. K. T. Mathew	Microwave Electronics
13.	Nishamol.M.S.	UGC	Dr. K. Vasudevan	Microwave Electronics
14.	Laila.D.	-	Dr. P. Mohanan	Microwave Antennas
15.	Ashkarali.P.	-	Dr.C.K. Aanandan	Microwave Electronics
16.	Reji.A.P	-	Dr. Tessamma Thomas	Image Processing
17.	Tony.D.	UGC	Prof. K. Vasudevan	Microwave Antennas
18.	Anju P. Mathews	UGC	Prof.C. K.Aanandan	Microwave Antennas
19.	Sujith.R.	DST	Prof. P. Mohanan	Microwave Antennas
20.	Raji.S. Nair	DST	Prof. P. Mohanan	Microwave Antennas
21.	Lindo.A.O.	UGC	Prof.C. K.Aanandan	Microwave Antennas
Part-time				
1.	Francis Jacob.K	BSNL	Dr. P. Mohanan	Smart Antennas for local wireless accessing in Telecom
2.	Radhakrishnan. K.	MA College of Engg. Kothamangalam	Dr. K.G.Balakrishnan	Kalman Filter and Optional Control
3.	James Kurian	DOE, CUSAT	Dr. P.R.S. Pillai	Imaging Techniques for detection of flaws in nonmetallic media of microwaves
4.	Deepa Sankar	SOE, CUSAT	Dr.Tessamma Thomas	Medical Image Processing



5.	Praveen.N.	-	Dr.Tessamma Thomas	Biometrix
6.	Vinu Thomas	IHRD	Dr. K. T. Mathew	Microwave Imaging
7.	Manoj Joseph	KSCSTE	Dr. P. Mohanan	Microwave Electronics
8.	Anish Kumar M.S.	KSCSTE	Dr.Gopikakumari	Microwave Electronics
9.	Ananda Resmi.S.	-	Dr.Tessamma Thomas	Image Processing
10.	Mohankumar.K.	-	Dr.P.R.S.Pillai	Target Identification and tracking using neural networks
11.	Girish.G.	-	Dr.C.K.Aanandan	Microwave Electronics
12.	Kedarnath Shenoy. S	-	Dr.P.R. S.Pillai	Target Identification and tracking using neural networks
13.	Nobert Thomas Pallath	-	Dr.Tessamma Thomas	Design and Development of a hybrid MAC protocol for video transmission over wireless networks
14.	Deepa. J	-	Dr.Tessamma Thomas	Medical Image Processing
15.	Gopakumar.C	-	Dr. K. T. Mathew	Microwave Imaging Techniques
16.	Sethunadh. R	-	Dr.Tessamma Thomas	Image Processing
17.	Ajith Kumar.P.C	-	Dr. P. Mohanan	Adaptive Algorithm for Smart Antenna Technology
18.	Sethunadh. R	-	Dr.Tessamma Thomas	Image Processing
19.	Ajith Kumar.P.C	-	Dr. P. Mohanan	Adaptive Algorithm for Smart Antenna Technology
20.	Cyriac.M.Odackal	-	Prof.C.K.Aanandan	Microwave Electronics
21.	Sarah Jacob	-	Prof. P. Mohanan	Microwave Electronics
22.	Binesh.T.	-	Prof. P..R.S.Pillai	Ocean Electronics
23.	Prakash.K.C.	-	Prof. K. Vasudevan	Microwave Electronics
24.	Sreejith.M. Nair	-	Prof. P. Mohanan	Microwave Electronics
25.	Sreenadh.S.	-	Prof.C.K.Aanandan	Microwave Imaging

6. Administrative Personnel

Sl.No.	Designation	No. of Posts
1.	Section Officer	1
2.	Selection Gr. Assistant	2
3.	Assistant	1 (On daily wages)
4.	Sl.Gr.Typist/Steno	2 (1 on daily wages)
5.	Peon	2
6.	Sweeper	1 (on daily wages)



7. Technical Personnel

Sl.No.	Designation	No. of Posts
1.	Maintenance Engineer	1
2.	Tech.Asst.Grade III	4 (1Vacant)
3.	Technician	1(Vacant)
4.	Printer	1
5.	Asst. Librarian	1
6.	Lab. Assistant	3
7.	Storekeeper Gr. II (Electronic Science)	1

8. Student Enrollment

Sl.No.	Programme of Study	Men	Women	Total
1.	M.Tech. (Electronics)	13	14	27
2.	M.Sc. (Electronics)	14	11	25

RESEARCH FACILITIES

a. Laboratories (List out Major equipments available)

LIST OF MAJOR EQUIPMENTS AVAILABLE IN THE DEPARTMENT (Cost exceeding more than 1 lakh)

Sl.No	Equipment	Cost in Lakhs
1.	HP 8510 C Network Analyzer	20.00
2.	HP 8514 B S Parameter Test set	20.50
3.	HP 8341 B Broad band Microwave sweep oscillator	7.00
4.	HP 83651B Dedicated source 45 MHz - 50 GHz	18.5
5.	HP 8511B Frequency Converter	1.36
6.	HP Spectrum Analyzer	7.98
7.	HP Dynamic Signal Analyser	6.99
8.	Impedence Analyzer	1.76
9.	Multifunction generator HP 8904A	1.95
10.	Flaw Detector UFD 300	4.98
11.	Level recorder , Turn Table, Recording Accessories	3.00
12.	Power Amplifier B& K (2 Nos)	3.75 (each)
13.	Measuring Amplifier (2 Nos)	1.25 (each)
14.	Precession Conditioning Amplifier	1.05
15.	Charge Amplifier	1.12
16.	Graphics Plotter	1.42
17.	Transducer B & K 8100, 8103, 8104, 8105 (4 Nos)	2.92
18.	HP 83 HP Frequency Converter	5.00



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19.	Image Scanner	2.38
20.	HP Duel Power meter (2 Nos)	3.00
21.	HP 8410 Network Analyzer with reflection test	7.0
22.	S- Band Radar (Donated by LRDE, Bangalore)	100.00
23.	Vacuum Coating Unit	4.00
24.	Robot Arm & Vision System	7.00
25.	Lock-in Amplifier	2.00
26.	LAN System	12.00
27.	HP XY/t Record	1.2
28.	UPS 5 KVA(6 Nos)	9.00
29.	HP 8349 B Frequency Converter	1.5
30.	HP Microwave Sweep Oscillator	6.5
31.	HP 9000 series Instrumentation Controller	3
32.	Scientific Atlanta Positioner & controller	2.4
33.	HP Microprocessor Development System	5.00
34.	Short Range Sonar	5.07
35.	Workstation (DEC)	4.7
36.	Fully Instrumented Underwater Transducer Evaluation Facility	20.00
37.	Fully Instrumented Free Field Antenna Test Facility	20.00
38.	Digital Personal Workstation	3.50
39.	High Frequency High Power Amplifier	1.98
40.	Standard Transducer	2.92
41.	Echo Sounder ES60	17.29
42.	Simulation Software for Microwave Circuits/Antennas	2.00
43.	Underwater Video Camera & Accessories	5.03
44.	Matlab for DSP Laboratory	3.68
45.	48 Channel 100MHz Logic Analyzer	1.05
46.	Image Grabber System	1.12
47.	Workstations (2 Nos)	1.53 (each)
48.	Portable Network Analyzer	5.00
49.	Microwave Vector Network Analyzer	38.07
50.	Dual Frequency Sonar	6.62
51.	SMD Rework Station	13.25
52.	Logic Analyzer	4.31
53.	Digital Storage Oscilloscope	1.07
54.	Computer with Xeon Processor 3.73 GHz x 2 (16 Nos.)	42.83
55.	Spectrum Analyzer	3.26



56.	Colour CCD Camera COHU	3.82
57.	Sony Lap Top	1.16
58.	UPS IGA Sattern 5 KVA (8 Nos.)	12.24
59.	HP XW 4300 Workstation	1.30
60.	20 KVA Diesel Generator	3.14
61.	Agilent PNA	45.00
62.	Simulation Software for Microwave Circuits/Antennas	13.00
63.	VLSI Tools	4.00
64.	Workstation/Computers etc.	12.00
65.	Generator / UPS etc.	8.00
66.	R & S PNA – Network Analyzer	37.00
67.	Spectrum Analyzer	8.00
68.	T _L A 5201 Logic Analyzer Tektronix34 channels 25 Hz	6.00
69.	TDS 2022 Two channel 200 MHz 2GS/s Oscilloscope (DSO)	1.00
70.	SMD Re-work station Martin DBL-05 + Air Compressor	17.00
71.	Plasma Display (2 Nos.)	7.25
72.	Coventor MEMS Software	9.93
73.	Video Conferencing System	2.80
74.	LCD Multimedia Projector	3.40
75.	Spectrum Analyzer	12.44
76.	20 Element Hydrophone Array	2.86
77.	PCB Prototype Machine	7.86
78.	External Power Sensor	1.98

RESEARCH AND TRAINING LABORATORIES OF THE DEPARTMENT.

With special assistance from the Ministry of Human Resource Development, Govt. of India, three special Research and Training Laboratories have been set up in the Department in frontier areas of Electronics.

Microprocessor Laboratory

This Laboratory was set up with aid from the Ministry of Human Resource Development, Government of India. A total grant of Rs.30 lakhs has been sanctioned for setting up this centre. The centre is equipped with Microcomputer systems, a large number of Microprocessor system support cards including memory cards, Dynamic Memories, Battery Backup Cards, A/D & D/A Cards, Relay Cards, Opto Coupler Cards, Peripheral Controller Cards, Graphic and Semigraphic Terminals, stand alone VDU's and three Microprocessor Development Systems: One is a 16 bit system from Hewlett Packard and the other two from Intel Corporation- the 8 bit Personal Development System and the 16 bit stand alone Development system.

The Laboratory is equipped with multi purpose bus running through out to accommodate most commonly used buses.



Research work undertaken in this centre are in the areas of Multiprocessors, Protocols for Multiprocessors, Speech Processing, Pattern Recognition, etc.

(i) ARM9 Based Attendance and Access Control System.

Atmel ARM9 Processor based attendance and access control system has been developed using an RFID techniques. The RFID receiver is interfaced to the ARM9 based development board and necessary software has been developed to manage the system. The window CE 5.0 environment is utilized for the above.

(ii) Ethernet Video Monitoring System based on ARM9 Processor.

A Video Camera interface and driver has been developed for the Net monitoring applications. The in built dynamic web server helps to monitor the environment from remote locations.

(iii) QVGA TFT LCD Interface.

A QVGA TFTLCD interface has been developed for 18 series PIC Processor and is also capable of interface connecting to the internet. The system is very helpful in remote message display applications.

(iv) Robot Status Monitoring System

A PIC32 Processor Based Remote Status Monitoring System for the mobile robot has been developed. The system incorporates an RF module having SPI interface and USB bridge interface to the PC.

OCEAN ELECTRONICS LABORATORY (CUCENTOL)

A Research and Training Laboratory in Ocean Electronics (CUCENTOL) has been set up in the Department with the financial assistance from the Ministry of Human Resource Development, Govt. of India and the UGC. An amount of Rs. 32 lakhs was sanctioned by the Ministry in two installments for this Centre. University Grants Commission has approved the establishment of the Centre during the VIII plan period with essential staff and infrastructure. UGC has sanctioned a sum of Rs.60.00 lakhs under the DRS programme in 1993. Developments of new Underwater Transducers and Arrays for Sonar Applications are the major activities of the centre.

Studies on marine animal behaviour are gaining increased attention nowadays. The marine biologists have been labouring hard to develop systems to understand the behaviour and physiology of marine animals in their normal environment. The requirement of monitoring the detailed geographical position of fish in the open sea is highly complex. Migratory patterns of certain commercially important species are widely used for the purpose of stock assessments. The real time monitoring of the migratory routes is not feasible in the case of marine animals, which spent majority of the time at higher depths, as high frequency signals are heavily attenuated in underwater. Certain animals like whales, sharks, etc. spend a considerable time in the sea surface, while the species like tuna do not come to the sea surface at all. The satellite based active tracking can be resorted to only for certain species and active tracking is much expensive compared to passive tracking. Hence the migratory pattern of highly migratory species like the tuna in the open sea, can only be performed by attaching archival tags to the species under study. These tags can be used to measure the oceanographic parameters, such as pressure, temperature, light level data, etc.



A prototype archival electronic tag for monitoring the ocean parameters like temperature, pressure and light intensity has been developed. A digital temperature sensor is used to sample the temperature from the tag's surroundings, while a micro machined piezoresistive silicon digital pressure sensor, which is capable of measuring absolute pressure levels upto 14 bars, provides the depth information. The depth measurements can be made more accurate, if the resolution of the pressure sensor is significantly high. An absolute pressure measurement with a resolution of 1.2 mbar (approx. 1.2 cm in depth measurements) has been achieved with this tag. One of the important parameters to be measured is the geolocation of the species, which is computed from the ambient light intensities recorded by the digital light sensor in the tag. These parameters can be sampled and recorded in the memory at preset time intervals, as set at the time of deployment of the tag. This minaturised tag provides the temperature data with 13 bit resolution, while the pressure and light intensity values have 15 bit resolutions. When used in fisheries studies, the size of the device has to be miniaturised, so that by way of attaching such devices, the normal behaviour of the species remain unaffected.

Simulation of Rotating Hydrophone arrays and Localisation of the Underwater Targets Using Buoy Systems and Estimation of DOA Using the Buoy System are also undertaken in this laboratory.

MICROWAVE ELECTRONICS AND ANTENNA LABORATORY

A well established research and training Laboratory in Microwave Electronics and Antennas has been set up in this Department with financial assistance from MHRD, UGC, DST (Govt. of India) and DoE (Govt. of India). The Laboratory is equipped with most modern and sophisticated equipment like HP 8510 B Network Analyzer, Microwave Power Meter and different antenna and RCS standards. The laboratory is having a Microwave Anechoic Chamber for simulating free space environment for antenna and RCS measurements. The Chamber has instrumentation set-up attached to it with provision for fully automatic measurement based on HP 8510 B Network Analyzer and Scientific Atlanta Positioner. The Department has developed an indigenous software which is used for quick and precise antenna measurements and analysis. The major areas of research now being pursued are microstrip antennas and transmission lines, super-conducting microwave transmission lines, integrated circuits and antennas, reduction of radar cross section, microwave non-destructive testing, leaky wave antennas, microwave horn antenna, material studies in microwave region etc. Non-destructive testing of objects like vehicular tyres is a break through by the laboratory in NDT technique. These facilities are being used/operated by many establishments like SAMEER (Bombay & Madras), SAC Ahamadabad, NPOL, Cochin, Delhi University, CSIR Regional Research Laboratory (Trivandrum), Jadavpur University, Gulbarga University and others.

Major works undertaken are:

- (i) Design and development of compact DVBH antennas
- (ii) UWB Microwave Imaging for Biomedical Application (breast cancer detection)
- (iii) Design and Development of microwave tunable devices using BST Ferroelectric thin films
- (iv) Conductive strips loaded planar antennas for mobile radiation hazards reduction
- (v) Microwave ceramic resonators
- (vi) Development of conducting polymer composites for EMI shielding



Synthesis and study of conducting polymers and their composites for various electromagnetic compatibility applications were carried out. Conducting polymer (Polyaniline, Polypyrrole, Polyurethane etc) based blends are synthesized. Composite materials involving microwave absorbers such as graphite and carbon black are prepared. Conducting polymers have found significant applications in the past decade in industrial, scientific and medical (ISM) fields. Conducting polymers are used in applications like anticorrosion, electromagnetic interference (EMI) shielding, static coating and other antenna applications.

Embedded System Laboratory (ESL)

The Department has set up an Embedded Systems Laboratory, comprising of Martin Auto vision Expert 9.5 SMD Re-workstation, Tektronics 34 Channel Logic Analyzer, Tektronics Digital Storage Oscilloscope, etc. The nature of activities currently being pursued in the Department making use of these facilities include the design and development of Embedded Systems for the realization of steering/control system for hydrophone arrays, embedded signal processor modules, embedded CDMA transceiver modules, miniaturized archival tags for tagging tuna, development of miniaturized embedded global positioning devices, etc..

(i) Training and Research facilities in VLSI Design

In view of the importance and significance in promoting Training and Research activities in VLSI Design, the Department is planning to establish a VLSI Laboratory for exposing the PG students and Research Scholars to this most emerging area of Electronics, and cater the requirements of National Laboratories and industries.

(ii) VLSI/Embedded Systems Laboratory

This Laboratory was set-up with the assistance from the Ministry of Human Resource Development, Government of India. A total grant to the tune of Rs.50.00 lakhs has been sanctioned for setting-up this Laboratory.

AUDIO AND IMAGE RESEARCH LAB (AIRL)

In this laboratory major works are done in the following areas:

1. Biomedical Image Processing

- (a) Analysis and Content Based Image Retrieval of Scoliosis images
- (b) Mammogram analysis using fractals for the detection of breast cancer

2. Genomic Signal Processing

- (a) DNA Image processing
- (b) Microarray Image Processing
- (c) Finger Print Recognition and Identification

Other Research Laboratories :

Microwave Tomography and Materials Research Lab(MTMR)

b. Library

No of books and Journals as on 31 st March of the Previous Year	Additions during the current year
Books : 5808	10
Indian Journals - 37	2

**c. Others : NIL****9. Distinguished visitors**

SI.No.	Name	Affiliation	Remarks
1	Mr. S. Anantha Narayanan	Director, NPOL, Kochi,	Inauguration of APSYM 2008
2	Prof. Tapan Sarkar	Syracuse University, USA	Key Note Address APSYM 2008
3	Prof. M. Salazar Palma	Universidad, Carlos III de Madrid Spain	Invited Talk on A Super-Resolution Method of Source Reconstruction using Near Field Antenna Measurements In connection with APSYM 2008
4	Dr. R. M. Jha	NAL, Bangalore	Invited Talk APSYM 2008
5	Dr. Subrata Sanyal,	IIT, Kharagpur	Invited Talk APSYM 2008
6	Prof. Debatosh Guha	Institute of Radio Physics & Electronics, Kolkata	Invited Talk APSYM 2008
7	Dr. K. J. Vinoy	IISc, Bangalore	Invited Talk APSYM 2008
8.	Dr. M. T. Sebastian,	RRL, Thiruvananthapuram	Invited Talk APSYM 2008

10. Ph.Ds Awarded

SI.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1.	Realization of a Target Classifier for Noise Sources in the Ocean	Supriya.M.H.	Dr.P.R.S.Pillai
2.	Development of a Novel Wide-Band Cylindrical Dielectric Resonator Antenna	Praveen Kumar.A.V.	Dr.K.T.Mathew
3.	Investigations on Broadband Planar Monopole Antennas with Truncated Ground Plane	Suma.M.N.	Dr.P.Mohanan
4.	Development of Shape Descriptors Based on Legendre Polynomials and Content-Based Retrieval of Scoliosis Images	Dineshkumar.V.P.	Dr.Tessamma Thomas

11. Publications**a. Papers**

1. "CPW-Fed Koch Fractal Slot Antenna for WLAN/WiMAX Applications" Deepti Das Krishna, Student Member, IEEE, M. Gopikrishna, Student Member, IEEE, C.K. Anandan, P. Mohanan, Senior Member, IEEE, and K. Vasudevan, Senior Member, IEEE, IEEE Antennas and Wireless Propagation Letters, VOL.7, 2008 pp-389-392
2. "A Quasi-Omnidirectional Antenna for Modern Wireless Communication Gadgets" P. C. Bybi, Student Member, IEEE, Gijo Augustin, Student Member, IEEE, B. Jitha, Student Member, IEEE, C.K. Anandan, K. Vasudevan, Senior Member, IEEE, and P. Mohanan, Senior Member, IEEE, IEEE Antennas And Wireless Propagation Letters, VOL. 7, 2008, pp-505-508



3. "A Compact Dual-Band Planar Antenna for DCS-1900/PCS/PHS, WCDMA/IMT-2000, and WLAN Applications" Gijo Augustin, Student Member, IEEE, P. C. Bybi, Student Member, IEEE, V. P. Sarin, P. Mohanan, Senior Member, IEEE, C. K. Aanandan, and K. Vasudevan, Senior Member, IEEE, IEEE Antennas And Wireless Propagation Letters, VOL. 7, 2008 pp-108-111
4. "Compact linear tapered slot antenna for UWB applications", M. Gopikrishna, D.D. Krishna, C.K. Aanandan, P. Mohanan and K. Vasudevan Electronics Letters 25th September 2008 Vol. 44 No. 20
5. "Ultra-wideband slot antenna for wireless USB dongle applications" D.D. Krishna, M. Gopikrishna, C.K. Aanandan, P. Mohanan and K. Vasudevan Electronics Letters 28th August 2008 Vol. 44 No. 18
6. "Slot line fed dipole antenna for wide band applications", Deepu.V, S.Mridula, Sujith R and P.Mohanan, Microwave and Optical Technology Letters, Vol. 51, No. 3, March 2009
7. "ACS fed printed F shaped uniplanar antenna for Dual band WLAN applications", Deepu V, S Mridula, R Sujith and P Mohanan, Microwave and Optical Technology Letters, (Accepted for publication May 2009).
8. "A Compact Dual-Band Modified T-shaped CPW-Fed Monopole Antenna", Sujith R, Deepu.V, Laila D, C.K. Aanandan, K. Vasudevan and P. Mohanan, Microwave and Optical Technology Letters, Vol. 51, No. 4, April 2009
9. "Compact asymmetric coplanar strip fed antenna for wide band applications" Laila D, Deepu.V, Sujith R., P. Mohanan, C.K. Aanandan, and K. Vasudevan Microwave and Optical Technology Letters, (Accepted for publication May 2009).
10. "Compact Dual Frequency Dual Polarized Cross Patch Antenna with an X-slot", Nishamol M. S., Sarin V. P., Gijo Augustin, Deepu V., C. K. Aanandan, P. Mohanan and K Vasudevan, Microwave and Optical Technology Letters (December 2008.)
11. "Band-notched inverted-cone monopole antenna for compact UWB systems" Gayathri, R.; Jisney, T.U.; Krishna, D.D.; Gopikrishna, M.; Aanandan, C.K.; Electronics Letters Volume 44, Issue 20, September 25 2008 Page(s):1170 - 1171
12. "Design of a microstrip fed step slot antenna for UWB communication" M. Gopikrishna, Deepthi Das Krishna, C. K. Aanandan, P. Mohanan, K. Vasudevan Microwave and Optical Technology Letters Volume 51 Issue 4, Pages 1126 - 1129
13. "An electromagnetically coupled dual-band dual-polarized microstrip antenna for WLAN applications" V. P. Sarin, M. S. Nishamol, Gijo Augustin, P. Mohanan, C. K. Aanandan, K. Vasudevan Microwave and Optical Technology Letters Volume 50 Issue 7, Pages 1867 - 1870
14. "Content Based Image retrieval of spine Radiographs with Scoliosis", V.P Dinesh kumar, Tessamma Thomas, K.V Menon Journal of Spinal Disorders and Techniques, 2008, (Accepted)
15. Performance "Study of an Improved Legendre Moment Descriptor as Region-Based Shape Descriptor", Dinesh Kumar V. P., Tessamma Thomas, Pattern Recognition and Image Analysis, Vol. 18, No. 1, pp. 23-29, 2008.



16. "Analysis of underwater Transients using lifting based wave packet transform", Roshan Jacob, Tessamma Thomas, A Unnikrishnan, ICGST International Journal on Digital Signal Processing, vol. 9, Issue1, pp- 25-27, June 2009
17. "Breast cancer Detection using Entropy based Fractal Modeling of Mammograms", Deepa Sankar, Tessamma Thomas, International Journal of Recent Trends in Engineering, Vol. 1, No.3, pp 171-175, June 2009.
18. "Automatic Gridding of DNA Microarray Images using Optimum Subimage", Deepa J, Tessamma Thomas, International Journal of Recent Trends in Engineering, Vol. 1, No. 4, pp-37-40, June 2009.
19. "Analysis of Medical Images using improved Fractal Modeling approach", Deepa Sankar, Tessamma Thomas, Journal of Indian Academy of Neurosciences, Vol-15, pp-59-60, 2008
20. "Image Adaptive Automatic Gridding of Microarray Images", Deepa J, Tessamma Thomas, Journal of Indian Academy of Neurosciences, Vol-15, pp-59, 2008
21. "Nonlinear Modeling of Loudspeaker using Adaptive Second order Volterra Filters", Deepa Sankar, Tessamma Thomas, International Engineering and Technology Journal of Information Systems, IETECH Publications, Vol-2, No.2, pp-34-40, 2008
22. "Development of a prototype electronic tag for studying the migratory behaviour of marine species", Prajas John, Jinto George, Supriya M. H and P. R. Saseendran Pillai, J. Acoust. Soc. Am. Volume 125, Issue 4, pp. 2549-2549 (April 2009)
23. "A High Resolution Pressure Tag for Ocean Depth Measurements", Prajas John, Jaison Peter, Adrine Antony Correya, M. H. Supriya and P. R. Saseendran Pillai, J. Acoust. Soc. Am. Volume 123, Issue 5, pp. 3208-3208 (May 2008)
23. "Microwave Studies on the Dielectric Properties of Sm and Sm/CdTe Doped Sol-Gel Glasses by Cavity Perturbation Technique." Siby Mathew, P. R. Rejikumar, Jaimon Human pericardial fluid at microwave frequencies, A. Lonappan, B. Paul, V. O. Timothy, C. Rajasekaran, V. Thomas, J. Jacob and K. T. Mathew, Microwave and Optical Technology Letters, Volume 51, No.1, Pages 155-158, January, 2009.
24. "Detection of biliary functional problems using microwaves", A. Lonappan, B. Paul, V. O. Timothy, C. Rajasekaran, V. Thomas, J. Jacob and K. T. Mathew, Microwave and Optical Technology Letters, Volume 51, No.1, Pages 101-103, January, 2009.
25. "A novel method of detecting HIV/AIDS using microwaves, A. Lonappan, V. Thomas, G. Bindu, J. Jacob C. Rajasekaran and K.T. Mathew, Microwave and Optical Technology Letters, Volume 50, No.3, Pages 557-561, March, 2008.
26. "Analysis of female human breast tissues at microwave frequencies", G. Bindu and K. T. Mathew, Microwave and Optical Technology Letters, Volume 50, No.3, Pages 614-616, March, 2008.
27. "Biocompatibility study of hydroxyapatite-chitosan composite for medical applications at microwave frequencies", Robin Augustine, Ullas G. Kalappura, K. T. Mathew, Microwave and Optical Technology Letters, Volume 50 Issue 11, Pages 2931-2934, 2008.
28. "Polyaniline as an automatic beam steering material", R. Menon, R. M. Thomas, H. John, R. Joseph, and K.T. Mathew, Microwave and Optical Tech. Letters, **50**, No.2, 422-425, February, 2008.



29. "Comparison of microwave and electrical properties of selected conducting polymers" Lakshmi K, John H, Joseph R, George K E and Mathew K T , Microwave and Optical Tech. Letters, **50**, No.2, 504-508, February, 2008.
30. "An Infrared Sheet of Light Beacon Based Intelligent Traffic and Transport Control system", James Kurian and P.R. Saseendran pillai, International Review of Automatic Control (I.R.A.CO.), Vol.1, No.2, July 2008.
31. "An Encoded Infrared Sheet of Light Beacon System for Precise Localization of Indoor Mobile Robot Vehicles", James Kurian and P.R. Saseendran pillai Journal of Automation, Mobile Robotics and Intelligent Systems, Vol.3 No.2, pp. 34-41, 2009.
32. "A DISLiB based Natural Language Guiding System for Assisting Visually Impaired in Indoor Structured Environment", James Kurian and P.R. Saseendran pillai, IOS Press, Journal of Technology and Disability. Vol.21, No.1, 2009.
33. "Realization of an FPGA Sub System for Reducing Odometric Localization Errors in Wheeled Mobile Robots", James Kurian and P.R. Saseendran pillai , Journal of Automation, Mobile Robotics and Intelligent Systems, Vol.3 No.3, 2009.

A. Conference

1. "A dual band dual polarized microstrip antenna for WLAN applications" Sarin V.P, Nisha Nassar, Gijo Augustine, P. Mohanan, C.K Anandan and K. Vasudevan, Antennas and Propagation Society International Symposium, 2008. AP-S 2008 5-11 July 2008
2. "A CPW-fed Triple Band Monopole Antenna for WiMAX/WLAN Applications" Krishna D.D. Gopikrishna M, Anandan C.K, Microwave Conference, 2008. EuMC 2008. 38th European 27-31 Oct. 2008 Page(s) : 897 - 900
3. "Band Notched Semi-elliptic Slot antenna for UWB Systems" Gopikrishna, M. Krishna, D.D. Anandan, C.K. Microwave Conference, 2008. EuMC 2008. 38th European 27-31 Oct. 2008 Page(s) : 889 - 892
4. "An Ultra Compact Antenna for DVBH Applications" Deepu V, S Mridula, Anju Pradeep Sujith R and P Mohanan, IEEE APS 2009 , (accepted)
5. "Compact Dual band antenna for modern wireless communication gadgets" Gijo Augustine, Bybi P C, Sarin V P, Nishamol M S, P Mohanan, C K Anandan and K Vasudevan Antennas and Propagation Society International Symposium, 2008. AP-S 2008 5-11 July 2008
6. "A Compact CPW fed antenna for ultra wideband applications" Shameena V A, P. Mohanan, Anandan C.K. and K. Vasudevan, Antennas and propagation Symposium (APSYM) 2008
7. "Dual ring SRR frequency estimator" Anju Pradeep, S. Mridula and P. Mohanan, Anandan C.K. and K. Vasudevan Antennas and propagation Symposium (APSYM) 2008
8. "Finite element analysis of semicylindrical DIELECTRIC Resonator based filter" Jaimon Yohannan, K. Vasudevan and K.T Mathew Antennas and propagation Symposium (APSYM) 2008
9. "Microwave Dielectric properties of CeO₂ filled HDPE composites for microwave substrate applications" P.S Anjana, *V. Deepu, *P. Mohanan and M.T Sebastian Antennas and propagation Symposium (APSYM) 2008



10. "Cross patch antenna with an X-slot for polarization switching" Nisha Nassar, Sarin V.P, Deepu V, Sujith R,C.K Aanandan, P.Mohanan and K. Vasudevan Antennas and propagation Symposium(APSYM) 2008
11. "Compact uniplannar antenna for wide band applications" Laila D, Sujith R, Deepu V, K. vasudevan, C.K Aanandan and P.Mohanan Antennas and propagation Symposium (APSYM) 2008
12. "Compact CPW fed antenna for multiband applications" Sujith Raman, Deepu V, K vasudevan, C.K Aanandan and P. Mohanan Antennas and propagation Symposium (APSYM) 2008
13. "Broad band microstrip antenna for wireless applications" Sarin V.P, Nisha Nassar, Deepu V, C.K Aanandan, P. Mohanan and K.Vasudevan Antennas and propagation Symposium (APSYM) 2008
14. "An investigation of wide band microstripline fed half split cylindrical dielectric resonator antenna" C Gopakumar, Ullas G Kalappura, Jaimon Yohannan and K T Mathew Antennas and propagation Symposium(APSYM) 2008
15. "The CBIR system for classification of AIS", V.K Menon, Dinesh Kumar V.P, Tessamma Thomas, Accepted for the Global spine Congress San Francisco, USA, June 23-26, 2009.
16. "Associating coronal and sagittal plane profile for retrieval of scoliosis images", Dinesh Kumar V.P, V.K Menon, Tessamma Thomas, Proceedings of the XXII Annual Conference of Association of Spine Surgeons of India(ASSICON), Chennai, 23-25 January 2009.
17. "Fast Fractal Coding Method for the Detection of Microcalcification in Mammograms", Deepa Sankar, Tessamma Thomas, Proceedings of the IEEE International Conference on Signal Processing, Communications and Networking (ICSCN 2008), Chennai, pp-471-476, January 4-6, 2008
18. "Clustering of Invariance Improved Legendre Moment Descriptor for Content Based Image Retrieval", Dinesh Kumar V. P., Tessamma Thomas, Proceedings of the IEEE International Conference on Signal Processing, Communications and Networking (ICSCN 2008), Chennai, pp- 323-327, January 4-6, 2008
19. "Locating Microcalcifications in Mammograms using Modified Fractal Coding Method for the Detection of Breast Cancer", Deepa Sankar, Tessamma Thomas, Proceedings of the National Seminar on Information, Communication and Intelligent Systems, Kochi, pp-59-65, February 8-9, 2008
20. "Implementation of Mass center Features for the Detection of Microcalcifications", Deepa Sankar, Tessamma Thomas, Accepted for Presentation at the National Conference on New frontiers and Current trends in Biotechnology, Organized by Department of Biochemistry, University of Madras & Society for Biotechnologists, India, 18th - 19th October 2008
21. "A parallel multiple subsequence structure for fast computation of wavelet packet transform on MPPs", V.P Dinesh kumar, Devassia V.P, Mini M G , Tessamma Thomas Proceedings of the first International Conference on Emerging Technologies and Applications in Engineering, Technology and Sciences, Rajkot, Gujarat, vol.1, pp-733-737, January 11-14, 2008.



22. "Design and Realization of a Web Based Controller for Laboratory Robot Manipulator", James Kurian and P.R. Saseendran pillai Proceedings of the National Conference on Machine Intelligence (NCMI-2008) Jagadhri, INDIA, PP141-145, August 2008.
23. "An FPGA Sub System for Terrain Irregularity Corrections by Reducing Odometric Localization Errors in Wheeled Mobile Robots", James Kurian and P.R. Saseendran pillai Proceedings of the National Conference on Machine Intelligence (NCMI-2008) Jagadhri, INDIA, PP285-293, August 2008.
24. "FEM analysis of dielectric resonator loaded multiple cavity filter", Jaimon Yohannan and Mathew K. T. 2008 IEEE International Symposium on Antennas and Propagation and USNC /URSI National Radio Science Meeting, San Diego, California, USA, June 5-12, 2008
25. "Finite Element Analysis and Design of Dual mode band pass filter", Jaimon Yohannan and Mathew K. T., XXIX General Assembly of URSI in Chicago, Illinois, USA, August 7-17, 2008.

BOOKS

Sl.No.	Name of Book
1.	PROCEEDINGS OF APSYM 2009

Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.

Name of Participant	Name of Seminar / Conference/ Workshop	Role
Dr.K.Vasudevan	(i) IEEE International Symposium 2008, USA	Session Chair
	(ii) National Symposium on Antennas & Propagation (APSYM2008), DOE, CUSAT	Organization
Dr.P.Mohanan	National Symposium on Antennas & Propagation (APSYM2008), DOE, CUSAT	Organization
Dr.C.K.Aanandan	(i) European Microwave Conference AT Amsterdam, The Netherlands	Paper Presentation
	(ii) National Symposium on Antennas & Propagation (APSYM2008), DOE, CUSAT	Organization

12. Awards/ Honours/ Fellowships etc. received

Name of Recipient	Name of Fellowship/ Honour /Award	Awarding Agency
Prajas John	RFSMS	UGC
Nishamol.M.S.	RFSMS	UGC
Reji.A.P.	RFSMS	UGC
Sreenadh.S.	JRF	KSCSTE
Lindo.A.O.	RFSMS	UGC
Tony.D.	RFSMS	UGC
Deepa Shankar	RFSMS	UGC
Anju.P. Mathews	RFSMS	UGC

**13. Sponsored Research Projects**

SI.No.	Title	Sponsoring Agency	Amount (Rs.in lakhs)	Investigator(s)
1.	Antenna Design fabrication and testing for a pseudorandom polarization hopping (PPA) communication systems	Polarizone Malaysia	7.60	D.P. Mohanan Dr. K.Vasudevan Dr. C.K.Aanandan
2.	Development of an antenna for wireless sensor network.	Polarizone Malaysia	5.00	Dr. P.Mohanan Dr. K.Vasudevan Dr. C.K.Aanandan
3.	Assistance under FIST Programme	DST	59.00	Dr. K.Vasudevan
4.	Thermal, Elastic and Dielectric Properties of New Microwave Substrate Materials	DRDO	28.29	Dr. P.Mohanan Dr. K.Vasudevan Dr. C.K.Aanandan
5.	Development and Analysis of multi-band fractual patch antennas	DST	11.96	Ms. Deepthi Das Krishna
6.	Design and Development of Re-configural Microstrip Antenna for Mobile and Satellite Communication Systems	UGC	5.18	Dr. K.Vasudevan Dr. P.Mohanan Dr. C.K.Aanandan
7.	Development of Autonomous Buoy Systems for Radio Acoustic Positioning and Tracking	DIT	211.89	Dr. P.R.S. Pillai Ms.Supriya.M.H.
8.	Compact dual band dielectric resonator for mobile phone antenna with reduced radiation hazards	KSCSTE	9.79	Dr. P. Mohanan Dr. C.K. Aanandan Dr. K.Vasudevan Dr. M.T Sebastain
9.	DSA Special Assistance Programme	DSA	75.00	Dr. K. Vasudevan Dr.P.Mohanan
10.	Tunable Microwave Materials and Devices based on Photonic band Gas Structures Part 1: Tunable Microwave Devices	DST	29.80	Dr.P. Mohanan Dr.K.Vasudevan Dr.C.K.Aanandan
11.	Compact microwave dielectric resonator antennas for communication applications	DST	15.00	Dr.Jaimon Yohannan
12.	Development of Miniaturised Archival Tags	MOES	95.00	Dr.P.R.S. Pillai Dr.M.H.Supriya
13.	Integrated Smart Antennas for next generation millimeter wave wireless communications	UKIERI	62.75	Dr. C.K. Aanandan



14.	Development and Study of Polymer Composites for Efficient EMI Shielding Property at Microwave Frequencies	DRDO	15.67	Dr. C.K. Aanandan Dr. K.T. Mathew
15.	Design and Simulation of Dielectric-Diplexer	VSSC	8.89	Dr. P. Mohanan Dr. K. Vasudevan Dr. C.K. Aanandan

14. Research Programmes and Activities:

Sl.No.	Problem / Topic	Investigator (s)
1	(i) Design and development of compact DVBH antennas UWB Microwave Imaging for Biomedical Application (breast cancer detection) (ii) Design and Development of microwave tunable devices using BST Ferroelectric thin films (iii) Conductive strips loaded planar antennas for mobile radiation hazards reduction (iv) Microwave ceramic resonators (v) Development of conducting polymer composites for EMI shielding	Dr. K. Vasudevan Dr. P. Mohanan & Dr. C.K. Aanandan
2	(i) Simulation of Rotating Hydrophone arrays and Localisation of the Underwater Targets Using Buoy Systems (ii) Estimation of DOA Using the Buoy System (iii) Classification using Bispectral Features and Neural Networks (iv) Hidden Markov Model Based Underwater Target Classifier	Dr. P.R.S. Pillai Dr. M.H. Supriya
3	(i) ARM9 Based Attendance and Access Control System. (ii) Ethernet Video Monitoring System based on ARM9 Processor. (iii) QVGA TFT LCD Interface. (iv) Robot Status Monitoring System	Mr. James Kurian
4	(i) Streaming audio in on-line biometric security system Audio and Image Processing (i) Biomedical Image Processing (a) Analysis and Content Based Image Retrieval of Scoliosis images (b) Mammogram analysis using fractals for the detection of breast cancer 2. Genomic Signal Processing (a) DNA Image processing (b) Microarray Image Processing 3. (a) Finger Print Recognition and Identification (b) Super resolution	Dr. Tessamma Thomas



15. Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department

Sl.No.	Title	Duration	Coordinator	Funding Agency
1.	National Symposium on Antennas and Propagation (APSYM 2008)	3 days	Dr. K. Vasudevan	DST, AICTE, CSIR, UGC, KSCSTE Etc.

16. Consultancy Work

Sl. No.	Name of Consultancy	Name of Consultant	Sponsoring Agency
1.	Microwave Measurement of PTFE Substrate using ring Resonator method	Dr. K. Vasudevan Dr. P. Mohanan Dr. C.K. Aanandan	C-MET Thrissur
2.	VSWR Measurements, Antenna Radiation Pattern	Dr. K. Vasudevan Dr. P. Mohanan Dr.C.K.Aanandan	Verdent Telemetry, Cochin



DEPARTMENT OF CULTURE AND HERITAGE

The Department was established in 1976 under the name of Foreign Languages. In the year 2003 it was renamed as Department of Culture and Heritage. Besides its earlier concerns with teaching linguistic and literary aspects of languages like English, French, German, Japanese and Russian, the Department now gives thrust to culture as an integral part of language study. During 2006-07, the study of Italian language and culture was introduced with funding from the Italian Government.

One of the extension activities of the Department consists of conducting short term courses in language and culture for institutions and the public on demand. Yet another is consultancy in terms of interpretation and translation. With the emergence of English as a global lingua franca, the teaching of English will be given added importance. To facilitate communication skills in English and other languages a multimedia laboratory has been set up. Two short-term courses of 3 months duration in Communicative English were conducted.

The Department conducts Refresher Course for Italian teachers with the collaboration of Italian Embassy.

1. Programmes of Study/Research

- 1) Certificate Courses in French, German, Japanese and Russian
- 2) Diploma Courses in French, German, Japanese and Russian
- 3) Integrated Diploma Courses in French, German, Italian and Russian
- 4) P.G. Diploma Course in Communicative English
- 5) Ph.D. Programme
- 6) Short-term Courses on the above foreign languages and Communicative English

2. Faculty Members

Sl.No.	Name	Designation	Qualification	Specialisation
1.	Sri.A.Achuta Menon	HOD Sr.Lecturer in German	M.A., PGCTG (German)	German Language and Literature
2.	Smt.Brinda Bala Sreenivasan	Lecturer in English	M.A.(English)	English Language and Literature

3. Visiting Faculty

Sl.No.	Name	Designation	Qualification	Specialisation
1.	Ms.Sara Andreis	Sr.Lecturer in Italian	M.A.	Italian Language and Literature
2.	Prof.K.C.George	Lecturer in French	M.A.	French Language and Literature
3.	Smt.Monica Thomas	Lecturer in English	M.Phil	English Language and Literature



4.	Dr. Mathew Joseph	Lecturer in English	Ph.D.	English Language and Literature
5.	Sukumaran K K	Lecturer in Japanese	B.Tech, Intensive course in Japanese, Supplementary course in Japanese	Group training course on Naval Architecture Ship Building & ship repair held in Japan

4. Research Scholars

SI.No.	Name	Funding Agency	Guide	Area of Work
1.	Devi. S.	Dr.Mariamanna Vincent Panikulangara		The Aesthetics of Anna Akhmatova and Sylvia Plath
2.	Jose Augustine		-do-	Polemics and Culture patterns in the fiction and films of M.T.Vasudevan Nair
4.	Ansy Sebastian		-do-	Aesthetics of Verlaine and Changampuzha

5. Administrative Personnel

SI.No.	Designation	No. of Posts
1.	Peon	1
2.	Library Assistant	1
3.	Selection Grade Assistant	1
4.	Typist (HG)	1

6. Technical Personnel

SI.No.	Designation	No. of Posts
	NIL	

7. Student Enrollment

SI.No.	Programme of Study	Men	Women	Total
1.	Certificate Course in French	28	2	30
2.	Certificate Course in German	27	2	29
3.	Integrated Diploma in Italian	17	1	18
4.	Certificate Course in Japanese	22	1	23
5.	Certificate Course in Russian	3	-	3
7.	P.G. Diploma in Communicative English	6	-	6
8.	Ph.D. Programme	1	2	3

8. Research Facilities

a. Laboratories (List out Major equipments available)

A multimedia Language Laboratory has been set up with 24 positions.



b. Library

No. of books and Journals as on 31 st March of the Previous Year	Additions during the current year
6375	130

c. Journals : 11

9. Distinguished visitors**Sl.No. Name**

1. **Dr. Angela Tressa**, Director, Italian Embassy Cultural Institute, New Delhi
2. **Prof. Angelo Chechuui**, Milan University as Resource Person for the Refresher Course for teachers of Italian

10. Ph.Ds Awarded: NIL

Sl.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
Ph.D. Program started in 2003			

11. Publications

a. Papers

Sl.No. Name of Paper

1. Ideology in Literature, Theatre and Cinema
Dr. Mariamma Vincent Panikulangara

b. Books

Sl.No. Name of Book

1. Perspectives on Comparative Literature and Culture
(Dr. Mariamma Vincent Panikulangara)

12. Participation in Seminar/Conference/Refresher Courses, etc., by Faculty/Students

Name of Participant	Name of Seminar/Conference/Workshop	Role
Dr. Mariamma Vincent Panikulangara	"Perspectives on eco-feminism" - Presented at UGC seminar on eco-feministic & cultural concern "Literature in English 1919 onwards – 7 & 8 January 2009.	Delivered Lecture
A. Achuta Menon	Giving extension lectures as Academic Counsellor to the students of certificate programme in German conducted by Indira Gandhi National Open University & Max Muller Bhavan	Delivered Lecture

13. Awards/Honours/Fellowships, etc., received.

Name of Recipient	Name of Fellowship / Honour / Award	Awarding Agency
NIL		



14. Sponsored Research Projects

Sl.No.	Title	Sponsoring Agency	Amount	Investigator
1.	Malayalam and Konkani Cultures in Contact - Historical and Linguistic Perspectives	UGC	Rs.4,16,000/-	Dr. Mariamma Vincent Panikulangara

15. Research Programmes and Activities

Sl.No.	Problem/Topic	Investigator
Nil		

16. Seminar/Conference/Workshop/Refresher Courses conducted by the Department

Sl.No.	Title	Duration	Coordinator	Funding Agency
1.	Refresher Course for Italian Teachers	5 days	A. Achutha Menon	Italian Embassy

17. Consultancy Work

Sl.No.	Name of Consultancy	Name of Consultant	Sponsoring Agency
1.	Translation and Interpretation of official documents and manuals	Dr. Mariamma Vincent Panikulangara Sri. A. Achuta Menon Ms. Sara Andreis	Institutions and Individuals



DEPARTMENT OF HINDI

The Department of Hindi, established in 1963, is one of the oldest departments of the University. It was a part of the Kerala University and joined the folds of University of Cochin when it was established in the year 1971. From the period of inception it has blossomed into one of the prestigious institutions among Indian University Departments engaged in teaching and research of Hindi Language and Literature.

The Department is actively engaged in research in different areas like Ancient and Modern Poetry, Fiction, Drama and Theatre studies, Criticism, Grammar, Linguistics, Comparative Studies of Languages and Literature, Folk Literature, Translation, Computer Aided Language Teaching etc.

The Department is one of the leading centers of research in Hindi and the faculties have guided about 165 Ph.Ds. The creative capabilities of four of the teaching faculty received the recognition through the award of Fellowships/Prizes. About 150 research papers, hundred books and learned articles have been published by the faculty during the past four years. The Department has completed ten research projects including one on CALT - Computer Aided Language Teaching. The DRS phase I & II have been completed by the Department and IIIrd phase is going on.

The Department Library has about 47000 books and is currently subscribing 56 journals. The PG students and Research Scholars from various parts of Kerala use the Library as a reference centre. It has been assessed as one of the best libraries in the country. The Department has a well-equipped computer laboratory and conducts short term Computer Courses.

The Department organizes national seminars every year and also conducts UGC sponsored programmes.

1. Programmes of Study/Research

1. M.A. Hindi Language and Literature
2. M.Phil
3. P.G. Diploma in Translational and Functional Hindi
4. Ph.D

2. Faculty Members

Sl.No.	Name	Designation	Qualification	Specilisation
1.	Dr. N. Mohanan	Professor & Head	M.A., Ph.D	Modern Literature, Ancient and Modern Literature, Feminist Literature, Dalit Literature, Comparative Literature
2	Dr. A. Aravindakshan	Professor	M.A, Ph.D	Comparative Literature Contemporary Poetry Contemporary Fiction Functional Hindi Official Language Management.



3	Dr. P.A.Shemim Aliyar	Professor	M.A, Ph.D	Modern Drama and Theatre Studies Translation, Comparative Literature, Functional Hindi.
4	Dr. M. Shanmughan	Professor	M.A., Ph.D	Modern Poetry and Fiction
5	Dr. R. Sasidharan	Professor	M.A, Ph.D	Modern Hindi Drama, Comparative Literature, Theatre and Criticism, Translation.
6	Dr. N.G. Devaki	Professor	M.A., Ph.D	Medieval and Modern Poetry, Computer aided Language Learning, Poetics, Functional Hindi, Linguistics, Scientific Translation.
7	Dr. K. Vanaja	Reader	M.A, Ph.D, D. Lit	Criticism Comparative Literature, Modern Literature and Translation studies
8.	Dr.K Ajitha	Reader	M.A, Ph.D	Modern Drama and Theatre Comparative Study

3. Visiting Faculty (If any)

Sl.No.	Name	Designation	Qualification	Specilisation
NIL				

4. Research Staff

Sl.No.	Name	Designation	Qualification	Specilisation
NIL				

5. Research Scholars

Sl.No.	Name	Funding Agency	Guide	Area of Work
1.	Rajgopal G. Pai		Dr. R. Sasidharan	Adhunik Hindi Natya Sameeksha Ka Vishleshanatmak Adhyayan
2.	Deepak K R		Dr. N. Mohanan	Samakalin Narivadi Upanyas: Ek Adhyayan
3.	Kavitha S		Dr. M. Shanmughan	Samakalin Hindi Kavita Mein Sampradayikat - Virodhi Antardhvani
4.	Shiney Kuriakose		Dr. P.A.Shemim Aliyar	Adhunik Hindi Natakomein Dharmik Sadbhavana Ek Vivechan
5.	Preethi V.S		Dr. A.Aravindakshan	Samakaleen Mahila Kahanikarom Ki Kahaniyom Ka Vishleshanatmak Adhyayan
6.	Preetha T.D		Dr. K. Vanaja	Samakaleen Hindi Upanyas Mein Itihasbodh Ka Vishleshan
7.	Beena P.J		Dr. A.Aravindakshan	Adhunik Hindi Kahani Ka Samajasthreeya Adhyayan



8. Sreekala V. R	Dr.R.Sasidharan	Myth and rality in the contemporary Hindi Drama
9. Indu P S	Dr. M.Shanmughan	Samakaleen Upnayasom Ki Paristhithic Sajagata Ka Adhyayan
10. Teena Tomy	Dr. M.Shanmughan	Samakaleen Kahani Mein Sampradayikata Ke Bahuyani Sandarbh
11. Juliya Emmanuel	Dr.A.Aravindakshan	Official Language, Implementation and official Language Management
12. Sreeja A.S	Dr. R. Sasidharan	Swtantryottar Hindi Natokom Mein Pryogdharmita Ke Vividh Aayam.
13. Sheena N.B	Dr.A. Aravindakshan	Samakaleen Hindi Kahani Ka Samaj Shastriya Adhyayan
14. Teena Thomas	Dr. M.Shanmughan	Nava Aupaniveshik Sandarbh Mein Samakaleen Hindi Kahani: Ek Vishleshan
15. Merly K Punnoose	Dr. N. Mohanan	Stri Vimarsh Ke Sandarbh Mein Prabhaketan Ka Upnyas. Ek. Vishleshan
16. Nimmy A.A	Dr. P.A.Shemim Aliyar	Azgar Vazhahat Ki Rachanaom Mein Samajik Chetana: Ek Vishleshnatmak Adhyayan
17. Seema Chandran	Dr. N. Mohanan	Mridula Garg Ka Katha Sahitya Ek Vishleshnatmak Adhyayan
18. Joyce Tom	Dr.M. Shanmughan	Assiyothar Kahani: Avtam ke Sangharsh Ki chethana
19. Aneesh K N	Dr. P. A.Shemim Aliyar	Swatantryottar Hindi Natak Mein Badalte Parivarik Sandharbh
20. Ruby Elsa Jacob	Dr. K Vanaja	Samakaleen Hindi Upanyasam Mein Vishapitom ka Yatharth
21. Pradeep C. P	Dr. P.A. Shemim Aliyar	Adhunik Hindi Upaniyasam mein Aupaniveshik Shakthiyom ka prathirodh
22. Surya L S	Dr. N G Devaki	Hindi Kavyabhasha Kasivaroop Aur Vikas: Ek Eithiasik srvekshan
23. Lovely Varghese	Dr. N G Devaki	Premchand Aur Prasad Ke Kahaniyam ke Sanivad Tatv Ka Visleshnatmak Anusheelan
24. Remya.K R	Dr. N G Devaki	Hindi Ka Yatra Sahitya:
25. Sheena.M.A	Dr. N Mohanan	Bharath Vibhajan Par kendrit Hindi upanyasom ka Vishleshnatmak Adhyayan



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26. Sunitha.T.N	Dr. R.Sasidharan	Narendra Mohan Ka Rachana Sansar
27. Sujithakumari G.S	Dr. P.A Shemim Aliyar	Adhuni Hindi Natak Aur Upanyas Mein Abhiyakt Kalakar Ki Srijanatmakta Ek Anusheelan
28. Anjali.N	Dr. P.A Shemim Aliyar	Hindu Nukkad Natokam ka Samjik Saokar Ek vishleshnatmak Adyayan
29. Kavitha.K	Dr. K Vanaja	Samakaleen Hindi Upanyas Mein Vishwa vidyalay Jeevan ka Vividh Adyayan
30. MayaLakshmi.R	Dr.N.G Devaki	Jayashankar Prasad Aur Mohan Rakesh Ke Natokom ka Tulanatmak Shastriya Anusheelan
31. Veena J	Dr. K. Vanaja	Hindin Ki samakaleen Nareevadi Ek Alochana
32. Shalbi Mohanan	Dr. R Sasidharan	Daya Prakash Sinha ke Natakomein Prayodharmita Ke Vividh adhyayan
33. Nimisha.I.V	Dr.N. Mohanan	Sattothar Hindi Natokomein Lok Natya Ka Prabhav
34. Viji.V	Dr.N. Mohanan	Sanjeev ka Upanyas Ek Vishleshnatmak Ek Adyayan
35. Remya.P.R	Dr.K. Ajitha	Samakleen Kavitha Mein Paristhithik Vimarsh Ek Adhyayan
36. Vineetha.N.A	Dr.K. Ajitha	Nab eke dashak ke kavayathriyayom Ki Kavithavom me Stri vimarsh
37. Jincy Mathai	Dr. K. Ajitha	Harishankar Parsai Aur V.K.N Ke Katha sahitya Mein Vyengaya Ke Vibhinn Aayam
38. V Manju Bhashini	Dr.R Sasidharan	Samakaleen Hindi Upanyas mein Ubhabhoga Sanskrithi
39. Lajja.P.J	Dr. K.Vanaja	Shailesh Matiyani ka Upanyas Sahithya

6. Administrative Personnel

Sl.No.	Designation	No. of Posts
1	Section Officer	1
3	Assistant Librarian	1
4	Assistant	2
5	Typist	2
6	Lab/Library Assistant	1
7	Peon	1
8	Sweeper-cum-Cleaner	1



7. Technical Personnel

Sl.No.	Designation	No. of Posts
NIL		

8. Student Enrollment

Sl.No.	Programme of Study	Men	Women	Total
1	M.A	1	26	27
2	M.Phil	1	7	8
3	P.G. Diploma in Translation and Functional Hindi	1	15	16
4	Ph. D	0	10	10

9. Research Facilities

a. Laboratories	:	Computer Laboratory with 6 terminals
b. Library	:	

No of books and Journals as on 31 st March of the Previous Year	Additions during the current year
Books: 27439+549 (DRS) Journals: 11	Books: - 125_549 (DRS) Journal - 10

c. Others

10. Distinguished visitors

Sl.No.	Name	Affiliation	Remarks
1.	Sukumar Azhikode	Renowned Writer	Delivered Keynote address in connection with Seminar on "Bharathiyatha and Contemporary Malayalam Hindi fiction" held on 23 rd January 2009 in the Department
2	Smt. Chitra Mudgal	Renowned Hindi Writer	Delivered Keynote address in connection with Seminar on "Bharathiyatha and Contemporary Malayalam Hindi fiction" held on 24 th January 2009 in the Department
3	Dr. Shivanarayanan	Editor, Nayi Dhara, Patna	Delivered Keynote address in connection with Seminar on "Bharathiyatha and Contemporary Malayalam Hindi fiction" held on 24 th January 2009 in the Department
4	Dr.Kalanath Misra	Renowned Short story Writer, Patna	Delivered Talk in connection with Seminar on "Bharathiyatha and Contemporary Malayalam Hindi fiction" held on 23 rd January 2009 in the Department
5	Dr. K.M Venugopal	Member, Editorial Board, Bhashabhoshini	Delivered Talk in connection with Seminar on "Bharathiyatha and Contemporary Malayalam Hindi fiction" held on 23 rd January 2009 in the Department



6	KC Narayanan	Editor in Charge Bhashaposhini, Kottayam	Delivered Talk in connection with Seminar on "Bharathiyatha and Contemporary Malayalam Hindi fiction" held on 23 rd January 2009 in the Department.
7	V.M.Vinaya Kumar,	Critic, Malayalam Literature	Delivered Talk in connection with Seminar on "Bharathiyatha and Contemporary Malayalam Hindi fiction" held on 23 rd January 2009 in the Department.
8	Dr. Bajinath Prasad	Punjab University, Chandigarh	Delivered Talk in connection with Seminar on "Bharathiyatha and Contemporary Malayalam Hindi fiction" held on 23 rd January 2009 in the Department
9	Dr. Narayana Raju	Professor & Head, Dhakshin hindi prachar sabha, Ernakulam	Delivered talk to students in the Department
10	Dr. Ravi Ranjan	Central University, Hyderabad	Delivered key note on Trilochan
11	Dr. Sasidhar	Mysore University, Mysore	
12	Dr. Rama Prakash	S.V. University, Tirupati	
13	Dr. Pratibha Mudliyar	Mysore University, Mysore	

11. Ph.Ds Awarded

Sl.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1.	Samakalin Hindi Upanyas Ek Vishleshnatmak Adhyayan	Sanjeev kumar.K	Dr. N. Mohanan
2.	Hindi Ka Dalit Upanyas Ek Vishleshnatmak Adhyayan	Rajan.T.K	Dr. N.Mohanan
3.	Sarveshar Dayal Saxena Ke kavyatar sahitya Mein Samajik chethana	Shalini Jose	Dr. P.A Shemim Aliyar
4.	Adhunik Hindi sahitya Mein yudh jang Sanskrit sankat	Poornima.R	Dr. P.A Shemim Aliyar
5.	Chitra Mudgal Ke Katha sahitya	Geetha.N.P	Dr.R Sasidharan
6.	Nasira Sharma Ka Rachana Sansar	Renjini Krishnan.R	Dr.R.Sasidharan
7.	Samakaleen Hindi Upanyas Mein Anchalekata ke vividh Adhyayan	Anitha.P.L	Dr.K Vanaja

12. Publications

a. Papers

Sl.No.	Name of Paper
Dr. N Mohanan	
1.	Upanivesh Mein Dinkar
2.	Manaveeyata Ke Path Ke sathi



Dr. A. A Aravindakshan

- 1 Hazari Prasad Dwivedi av Culture- Abhinav bharathi- Aligarh
- 2 Rajesh Joshi' poetry - Samajik Meemasa - New Delhi9
- 3 Lyrical Essays of Hazari Prasad Dwivedi - Viswabharati patrika - Santiniketan
- 4 Poetry and folk research - Kriti Aur - Jaipur
- 5 Existence of poetry - Kutubnama - Mumbai

Dr. M. Shanmughan

1. Strivedi Andolan Ke Sandarb me Mahadevi Varma Ke chintan Ki Prasangigata - Anuseelan - CUSAT

Dr. R Sasidharan

- 1 Mahadevi Varma Ki Vedananubhuti (Anuseelan – 2008)
- 2 Jayaprakash Kardani Ki Kahaniyom Mein Dalit Chetana - (Sahityamadul Patrika, 2008)
- 3 Mahan Hunar Ki Kavityayem (Chand Ki Vastari -2009)

Dr. N.G.Devaki

- 1 Manobhavom Ki Chitrakathri Mahadeviji - Anuseelan 2009 - CUSAT

Dr. K. Vanaja

- 1 Mera Parivar Ek Punarpat - Anuseelan - CUSAT
- 2 Urvasi: Manavasakthi Ki Tarafdari - Anuseelan - CUSAT
- 3 Bharatheey Mandirom Ka Sroth Evam Unka Vikas - Rajbhashabharati - New Delhi
- 4 Anuseelan Mahadevi Verma Viseshank 2008 April - Editor
- 5 Anuseelan : Dinkar Viseshank 2009 January - Editor

b. Books

Sl.No. Name of Book

Dr. N. Mohanan

1. Atma Nirvasan Aur Mohan Rakesh Ka Sahitya
2. Alochana ke Aayam

Dr. A. Aravindakshan

- 1 Sahitya Sanskrit aur Bharatiya - Jawahar Pustakalay - Mathurai
- 2 Bharatiya Kathakar Premchand - Anand Prakash - Kolkatta
- 3 Samakaleen Kavita Ki Bharatiyata - Anand Prakash - Kolkatta

Dr.R Sasidharan

Adhunik Hindi Natakam Mein Vyangya

Dr.N.G Devaki

Web of Language : "Random thoughts on its Science and Technology" - CUSAT

Dr. K. Vanaja

Sameeksha ka Sakshya

13. Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.

Name of Participant	Name of Seminar / Conference/ Workshop	Role
Dr. N. Mohanan	1. International Seminar on Ramayana at Pune	Resource Person
	2. National Seminar on Trilochan	Chief Coordinator
	3. National Seminar on Indianness in Contemporary Hindi and Malayalam Fiction at CUSAT	Chief Coordinator



Dr. A. Aravindakshan	Attended 5 seminars	Keynote Address
Dr. Shemim Aliyar	UGC National Seminar	Participant
	1. Pragadisheel Hindi Kavita Aur Trilochan	
	2. Samakaleen Hindi & Malayalam Katha Sahitya Mein Bharateeyata	
Dr. M Shanmughan	1. Seminar on contemporary literature, Govt. Victoria college, Palakkad	Resource person
	2. Seminar on Modern Hindi Literature -conducted by Kerala Language Institute at Calicut	Resource person
Dr. N.G. Devaki	National Seminar 'Rashtra Kavisri Dinkar' University of Calicut during 2-3 February 2009.	Paper Presentation
Dr. R. Sasidharan	1. National Seminar on Premchand and...	Resource person
	2. National Seminar on Hazari Prasad Dwivedi	Resource person
	3. National Seminar on Hindi literature by CUSAT	Participant
	4. National seminar on trilochan by CUSAT	Participant
Dr. K. Vanaja	1. International Seminar on Ramayana at Pune	Resource person
	2. National Seminar on Paristhithivad at S.S.University, Kalady	Resource person
	3. National Seminar on Trilochan at CUSAT	Participant
	4. National Seminar on Indianness in contemporary Hindi and Malayalam fiction at CUSAT	Coordinator
Dr. K Ajitha	1. An Ecological Approach to the contemporary Hindi Literature	Participant
	2. Pragathiseel Hindi Kavitha Aur Trilochan	Participant
	3. Samakaleen Hindi Aur Malayalam Kathasahitya Mein Bharateeyata.	Participant

14. Awards/ Honours/ Fellowships etc. received

Name of Recipient	Name of Fellowship/ Honour /Award	Awarding Agency
Dr. A. Aravindakshan	Gangasaran Award	MHRD- New Delhi

15. Sponsored Research Projects

Sl.No.	Title	Sponsoring Agency	Amount	Investigator(s)
1.	DRS Project on Indianness in Hindi and Malayalam Contemporary Literature	UGC	23,0000/-	Dr. N. Mohanan
2.	Comparative study of contemporary Hindi and Malayalam short Story in context of their creative progress	UGC	5,44,000/-	Dr.M Shanmughan
3.	Women Empowerment as Indian Cultural Legacy with special reference to Hindi Malayalam Poetry	UGC	385200/-	Dr. N.G. Devaki
4.	A Comparative study of Eco-criticism in Contemporary Hindi and Malayalam Novel	UGC	516800/-	Dr. K. Vanaja



16. Research Programmes and Activities:

SI.No.	Problem / Topic	Investigator (s)
1.	DRS III Level Assitance (SAP-UGC) 5 year Project (2007-2012)	Dr.N.Mohanana
2.	Developing ICT materials for upto date teaching and learning process at PG and M.Phil level	Dr. N.G. Devaki
3.	Indianness in Hindi and Malayalam criticism	Dr.R Sasidharan

17. Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department

SI.No.	Title	Duration	Coordinator	Funding Agency
1.	Seminar on Pragativadi Hindi Kavita Aur Trilochan	2 Days	Dr.N.Mohanana, Professor, Department of Hindi	Department of Hindi, CUSAT
2.	UGC National Seminar under DRS on Bharateeyata And Contemporary Malayalam - Hindi Fiction" National Seminar on	3 Days	Dr.N.Mohanana, Professor, Department of Hindi	UGC

18. Consultancy Work

SI. No.	Name of Consultancy	Name of Consultant	Sponsoring Agency
		NIL	



DEPARTMENT OF INSTRUMENTATION

The Department of Instrumentation was established in the year 1995. Though it is a relatively young teaching and research department, it has a long history of evolution as it was derived from the University Science Instrumentation Centre (USIC). USIC was established in the university in 1978 as a service department with assistance from UGC. USIC has been extending instrumentation services to various science and technology departments of the university by way of design and fabrication of experimental gadgets, electronics design and fabrication, glass blowing, carpentry work etc. It has been carrying out consultancy work for other academic institution, R & D the organizations and industries as well. The centre attained the status of an academic department when UGC accorded it the status of level III USIC. The department conducted a post graduate diploma programme in instrumentation for a few years starting from 1994. From 1999 onwards the department is offering four year (8 semesters) B.Tech course in instrumentation.

The department has a very active research programme in the areas of Instrumentation and Applied Physics. The department has implemented several research projects sponsored by external funding agencies like DST, DAE, UGC, AICTE, KSCSTE (Kerala) and TWAS. It has been the venue for national symposia and the faculty members have published several research papers in reputed national and international journals.

1. Programmes of Study/Research : B. Tech & Ph.D. Programmes

2. Faculty Members:

Sl.No.	Name	Designation	Qualification	Specilisation
1	Dr. Jacob Philip	Professor (On deputation)	Ph.D.	Electronics/Applied Physics
2	Dr. K.N. Madhusoodanan	Reader & Head of the Department	Ph.D.	Analytical Instrumentation
3	Dr. Stephen Rodrigues	Reader (On leave)	Ph.D.	Electronics
4	Dr. Johney Isaac	Lecturer	Ph.D.	Applied Electronic
5	Dr. Rajeev Kumar	Lecturer	Ph.D.	Vacuum Technology

3. Visiting Faculty (If any)

Sl.No.	Name	Designation	Qualification	Specilisation
Nil				

4. Research Staff

Sl.No.	Name	Designation	Qualification	Specilisation
Nil				



5. Research Scholars

Sl.No.	Name	Funding Agency	Guide	Area of Work
1.	Reji Kumar R.	PT	Dr. Jacob Philip	Design and development of an instrumentation system to determine the dry rubber content of natural rubber
2.	Benjamin Varghese P	PT	Dr. K.N. Madhusoodanan	Development of fiber optic sensors and their characterization.
3.	Nisha R.	FT	Dr. K.N. Madhusoodanan	Electrical characterization of some semi conductor materials for sensing application
4.	Ginson T.J.	CSIR – JRFFT	Dr. Jacob Philip	Development of bio medical instrumentation system based on E-field sensors.
5.	Satish John	PT	Dr. K.N. Madhusoodanan	Sensing applications of optical fibres

6. Administrative Personnel

Sl.No.	Designation	No. of Posts
1.	Section Officer	1
2.	Assistant	2
3.	Typist	1
4.	Peon	1
5.	Sweeper cum cleaner	1

7. Technical Personnel

Sl.No.	Designation	No. of Posts
1	Technical Officer	1 (with M.Tech)
2	Technical Assistant	2 (with Diploma)

8. Student Enrollment

Sl.No.	Programme of Study	Men	Women	Total
1	B.Tech 2008- Batch	26	2	28
2	Ph.D. 2008	-	2	2

**9. Research Facilities****a. Laboratories (List out Major equipments available)**

Ultrasonic Interfero meter
 Photo Acoustic and Photo Thermal Spectro meter
 He-CD Laser
 Impedance analyzer
 UV-VIS Spectrometer
 Process Trainers
 Lock-in amplifier
 ALD System

b. Library

No of books and Journals as on 31 st March of the Previous Year	Additions during the current year
Books 2878	5
Journals 4	-

c. Others - Nil**10. Distinguished visitors – Nil**

Sl.No.	Name	Affiliation	Remarks
11. Ph.Ds Awarded			

Sl.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1	Thermal transport properties of selected ferroelectrics, mixed valance perovskites and dielectric ceramics using Photo Pyroelectric technique	Manjsha M V	Dr. Jacob Philip

12. Publications**a. Papers****Sl.No. Name of Paper**

- Pulsed Laser Deposition of p-type *a*-AgGaO₂ thin films A S Asha, Dr.K Rajeev Kumar and Mr.M K Jayaraj, "Thin Solid Films", 516 (2008), 1426-1430
- The effect of ZnO buffer layer on structural and optical properties of RF Magnetron sputtered Zn₂GeO₄: Mn²⁺ thin films G.Noop, K Minikrishna, Dr.K Rajeev Kumar and M K Jayaraj, "Journal of Electrochemical Society" 155, issue 10, pp J270 (2008)
- "Simulation studies on the effect of a buffer layer on the external parameters of Hydrogenated amorphous silicon p-i-n solar cells" Dr.K.Rajeev Kumar and M Zemen, "Bulletin of Material Science" 31, No.5, pp737 Oct.2008
- "Design and fabrication of an Atomic Layer Deposition system for the deposition of Al₂O₃ nano layers for MOSFET gate applications" Anu Philip, Dr.Johney Isaac and Dr. K Rajeev Kumar, Journal of Instrument Society of India" 2008 (Accepted)



- 5 "On the adsorption of Aluminium and Methyl groups on silica for TMA/H₂O process in Atomic Layer Deposition of Aluminium Oxide nano layers" Anu Philip and Dr.K Rajeev Kumar, "Bulletin of Meterial Science", 2009 (Accepted)
- 6 "Synthesis of alumina nano particles by Atomic Leyer Deposition and their characterization" Anu Philip and Dr.K Rajeev Kumar, "Power Technology," 2009 (Communicated)
- 7 "Characterization of ZnO Plasma in a radio frequency sputtering system" N V Joshy, Dr. Johney Isaac and M K Jayaraj, "Journal of Applied Physics" Vol.103, P 123305 (2008)
8. "Thermal transport behaviour of 7 AB liquid crystals across phase transmitters" Maju Kuriakose and Dr.K N Madhusoodanan, "Solid State Physics", 53 241, 2008
- 9 Weighing system with ordinalry load cell and a multi mode fiber Benjamin Varghese, Sathish John and Dr.K N Madhusoodanan Journal: Instrument Society of India 39 (1) 65 2009

b. Books - Nil

13. Participation in Seminar/Conference/Refresher Courses etc by Faculty / Students.

Name of Participant	Name of Seminar / Conference/ Workshop	Role
Dr.K Rajeev Kumar	National conference on nonophotonic Materials, Dept. of Physics CUSAT (NCNM – 2008) DST PSSI Interaction meeting on Popularising Plasma Science, Technology & Its Applications in Indian Academic Organizations, 9-10 April 2008 Ahmedabad National Conference on Free Software NCFS '08, Nov.15 -1 6 2008, CUSAT The National Review & Coordination Meeting on Nano science and Nano technology, NSNT 2008, Calcutta, Feb.2009 Orientation Programme, Pondicherry University, August 2008	Presentation
M.V. Majusha	Kerala Science congress 2008 at Trivandrum	Presentation
Viji C	Kerala Science Congress 2008 at Trivandrum	Presentation
Nisha R.	DAE solid state physics symposium 2008 organized by BARC Mumbai	Paper presentation
Maju Kuriakose	DAE solid state physics symposium 2008 organized by BARC Mumbai	Presentation
Anu Philip	National conference on nanophotonic materials (NCNM-08), October 10-12, 2008 at CUSAT	Paper Presentation
Dr.K N Madhusoodanan	UGC Sponsored workshop at the Instrument maintenance facility, Physics Department, Kannur University, Feb.2009 Indian Nano electronics User Programme work shop IISc, Bangalore, April 2009	Invited Presentation Participant



14. Awards/ Honours/ Fellowships etc. received

Name of Recipient	Name of Fellowship/ Honour /Award	Awarding Agency
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15. Sponsored Research Projects

Sl.No.	Title	Sponsoring Agency	Amount	Investigator(s)
1.	“Investigations on the interface trap densities for MOSFET applications” –	AICTE	6.8 lakhs	Dr. K. Rajeev Kumar
2.	Design and Fabrication of a Microwave Plasma....high-K dielectrics deposited by the same	DST	17.8 lakhs	Dr. K. Rajeev Kumar

16. Research Programmes and Activities:

Sl.No.	Problem / Topic	Investigator (s)
1	Sensor Materials and Devices	Dr.K N Madhusoodanan
2	High K nano layers and nano particles	Dr.K Rajeev Kumar
3	Micro Controller and PC based Instrumentation	Dr.Johney Isaac

17. Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department

Sl.No.	Title	Duration	Coordinator	Funding Agency
NIL				

18. Consultancy Work: Nil

Sl. No.	Name of Consultancy	Name of Consultant	Sponsoring Agency
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DEPT. OF MARINE BIOLOGY, MICROBIOLOGY & BIOCHEMISTRY

The Department of Marine Biology Microbiology & Biochemistry is the academic continuation of the original Department of Marine Biology and Fisheries established in 1938 under the University of Travancore. The M.Sc course in Marine Biology was started in 1958. Today the annual intake of students is 20. So far about 577 students have completed the course. The department has 4 Research divisions namely, Marine biology, Microbiology, Biochemistry and Algology (Marine Botany) with well maintained laboratories equipped with sophisticated instruments. At present 60 Research Scholars are working in these labs. In all, 107 Ph.D Degrees have been awarded. Eighteen externally funded research projects have been completed successfully. Major thrust areas of research include, Microbiology, Biochemistry, Fishery Biology, Aquaculture, Fish pathology, Marine pollution monitoring, Marine benthos, Biodiversity and Marine Pharmacology. Further the department has an M.Phil Degree course in Life Science with an intake of 6 students.

1. Programmes of Study/Research

1. M.Sc Marine Biology
2. M.Phil Life Sciences
3. Ph.D in all the areas specified above

2. Faculty Members

SI.No.	Name	Designation	Qualification	Specialisation
1.	Dr.Aneykutty Joseph	Professor	M.F.Sc. Ph.D	Aquaculture
2.	Dr. Babu Philip	Professor	M.Sc. Ph.D	Marine Biochemistry
3.	Dr. A.V. Saramma	Reader	M.Sc .Ph.D	Microbiology
4.	Dr.Mohamed Hatha A.A	Reader	M.Sc. Ph.D	Fish Pathology & Nutrition
5.	Dr.Bijoy S.Nandan	Reader	M.Sc. Ph.D	Ecology & Pollution
6.	Dr. Rosamma Philip	Sr.Lecturer	M.Sc. Ph.D	Marine Microbiology

3. Visiting Faculty (If any)

SI.No.	Name	Designation	Qualification	Specialisation
Nil				

4. Research Staff

SI.No.	Name	Designation	Qualification	Specialisation
1.	Dr.Subhash Babu	Post Doctoral Fellow	M.Sc, Ph.D	Ichthyology
2.	Dr.Soja Louis	-do-	-do-	Marine Biology
3.	Nandini Menon	Principal Investigator	-do-	Marine Biology
4.	Radhika Gopinath	Post Doctoral Fellow	-do-	Mariculture

**5. Research Scholars**

SI.No.	Name	Funding Agency	Guide	Area of Work
1	Sree Renjima.G		Dr.A.A.Mohamed Hatha	Fish eggs and larvae
2	Maya.K		Dr.K.J.Joseph	Biochemical effects of dietary fibres
3	Lathika Cicily Thomas		Dr.S.Bijoy Nandan	Primary production
4	Chaithanya E.R		Dr.Rosamma Philip	Antimicrobial peptides
5	Anu Pavithran		Dr.S.Bijoy Nandan	Intertidal Ecology
6	Ramya K.D		Dr.Rosamma Philip	Microbenthos
7	Jimly C Jacob		Dr.Aneykutty Joseph	Microbenthos
8	Anupama N.S		Dr.K.J.Joseph	Biochemical effects of Aromatic hydrocarbons on <i>Oreochromis mossambicus</i>
9	Thasneem T.A		Dr.S.Bijoy Nandan	Estuarine Ecology
10	A. Deborah Gnana Selvam.A		Dr.A.A.Mohamed Hatha	Bacterial pathogens from paddy cum prawn fields
11	Shyamkumar.S		Dr.A.V.Saramma	Micro algae culture and its biotechnology
12	Naveen Sathyan		Dr.Aneykutty Joseph	Antimicrobial peptides

6. Administrative Personnel

SI.No.	Designation	No. of Posts
1.	Section Officer	1
2.	Selection Grade.Assistant	1
3.	Section Officer (Typist)	1
4.	Peon	1

7. Technical Personnel

SI.No.	Designation	No. of Posts
1.	Technical Assst. Grade III	1
2.	Lab Assistant	1
3.	Lab Attendant	1
4.	Specimen Collector	1

8. Student Enrollment

SI.No.	Programme of Study	Men	Women	Total
1.	M.Sc Marine Biology	6	12	18
2.	M.phil Life Sciences	1	5	6
3.	Ph.D	2	10	12



9. Research Facilities

a. Laboratories (List out Major equipments available)

1	Marine Biology Wet Lab	-	Stereo zoom Microscope (2 Nos)
2	Microbiology Lab	-	Binocular Research Microscope (Olympus) (3 nos.)
3	Biochemistry Lab	-	Nil
4	Instrumentation lab	-	Nil
5	Computer Lab	-	Printer – Laser jet 1020
6	Electron Microscope Lab	-	Spinix Vortex Mixer Spinwin Microcentrifuge
7	Microbiology culture Lab	-	Nil
8	Algology Lab (Marine Botany)	-	Nil
9	Toxicology Lab	-	Nil

b. Library

No of books and Journals as on 31 st March of the Previous Year	Additions during the current year
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c. Others

10. Distinguished visitors

SI.No.	Name	Affiliation	Remarks
NIL			

11. Ph.Ds Awarded

SI.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1.	Haematology of <i>Fenneropenaeus indicus</i> in Response to Environmental Alterations and Microbial Infections	Selven.S	Dr. Rosamma Philip
2.	Nitrifying Bioreactors integrated into shrimp and prawn hatchery systems: Molecular characterization of the nitrifying consortia, reactor kinetics, modeling and validation	Rejish Kumar.V.J	Dr. Rosamma Philip

12. Publications

a. Papers

SI.No.	Name	Name of Paper
Babu Philip		
1.	Babu Philip ,Aniladevi Kunjamma K.P, Smitha.V. Bhanu and Jisha Jose (2008).	Histopathological effects on <i>Oreochromis mossambicus</i> (Tilapia) exposed to Chlorpyrifos, <i>Journal of Environmental Research and Development</i> , Vol 2, No.4.
2.	Babu Philip, Smitha .V. Bhanu, Aniladevi Kunjamma K.P and Jisha Jose.	Effects of ethanol on haematological parameters of <i>Oreochromis mossambicus</i> (Peters), LS-11.



Dr. S. Bijoy Nandan

1. **Bijoy Nandan. S** 2007 Current status and biodiversity modification in the coastal wetland ecosystems of India with objectives for its sustainable management, *Proceedings International Conference on Conserv-Vision, New Zealand*, Pages: 1-24, URL: www.waikato.ac.nz/wfass/conserv-vision. (**Publisher: The University of Waikato, Hamilton, New Zealand**)
2. **Bijoy Nandan. S** and V.K. Unnithan 2007 Ecology of Vembanad lake with special reference to *Macrobrachium rosenbergii*, In: *Advances in Biology, Aquaculture and Marketing*, Part II, P: 748-753, **ISBN: 81-8424- 166-6- BOOK CHAPTER.**(**Publisher: Allied publishers, New Delhi**)
3. **Bijoy Nandan. S** 2007 Ecology and bioresources of the wetland ecosystems on the South West Coast of India with special emphasis to the Ramsar sites, In: *Biodiversity Conservation (eds: M.S. Binoj Kumar and P.K. Gopalakrishnan)*, Vol: viii, p: 220-244, **ISBN 81-7233-489-3 - BOOK CHAPTER.** (**Publisher: Scientific Publishers, Jodhpur, India, Cost: Rs. 500/-**)
4. **Bijoy Nandan. S** 2008 Abundance and diversity of biotic resources in selected wetlands on the south west coast of India In: *Glimpses of Aquatic Biodiversity*, Special Publication No: 7, Page No: 252-269, **ISBN 978-81-907269-6-2.**
5. Subhash Babu K. K and **Bijoy Nandan.S** 2008, Life cycle of *Simocephalus vetulus* (O. F. Müller, 1776) (Branchiopoda:Cladocera: Daphniidae) from a tropical Wetland in Kerala, In: *Compendium on Wetland Biodiversity and Conservation* (eds: S. Bijoy Nandan, M. Salim, Reeni Varghese, G. Somanathan Pillai), pages: 176-183, **ISBN 81-901939-2-9 -BOOK CHAPTER.**
6. **Bijoy Nandan.S** 2008, An appraisal on the ecology, biodiversity and management of the Indian river systems *Proc. Natl. Sem. Envl.Mgt.Sust.Livelihood*, page 49-57. (**Publisher : S.N. College, Cherthala, India**)
7. Subhash Babu K. K and **Bijoy Nandan.S** 2008, Laboratory observations on the Lifecycle of *Moina micrura* Kurz (Crustacea: Branchiopoda: Cladocera), In *Perspectives of Animal Ecology & Reproduction*, (eds: V.K. Gupta and Anil K. Varma), (**in press**) - **BOOK CHAPTER.**
Publisher: Daya Publishers, India)
8. Vijayan .L, Prasad S.N, Muralidharan. S., Somasundaram. S. Dhananjayan. V.. Zaibin. A.P. Jayakumar.R., Pattanaik.C, Jayanthi.P, **Bijoy Nandan. S**, and Rao.S. 2008 Mumbai Trans Harbour Link (MTHL) project: Study of Flamingos and Migratory Birds, **Final Report, SCON**, Coimbatore, P. 147.(**Publisher : Salim Ali Centre for Ornithology and Natural History (SACON), Coimbatore, Ministry MOE&F, India**)
9. **Bijoy Nandan. S** 2009 Environmental stress on plankton and benthic organisms in the coastal ecosystems of south west coast of India, *Ecotoxicology*, (Under publication).(Publisher : Springer, U.S.A)



A. V. Saramma

1. Sincy Joseph and **A.V.Saramma** Antioxidant activity of the Cyanobacterium *Gloeocapsa gelatinosa* against ethanol induced peroxidative damage in Tilapia, *Oreochromis mossambicus* pp 67-76 Paper published in the National Seminar on Bioactive compounds from Marine Organisms, 2008
2. K. Manjusha, **A.V.Saramma** and I.S. Bright Singh Applications of alkaline protease from *Vibrio* sp in the removal of stains from fabric pp.90-95- Paper published in the National Seminar on Bioactive compounds from Marine Organisms, 2008
3. V.K.Jisha and **A.V.Saramma** Stimulation of growth of *Gloeocapsa gelatinosa* by *Bacillus* sp pp96-102 Paper published in the National Seminar on Bioactive compounds from Marine Organisms, 2008
4. Abhilash K.R. and **A.V. Saramma** Extracellular enzymes from Marine Actinomycetes pp103-108 Paper published in the National Seminar on Bioactive compounds from Marine Organisms, 2008
5. B. Nithyaja, V.K. Jisha, R. Tintu, **A.V.Saramma** and V.P.N. Nampoori Kinetics of bacterial colony growth by laser induced Fluorescence, Paper published in the International journal Laser Physics, vol.19, No.3, pp468-472, 2009

Dr. A. A. Mohamed Hatha

1. Abhirosh Chandran, **A.A.M. Hatha** and Sherin Varghese (2008) Increased prevalence of indicator and pathogenic bacteria in Vembanadu lake: A function of salt water regulator along the south west coast of India. **Journal of Water and Health, 6 (4): 539-546** (Journal of International Water Association and WHO)
2. Abhirosh Chandran, **Hatha, A.A.M.**, Sherin Varghese and K. Mony Sheeja (2008) Prevalence of multiple drug resistant *Escherichia coli* serotypes in a tropical estuary, India. **Microbes and Environment 23 (2): 153-158.** (Japanese Society of Microbiology, Japan)
3. Harsha, H.T., Manoj, P and A.A.M. Hatha (2009) Multidrug resistant Salmonella in egg content - An emerging health hazard to unwary consumers. Proceedings of the 21st Kerala Science Congress, Pp. 421-423. **(Best Poster Award under Environmental Science).**
4. Jyothi, S., Abhirosh Chandran and **A.A. M. Hatha** (2009) Survival of indicator and pathogenic bacteria in water and biofilms developed in packaged drinking water stored in PET and glass bottles. Proceedings of the 21st Kerala Science Congress, Pp. 421-423. **(Young Scientist Award under Environmental Science)**
5. Rejith, P.G., Sowmya, M., Jeeva, S.P., Vijith, H and **A.A.M. Hatha** (2009) Ecosystem degradation leading to deterioration of ground water quality of an upland village – A GIS based approach. Proceedings of HADP sponsored National Seminar on Endemic and Endangered species of The Nilgiris. Pp. 34-42.
6. Abhirosh Chandran, **A.A.M. Hatha**, Sherin Varghese and A.P. Thomas (2009) Prevalence and survival of indicator and pathogenic bacteria in water and sediment: A study in Vembanad Lake at Kumarakom region. In: A Compendium on Wetland Biodiversity and Conservation. Pp. 12-20.



7. Rejith, P.G., Sowmya, M., Jeeva, S.P., Vijith, H and **A.A.M. Hatha** (2008) ground water quality of an upland ecosystem as a function of ecosystem degradation. Proceedings of the International Conference on Biodiversity, Conservation and Management. Pp. 245-249.

Dr. Rosamma Philip

- 1 Sreedevi N Kutty and **Philip R.** 2008 Marine Yeast - A Review *Yeast* **25**: 465-483.
- 2 Antony, S.P., **Philip, R.**, 2008. Probiotics in aquaculture. *World Aquaculture Magazine*. 39, 59-63.
- 3 T.P. Sajeevan , **Rosamma Philip** , I.S. Bright Singh 2009 Dose/frequency: A critical factor in the administration of glucan as immunostimulant to Indian white shrimp *Fenneropenaeus indicus* *Aquaculture* 287 248-252
- 4 Antony, S. P., **Philip, R.**, and I. S. B. Singh. 2008. Antimicrobial peptides from tiger prawn, *Penaeus monodon*. Proceedings of the National Seminar on Bioactive compounds from marine organisms. Editors: Menon, N. N., Hatha, A.A.M., Philip, B., and Saramma, A.V. pp. 77-84.
- 5 Kutty, S. N., Damodaran, R., and **Philip, R.** 2008. Hydrolytic enzyme production by marine yeast isolates from the slope sediments of Bay of Bengal. Proceedings of the National Seminar on Bioactive compounds from marine organisms. Editors: Menon, N. N., Hatha, A.A.M., Philip, B., and Saramma, A.V. pp.85-89.
- 6 Pillai, P., Joseph, S.P., and **Philip, R.**, 2008. Marine yeast as source of immunostimulant for *Penaeus monodon*. Proceedings of the National Seminar on Bioactive compounds from marine organisms. Editors: Menon, N. N., Hatha, A.A.M., Philip, B., and Saramma, A.V. pp. 109-116.
- 7 **Rosamma Philip**, Swapna P. Antony, I.S. Bright Singh 2009 .Diagnostics and vaccines in aquaculture. In: Bright Singh i.S ., Joseph V., Philip R., and A. Mohandas (Eds) *Aquaculture and Marine Biotechnology National Centre for Aquatic Animal Health CUSAT, India* P: 50- 64

b. Books

Sl.No.	Name of Book
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13. Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.

Name of Participant	Name of Seminar / Conference/ Workshop	Role
Dr. Aneykutty Joseph	International Conference - Advances in Biosciences: From Darwin to Dolly & Beyond - February 12-14, 2009. Nanded, Maharashtra - Effect of eyestalk ablation on the rematuration of female <i>Macrobrachium rosenbergii</i> (De Man) in captivity.	Paper presentation
	International Conferences on "World Aquaculture - 2008" - May 19 th -23 rd , 2008 Busan -, S.Korea "Reproductive performance of broodstock of <i>Macrobrachium rosenbergii</i> (De Man) in captivity feed with different feeds"	-do-



	National symposium on “Knowledge systems for Ecosystem Management and sustainable development” - National Institute of Ecology, August 26-27, 2008, New Delhi” Ecosystem Management & Reservoir Fisheries Development in Kerala”	-do-
Dr. A.V. Saramma	MECOS,2009 4 th Life Sciences Postgraduate Conference, 18-20 th June 2008, University Sains Malaysia	Participant Presented a paper on Properties of Phosphatase from aquatic bacterium, <i>Flavobacterium breve</i>
Dr. S. Bijoy Nandan	Regional Seminar on Mangroves: Biology, Utilisation and Conservation organized by Dept. of Botany, St. Albert’s College, Cochin held on 6-8 November 2008 at Cochin	Participant
	International Symposium Marine Ecosystems Challenges and Opportunities (MECOS 09) organized by the Marine Biological Association of India, CMFRI at Cochin from 9-12 2009.	-do-
	3rd Bilateral Seminar Italy-Japan on “Physical and chemical impacts on marine organisms- seeking sustainability and post-genomics” , Nagoya, Japan, 24-28 November 2008, organized by the Aichi Prefectural University, Japan, <i>Istituto di Biomedicina e Immunologia Molecolare</i> , Italy, Japan Society for Promotion of Science and UNESCO.	-do-
	Southern Regional Seminar on Integrated Management of Drainage Basins in relation to wise use of Wetlands held on 22 March 2009 on World Water Day at Alappuzha organized by the Karunya University Coimbatore.	-do-
	One day Seminar on Wetland Conservation and Wise Use held in connection with the World Wetlands Day on 2 February 2009, organized by the P.G Department of Zoology, MSM College, Kayamkulam and Dept. of Marine Biology, CUSAT	-do-
	Recent Advances in Veterinary and - Fisheries Science & Biodiversity held on February 12- 14, 2009 at Nagarjuna Nagar, A P organized by the Acharaya Nagarjuna University.	-do-



- National Conference (XXI Annual Conference) on Urban Environment - Present and Future Strategies** held at Bangalore from December 27-29, 2008, organized by the Department of Environmental Science, Bangalore University and National Environmental Science Academy (NESA). -do-
- National Seminar on Action Plan for the Ramsar Sites of Kerala** held from 24-25 March 2008 at Cochin organized by the Rajiv Gandhi Chair, CUSAT. -do-
- International Conference on Biodiversity Conservation and Management (BIOCAM 2008)** held from February 3-6, 2009 at Cochin organized by the Rajiv Gandhi Chair, School of Environmental Sciences, CUSAT, Cochin. -do-
- One Day Workshop on Wetland Biodiversity Conservation** held on 20th February at Punalur organized by the S.N College, Punalur, Kerala. -do-
- National Seminar on Possible Impacts of Sethusamudram project along Kerala Coast**, held on Oct. 18, 2007 at Cochin organized by the Rajiv Gandhi Chair, USAT. -do-
- National Symposium on Knowledge systems for ecosystem Management and sustainable Development**, New Delhi from 26-27 August 2008 organized by the National Institute of Ecology. -do-
- National Environmental Awareness Programme (NEAC 2007-08)** held on 15 January 2008 at Cochin organized by the Centre for Environment and Development (CED), Trivandrum. -do-
- One Day Seminar on Wetland Biodiversity and Conservation** organized by the Dept. of Zoology and Botany, Nangiarkulangara, Haripad on 5th March 2009 at Haripad. -do-
- National Seminar on Wetland Biodiversity (NSWB- 2008)** held at Kayamkulam rganized by the Department of Zoology, M.S. M. College, Kayamkulam from 9- 10 February 2008 -do-
- World Wetlands Day 2008- One Day Seminar on Healthy Wetlands, Healthy people** held at Trivandrum on 2 February -do-



2008, organized by the Centre for Water Resources Development & Management, Government of Kerala.

Seminar on Biodiversity Conservation and Sustainable Development held on 1st March 2008, at Alappuzha organized by the P.G Department of Botany, S.D College, Alappuzha. -do-

Seminar on Action Plan for the Ramsar Sites of Kerala, organized by the Rajiv Gandhi Chair, School of Environmental Studies, Cochin University of Science & Technology on **24 & 25th March, 2008** Organizing Secretary

National Seminar on Wetland Biodiversity (NSWB 2008), organized by MSM College, Kayamkulam in association with LAK, UGC, KSPCB, MOES on **9 & 10 Feb 2008:** *Convenor*

One Day Workshop on Conservation and Management of Vembanad Lake, Kuttanad Vikasana Samithi Kuttanad Conservation Forum, KSPCB, **1 Feb. 2008** Organizing Secretary

International Conference on Biodiversity and Conservation (BIOCAM) organized by Cochin University of Science & Technology, DST, MOE&F, MOES on **3 to 6 Feb. 2008:** Organising Committee Member

Bijoy Nandan. S 2008 *Environmental stress on plankton and benthic organisms in the coastal ecosystems of south west coast of India*, in the *3rd Bilateral Seminar Italy-Japan on "Physical and chemical impacts on marine organisms- seeking sustainability and post-genomics"*, Nagoya, Japan, 24-28 November 2008, organized by the Aichi Prefectural University, Japan, Istituto di Biomedicina e Immunologia Molecolare, Italy, Japan Society for Promotion of Science and UNESCO. Presentation

Bijoy Nandan. S, 2008 *Mangrove Diversity and Ecosystem Services*, in Regional Seminar on Mangroves: Biology, Utilisation and Conservation organised by Dept. of Botany, St. Alberts College, Cochin held on 6-8 November 2008 at Cochin. -do-

Seminar on Wetland Conservation and Wise Use held in connection with the World Wetlands -do-



Day on 2 February 2009, organized by the P.G Dept. of Zoology, MSM College, Kayamkulam and Dept. of Marine Biology, CUSAT.

Bijoy Nandan. S, 2009 *Ecosystem status and rejuvenation measures of the wetlands of south west coast of India*, in Recent Advances in Veterinary and Fisheries Science & Biodiversity held on February 12- 14, 2009 at Nagarjuna Nagar, AP organized by the Acharya Nagarjuna University -do-

Bijoy Nandan. S, 2009 *Wetland in One Day Workshop on Wetland Biodiversity Conservation* held on 20th February at Punalur organized by the S.N College, Punalur, Kerala. *Biodiversity Conservation challenges and prospects*, -do-

Bijoy Nandan. S, 2009 *Environmental and Biodiversity Status of the Wetland Ecosystems of India and ways for rejuvenation*, in International Symposium Marine Ecosystems Challenges and Opportunities (MECOS 09) organized by the Marine Biological Association of India, CMFRI at Cochin from 9-12, 2009. -do-

Bijoy Nandan. S, 2009 *Ecology of the Kayal ecosystems of Kerala in the context of its sustainable Management*, in International Conference on Biodiversity Conservation and Management (BIOCAM 2008) held from February 3-6, 2009 at Cochin organized by the Rajiv Gandhi Chair, CUSAT. -do-

Bijoy Nandan. S, 2008 *Traditional wetland management in Kerala*, in National Symposium on Knowledge systems for ecosystem Management and sustainable Development, New Delhi from 26-27 August 2008 organised by the National Institute of Ecology -do-

Bijoy Nandan. S, 2009 *Issues related to wetland fisheries in South India* in Southern Regional Seminar on Integrated Management of Drainage Basins in relation to wise use of Wetlands held on 22 March 2009 on World Water Day at Alappuzha organized by the Karunya University Coimbatore. -do-

Bijoy Nandan. S, 2008 *Ecology of selected coastal wetland ecosystems of the south west coast of India* in the National Conference (XXI Annual Conference) on Urban Environment – Present and Future Strategies held at Bangalore from December 27-29, 2008,



organized by the Department of Environmental Science, Bangalore University and National Environmental Science Academy (NESA)

Bijoy Nandan. S, 2009 *Conservation and Mangement of Wetlands – Present challenges* in One Day Seminar on Wetland Biodiversity and Conservation organized by the Dept.of Zoology and Botany, Nangiarkulangara, Haripad on 5th March 2009 at Haripad. -do-

Bijoy Nandan. S, 2008 *Wetlands Fisheries for livelihood*, in World Wetlands Day 2008- One Day Seminar on Healthy Wetlands, Healthy people held at Trivandrum on 2 February 2008, organized by the Centre for Water Resources Development & Management, Government of Kerala.

Bijoy Nandan. S, 2008 *Biodiversity Conservation*, in National Environmental Awareness Programme (NEAC 2007-08) held on 15 January 2008 at Cochin organized by the Centre for Environment and Development, Trivandrum

16 January 2008: A presentation was made on the Flora and fauna taxonomy, biodiversity of marine ecosystems. Magroves and Cites and biodiversity conservation for the Coast guard Officers at Coast Guard Officers Head Quarters, Kochi

18th March 2009: A presentation on the topic *Wetland Ecosystem and Services*, was made in the Refresher Course in Life Science held for teachers from 2 to 23 March 2009, organised by Department of Marine Biology, Microbiology and Biochemistry, CUSAT.

7th March 2009: A presentation on the topic *Mangrove Ecology*, was made in the Refresher Course in Life Science held for teachers from 2 to 23 March 2009, organised by Department of Marine Biology, Microbiology and Biochemistry, CUSAT

16 January 2008: A presentation was made on the Flora and fauna taxonomy, biodiversity of marine ecosystems. Mangroves and Cites and biodiversity conservation for the Coast guard Officers at Coast Guard Officers Head Quarters, Kochi

Dr.A.A.Mohammed Hatha International Conference on Biodiversity, Conservation and Management, February 3-6, 2008, Cochin.

Participant



	HADP Sponsored Seminar on Endemic and Endangered Species of the Nilgiris at Govt. Arts College Ooty. 21-22, August 2008	Invited Speaker
	National seminar on Recent trends in biodiversity, conservation and documentation at Mahatma Gandhi Govt. Arts College, Mahe. 6-7 November 2008.	Invited Speaker
	National Seminar on 'Mangroves - biology, utilization and conservation' at St. Alberts College, Ernakulam)	Invited Speaker
	Life Sciences Post Graduate Conference, University Saints Malaysia, Penang, Malaysia. 18-20, June 2008	presented paper
	Kerala Science Congress 2009. January 28-31, 2009, S.N. College, Quilon	Participated. Paper presentation by students
	National Seminar on Aquaculture Diversification - 21-22, October 2008, MES Ponnani College, Ponnani	Invited Speaker
	National Seminar on Environmental Biotechnology - Envirotech 2008 – 21-22 August 2008, S.N. College, Nattika	Invited Speaker
	National Seminar on Application of Biotechnology in Aquaculture – June 20, 2008, S.N. College, Cherthala	Invited Speaker
Dr.Rosamma Philip	International symposium on marine ecosystems challenges and opportunities. 9-12 Feb, 2009. Cochin. p. 11.	Participant

14. Awards/ Honours/ Fellowships etc. received

Name of Recipient	Name of Fellowship/ Honour /Award	Awarding Agency
Dr.S.Bijoy Nandan	RECOGNITION AWARD of the Zoological Society of India for my contributions in the area of wetland science. This was given at the International Conference on Biodiversity and Conservation (BIOCAM 2008) organised by the Cochin University of Science & Technology from Feb. 3-6 2008. The award has a citation, a gold medal, certificate of honour & a memento.	CUSAT
	UNESCO Fellowship – United Nations Fellowship to participate and present a research paper in the 3rd Bilateral Seminar Italy-Japan on	



“Physical and chemical impacts on marine organisms-
seeking sustainability and post-genomics”, Nagoya,
Japan, Amount: US \$ 3700.

UNESCO

15. Sponsored Research Projects

SI.No.	Title	Sponsoring Agency	Amount	Investigator(s)
1.	<i>Agrobiodiversity Enhancement Programme – Study on Benthic Fauna and soil chemistry of selected wetlands in Palakkad, Kerala</i> funded by the CUSAT implementation order No: PL.B2/4072/2009 dtd. 19-5-09,	Kerala State Biodiversity Board	Total Cost : 8.03 lakhs	Dr.S.Bijoy Nandan
2.	<i>Current status on the Biotic Potential in relation to the Environmental quality of the Cochin estuary, India,</i> CUSAT implementation order No: PL.B2/00980/2009 dtd. 22,23-04-09	funded by the Environment Management Authority, Govt. of Kerala.	Total Cost: 12.67,600 lakhs	Dr.S.Bijoy Nandan

16. Research Programmes and Activities:

SI.No.	Problem / Topic	Investigator (s)
1	Antimicrobial peptides from marine biota	Rosamma Philip
2	Microbenthos in the SE and SW coast of India	Rosamma Philip

17. Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department

SI.No.	Title	Duration	Coordinator	Funding Agency
1	Refresher Course	20 days	Dr.A.A.Mohamed Hatha	UGC

18. Consultancy Work

SI. No.	Name of Consultancy	Name of Consultant	Sponsoring Agency
1.	<i>Mumbai Trans Harbour Link (MTHL) project :Study of Flamingos and Migratory Birds: Study on Plankton & Benthos component,</i> funded by Consultancy Cost: Rs 80,000/-.	Dr.S.Bijoy Nandan	Salim Ali Centre for Ornithology and Natural History (SACON), Coimbatore, Ministry of Environment & Forests, India
2.	Consultancy from King Fahd University of Petroleum and Minerals, Saudi Arabia	Dr. A.A. Mohamed Hatha	

**DEPARTMENT OF MARINE GEOLOGY AND GEOPHYSICS**

Earth Science education is enhancing its relevance and scope globally owing to recent advances in geoexploration and the role it has in environmental and development issues. CUSAT is one of the premier Universities in the country to begin a full fledged post graduate programme in Marine Geology in the year 1976 taking into account the global advancement in general and national needs in particular in the field of Marine Sciences. A 3-year M.Sc (Tech.) programme in Marine Geophysics was introduced in 1992 which has now been restructured into a 2-year M.Sc. programme. Both the programmes had been designed to aim at the development of manpower in the fields of Marine Geology and Geophysics with a special emphasis on offshore areas with a view to cater the needs of various research institutions and survey organizations as well as private companies engaged in mineral exploration, sea bed surveys, remote sensing and oil and ground water prospecting. The students of this Department are absorbed as technical personnel in various central, State public sector and private organizations like ONGC, GSI, NIO, NGRI, CGWB, CESS and Universities. Several major research projects funded by external agencies have been undertaken /are in operation in the Department.

1. Programmes of Study/Research :

1. M.Sc Marine Geology
2. M.Sc Marine Geophysics
3. Ph.D

2. Faculty Members

Sl.No.	Name	Designation	Qualification	Specialization
1.	Dr.C.G.Nambiar	Professor	M.Sc. Ph.D	Geochemistry, Mineralogy, petrology
2.	Dr.P.Seralathan	Professor	M.Sc. Ph.D	Marine Geochemistry, Sedimentology
3.	Dr.K.Sajan	Professor	M.Sc. Ph.D	Marine GeologyGeochemistry
4.	Dr.M.Ravisankar	Reader	M.Sc. Ph.D	Optoelectronics & PC- based instrumentation
5.	Dr.K.R.Baiju	Lecturer	M.Sc. Ph.D	Petrology

3. Visiting Faculty (If any)

Sl.No.	Name	Designation	Qualification	Specialization
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4. Research Staff

Sl.No.	Name	Designation	Qualification	Specialization
1	Dr. C.P Priju	Principal Investigator DST-SERC Project -405	M.Sc, Ph.D	Sedimentology, Ground water Geology
2	Dr. N.R.Nisha	Principal Investigator DST-SERC Project-385	M.Sc, Ph.D	Marine Micropaleontology, Paleoceanography



5. Research Scholars (Full time)

Sl.No.	Name	Funding Agency	Guide	Area of work
1	Sreela.S.R	Nil	Dr.K.Sajan	An integrated hydrological study of Bharathapuzha river basin
2	Vinu Prakash	Nil	Dr.A.C.Narayana	Sedimentological and Geo-technical study of Marine Sediment

6. Research Scholars (Part time)

Sl.No.	Name	Funding Agency	Name of Research Guide	Area of work
1	Ambili.V	Nil	Dr. A.C.Narayana	Evolution of Chaliyar River Drainage Basin: Insights from Tectonic Geomorphology
2.	Balakrishnan.P	Nil	Dr. K.T.Damodaran	Hydrogeology & Hydro geochemistry of Periyar River basin of Central Kerala
4	Subeer A	Nil	Dr. A.C Narayana	Sedimentological studies of Coastal Environments
5	Sunil Kumar.V	Nil	Dr. K.Sajan	Geotechnical properties of Sediments
6.	Vinayan V.B	Nil	Dr. P.Seralathan	Hydrogeology, Stratigraphy and Evolution of Kole land Basin Central Kerala
7.	Biju Longhinos	Nil	Dr. C.G.Nambiar	Quaternary deposits along the coastal of Thiruvananthapuram
8.	S.Sakkir	Nil	Dr. K.Sajan	Sedimentology, Geochemistry & groundwater potential of Holocene sediments in parts of low land, Southern Kerala
9	Rekha.R	Nil	Dr. K.Sajan	Biogeochemistry of the mangrove Ecosystems of Southern Kerala, India
10	Vinayachandran.N.	Nil	Dr. A.C.Narayana	Study of Hydrogeology and Hydrochemistry and Modeling of Flow Regime of Watersheds

7. Administrative Personal

Sl.No.	Designation	No. of posts
1.	Section Officer	1
2.	Typist	1 (vacant)
3.	Clerical Assistant	1 (Promoted as Assistant as on 24.12.07)
4.	Assistant	1 (Shifted to the Dept. of Chemical Oceanography vide U.O.No.Ad.A1/153(P)/99(Vol.II) dtd 26.09.2008)
5.	Peon	1



8. Technical Personal

Sl.No.	Designation	No. of posts
1	Technical Assistant	1
2	Laboratory Assistant	1

9. Student Enrollment

Sl. No.	Programme of study	Men	Women	Total
1	II Marine Geology	3	7	10
2	IV Marine Geology	4	1	5
3	II Marine Geophysics	6	4	10
4	IV Marine Geophysics	7	1	8

10. Research Facilities

a). Laboratories (List of major equipments available)

1. X Ray Diffractrometer
2. Differential Thermal Analyser
3. Gravity meter
4. Proton precession Magnetometer (Land)
5. Proton precession magnetometer (Marine)
6. Resistivity meters
7. Echo sounder
8. Sub-bottom profiler
9. Fluxgate magnetometer
10. Petrological Microscope
11. Section Cutting and Grinding Machine
12. Leica Stereoscope Microscope with CCT camera
13. Binocular Microscope
14. Electronic Balances
15. Magnetic Separator

b) Library

No of book and journals/reports as Additions during the current year
31 March of the previous year

NIL

c) Others : NIL

11. Distinguished Visitors

Sl.No	Name	Affiliation	Remarks
	NIL		

**12. Ph.D Awarded**

Sl.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1	Dynamics of Rifting along the Southwest continental margin of India through coherence and process oriented analysis of Gravity data	Sheena.V.Dev	Dr.M.Radhakrishna
2	Geodynamics of the Andaman-Sumatra-Java Trench- ARC System Based on Gravity and Seismotectonic Study	Lasitha.S	Dr.M.Radhakrishna
3	Environment and Climate Changes during the Late Quarternary: Inferences from Sedimentary Records of Southeastern Arabian Sea	Shinu.N.	Dr.A.C.Narayana

13. Publication

Sl. No Name of paper, Authors, Journal Vol. & Pages

- Priju, C.P. and Narayana, A.C. (2009). Coastal Landform changes in and around Cochin and their implications in Coastal Zone Management. In: Coastal Environments - Problems and Perspectives, (Eds) K.S. Jayappa, A.C. Narayana. I. K International Publishing House Pvt. Ltd, New Delhi, pp.108-117
- Narayana, A.C., Jago, C.F., Manojkumar, P. and Tatavarti, R. (2008). Nearshore sediment characteristics and formation of the mudbanks along the Kerala coast, southwest India. Estuarine Coastal and Shelf Science... Vinayachandran. N.
- Nambiar, C.G, Campanile, D, Bishop, P, Widdowson, M., Brown, R. (2008) Sedimentation record in the Konkan-Kerala Basin: implication for the evolution of the Western Ghats and the Western Indian passive margin. Basin Research Vol.20 pp 3-24

b) Books

Sl.No. Name of Book

NIL

14. Participation in Seminar/Conference/Refresher courses etc. by faculty /students

Name of participant	Name of seminar/conference/workshop	Role
NIL		

15. Awards /Honours/Fellowships etc received

Sl. No.	Title	Sponsoring Agency	Amount	Investigator(s)
NIL				

16. Sponsored Research Projects

Sl.No.	Title	Sponsoring Agency	Amount (Rs.)	Investigator(s)
1	Coral Mannar	DST	19.7 Lakhs	Dr. P. Seralathan
2	Burried placers	DOD	8.2 Lakhs	Dr. P. Seralathan & Dr. C.G. Nambiar



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3	Clay	DOD	27.2 Lakhs	Dr. A.C Narayana
4	Estimation of Suspended Sediment concentrations fromVelocity	NRB	49,98,000	Dr.A.C Narayana
5	Hydro - geomorphology and hydrogeology of coastal aquifers of central Kerala: Specialreference to saline water incursion	DST	18.30 Lakhs	Dr. C. P. Priju
6	Benthic foraminiferal and pteropod response Arabian Sea	DST	13,05,000	Dr.N.R.Nisha

17. Research Programmes and Activities

Sl.No.	Problem/topic	Investigator
NIL		

18. Seminar/Conference/Workshop/Refresher Courses conducted by the Department

Sl. No.	Title	Duration	Coordinator	Funding agency
NIL				

19. Consultancy Work

Sl.No.	Name of consultancy	Name of consultant	Sponsoring Agency
NIL			



DEPARTMENT OF MATHEMATICS

The combined Department of Mathematics and Statistics came in to existence in November 1976, with the major objective of developing it to a Centre of Excellence in this region in Mathematical sciences and applications and to provide facilities for training, study and research in these areas. This Department was bifurcated to form an independent Department of Mathematics on 1st January, 1996. The Department conducts two Masters Degree programmes, one in Mathematics and another in Operations Research and Computer Applications, an M.Phil. Programme in Mathematics and Ph.D. programme. The students of the M.Sc. (O.R. and C.A) programme find employment in software development centers and R & D institutions. Students of M.Sc. (Mathematics) generally take up teaching positions or opt for research. The Department has produced about 60 Ph.D.s and has published about 270 research papers in refereed journals. Apart from giving instruction in post graduate courses, the Department has from the very beginning taken the leadership in promoting research in mathematics and its applications, especially in this part of the country. This was realized in a two-fold way one, by guiding young researchers to do their doctoral work and two, by conducting extension programmes which will improve the instruction at the P.G. level in colleges and encourage youngsters to take up research. Thrust areas of research are Stochastic Control theory, Retrial Queues, Mathematical Finance, Graph Theory, Combinatorial Convexity Theory, Algebra, Fuzzy Mathematics, Wavelet Analysis, Operator Theory, Fractal Geometry, Topology, Topological Dynamics and Fluid Mechanics. The department has been receiving a library grant from NBHM since 1991. The department library has about 7500 books and subscribes to 12 Indian and 3 foreign journals, Mathematical Reviews and Mathscinet. Also, the department has been co-ordinating the Mathematical Olympiads and related training programmes for school children with the assistance of NBHM since 1990.

1. Programmes of Study/Research

- (1) M.Sc. Mathematics
- (2) M.Sc. in Operations Research & Computer Applications
- (3) M.Phil Mathematics
- (4) Ph.D.

2. Faculty Members

Sl.No.	Name	Designation	Qualification	Specilisation
1.	Dr.A. Krishnamoorthy	Professor	M.Sc., Ph.D.	Probability Theory, Stochastic Processes, Operations Research
2.	Dr. M. Jathavedan	Professor	M.Sc., Ph.D.	Fluid Mechanics, Non-linear Waves, Differential Equations.
3.	Dr. R.S. Chakravarty	Reader & Head	M.Sc., Ph.D.	Algebra-Ring Theory



4.	Dr. A. Vijayakumar	Reader	M.Sc., Ph.D.	Graph Theory, Convexity Theory
5.	Dr. B.Lakshmy	Reader	M.Sc., Ph.D.	Mathematical Statistics , Stochastic Processes, Operations Research
6.	Dr. M.N.Narayanan Namboodiri	Lecturer	M.Sc., Ph.D.	Functional Analysis, Operator Theory

3. Visiting Faculty (If any)

Sl.No.	Name	Designation	Qualification	Specilisation
NIL				

4. Research Staff

Sl.No.	Name	Designation	Qualification	Specilisation
NIL				

5. Research Scholars

Sl.No.	Name	Funding Agency	Guide	Area of Work
			Part-time	
1.	Seema Varghese	-	Dr. A. Vijayakumar	Problems in Graph Theory & Related Areas
2.	Ratheesh.R	-	Dr. T. Trivikraman	Algebra and Geometry
3.	Robert Victor Edward.J	-	Dr. M.N. Narayanan Namboodiri	Functional Analysis
4.	Sajeev S Nair	-	Dr. A. Krishnamoorthy	Stochastic modeling
5.	Resmi.T	-	Dr. B. Lakshmy	Stochastic modelling
6.	Manju K Menon	-	Dr. A. Vijayakumar	Graph Theory and related topics
7.	Shiny Philip	-	Dr. R.S. Chakravarthy	Some Problems in Topology
8.	Lexy Alexander	-	Dr. M.N. Narayanan Namboodiri	Wavelets on frames and Operator Theory
9.	Resmi Varghese	-	Dr. B. Lakshmy	Stochastic modelling
10.	Ajayakumar C.B	-	Dr. A. Krishnamoorthy	Stochastic modeling Analysis & application
11.	Deepthi C.P	-	Dr. A. Krishnamoorthy	Stochastic modeling & application
12.	Gireesan K.K	-	Dr. T. Trivikraman	Some Problems in Topology Fuzzy Topology & Related Areas
13.	Jaya.S	-	Dr. B. Lakshmy	Stochastic Processes



14. Lakshmy V.P	-	Dr. T. Trivikraman	Problems in topology Fractals & Related Fractals Areas
15. Jayaprasad P.N	-	Dr. T. Trivikraman	Algebra and Geometry
16. Gopakumar.B	-	Dr. A. Krishnamoorthy	Stochastic Modelling
17. Sreenivasan.C	-	Dr. A. Krishnamoorthy	Study of multi commodity inventory system with service time
18. Shinoj K.M	-	Dr. A. Vijayakumar	Some problems in Graph operatrs and graph classes
19. Varghese Jacob	-	Dr. M.N. Narayanan Namboodiri	Toeplitz / Quazi Toeplitz
20. Satheesh Kumar. S	-	Dr. M.N. Narayanan Namboodiri	Acoustic Modelling using Wavelets
21. Bittu L Lambi	-	Dr. M.N. Narayanan Namboodiri	Solution to differential equation using wavelets
22. Susan Mathew Panakkal	-	Dr. M. Jathavedan	Fluid Mechanics
23. Viji.M	-	Dr. R.S. Chakravarthy	Studies on some Non Commutative rings
24. Tresa Mary Chacko	-	Dr. B. Lakshmy	Stochastic modeling analysis & application
25. Lalitha .K	-	Dr. A. Krishnamoorthy	Stochastic Modelling
26. Sathian M.K	-	Dr. A. Krishnamoorthy	Stochastic modeling analysis & application

Full-time

1. Santhosh Kumar Pandey	UGC	Dr. R.S. Chakravarthy	Algebra Geometry & Theories of matter
2. Pramod P.K	UJRF	Dr. A. Krishnamoorthy	Stochastic Modelling
3. Pravas.K	UGC	Dr. A. Vijayakumar	Some problems in graph theory & related topics
4. Tonny K.B	CSIR	Dr.T. Thrivikraman	Some problems in Topology & Related areas
5. Manikandan R	UGC	Dr. A. Krishnamoorthy	Stochastic modeling & analysis
6. Chitra M.R	DAT	Dr. A. Vijayakumar	Some problems in Graph Theory
7. Kiran Kumar V.B	KSCSTE	Dr. M.N. Narayanan Namboodiri	Spectral Theory

**6. Administrative Personnel**

SI.No.	Designation	No. of Posts
1.	Section Officer	1
2.	Selection Grade Assistant	1
3.	Office Superintendent	1
4.	Prof. Assistant Gr.II	1
5.	Peon	1
6.	Sweeper-cum-Cleaner	1

7. Technical Personnel

SI.No.	Designation	No. of Posts
NIL		

8. Student Enrollment

SI.No.	Programme of Study	Men	Women	Total
1.	M.Sc Mathematics	2	28	30
2.	M.Phil (Maths)	2	9	11
3.	Ph.D.	8	1	9

9. Research Facilities**a. Laboratories (List out Major equipments available)****Computer Lab**

More than 20 Computers connected through Local Area Network and all with hi-speed Internet Connectivity. Printers are also made available. Each of the faculty members, office and department library are also provided with computers with hi-speed Internet connectivity. Besides above, there is one lap-top computer, LCD projector, OH Projector etc to support academic activities.

b. Library

No of books and Journals as on 31 st March of the Previous Year	Additions during the current year
7487 books, 28 Journals	261 Books

c. Others

Separate room with furniture and computer with Internet connectivity are given to Research Scholars to support their research activities.

10. Distinguished visitors

SI.No.	Name	Affiliation	Remarks
1.	Prof. D.Rein Nobel	Dept. of OR & Econometrics, Vrije University of Amsterdam, Netherlands	January 2009



2.	Prof. K.B. Athruya	Iowa State University USA	February 2009
3.	Pro. Peter Jagers	Chalmers University of Technology, Goethbergh, Sweden	February 2009
4.	Prof. S.R.S. Varadhan	Courant Institute of Mathematical Sciences	February 2009

In addition several distinguished researchers from abroad and from with India (from TIFR, IISc, IITs, IIMs) visited and gave talk during February 2009.

5.	Prof. R. Balasubramanian	Director, Inst. of Math. Sciences, Chennai	September 2009 for Prof. Abdi Memorial Talk
6.	Prof. S. Arumugam	Director (R & D), Kalasalingam Uty.	August 2009
7.	Prof. Michael Demuth I	Institute of Mathematics, TU Clausthal, Germany	September 2 - 21, 2009

11. Ph.Ds Awarded

Sl.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1.	Studies on some Graph Classes	Aparna Lakshmanan	Dr. A. Vijayakumar
2.	A Study of Closure and Fuzzy Closure Spaces with reference to H-closdness and Convexity	Bloomy Joseph	Dr. T. Trivikraman

12. Publications

a. Papers

Sl.No. Name of Paper

Dr. A Krishnamoorthy, Professor

- Inventory with Service Time and Transfer of Customers and/Inventory, **to appear in Annals of Operations Research, June 2008** (with T.G. Deepak, Viswanath C.Narayanan and K. Vineetha)
- MAP/(PH,PH)/1 Queue with Self-generation of Priorities, to appear in **European Journal of Operations Research 2008** (with S.Babu and Viswanath C.Narayanan)
- On a Queue with Interruptions and Repeat/Resumption of Service, **Accepted for publication in a special issue of the Journal of Nonlinear Analysis(to appear in June 2009)** (with P.K.Pramod and T.G.Deepak)
- On a Queue with search of orbital customers, **to appear in the International Journal of Applied Mathematics** (with T.G.Deepak, V.C.Joshua and Viswanathe C.Narayanan)
- PH/PH/1 Inventory with Service time, Reneging of Customers and Shrtage, **Journal of Neural, Parallel & Scientific Computations** (with K.P.Jose and Viswanath C.Narayanan)
- On a Single Server Feedback Queue with Collision, **Accepted for publication in Computers and Operations Research - Special issue on Retrial Qeueus** (jointly with B.Krishnakumar, Pawai Madheswari and Vijayalakshmi).



Dr. A Vijaykumar, Reader

1. On the median and the anti median of a co graph (with S B Rao) - International Journal of Pure Applied Mathematics , 46, No.5, (2008), 703-710.
2. Equi energetic self complementary graphs (with G. Indulal) - Czech Math.JI, 58, No.133, (2008), 911-919.
3. The edge C_4 graph of a graph (with Manju K Menon), Proceedings of the International Conference on Discrete Mathematics , Ramanujan Mathematical Society, Lecture Notes Series, No: 7 (2008), 245-248.
4. The P_3 intersection graph (with Manju K Menon) - Util. Math., 75 , (2008), 35-50.
5. Clique irreducibility of iterated classes of graphs, (with Aparna Lakshmanan, S.), Discuss. Math. Graph Theory, 28 (2008), 307- 321.
6. The clique graph of a co graph (with Aparna Lakshmanan. S.), Proceedings of the International Conference on Discrete Mathematics, Ramanujan Mathematical Society, Lecture Notes Series, No: 7 (2008), 227-232.
7. A note on energy of some graphs (with G. Indulal) MATCH, Communications in Mathematical and in Computer Chemistry, 59 (2008), 269 – 274. (MR 2008 m 05176).
8. Distance energy of graphs (with G. Indulal, I. Gutman) MATCH, Communications in Mathematical and in Computer Chemistry, 60 (2008), 461-472.
9. On the $\langle t \rangle$ property of some classes of graphs (with Aparna Lakshmanan, S.) Discrete Math. 309 (2009), 259 – 263.

Dr. M.N. Narayanan Namboodiri, Lecturer

1. Szego Limits and Haar Wavelet Basis (With Ramadevi.S) Accepted for publications in the Australian Journal of Math. Analysis and Applications

b. Books

Sl.No. Name of Book

1. **Jathavedan.M** - Two books on Mathematics in Malayalam - in press Mathematics - the queen of all sciences (Chintha Publishers,Thiruvananthapuram) Contemporary Mathematics - Starting from Algebra (Chintha Publishers, Thiruvananthapuram)

13. Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.

Name of Participant	Name of Seminar / Conference/ Workshop	Role
Dr. A. Krishnamoorthy	VI International Workshop on Matrix Analytic Methods, June 11 - 13, 2008, Beijing, China gave a talk, chaired a session and further two papers were presented by coauthors of these papers	Invited Speaker
Dr. A. Krishnamoorthy	IV Conference of International Federation of Nonlinear Analysts, July 2 – 9, 2008, Florida, USA gave an	Invited Speaker



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Dr. A. Krishnamoorthy	VII International Workshop on Retrial Queues, July 17 - 19, 2008, Athens, Greece	Invited Speaker
Dr. A. Krishnamoorthy	Visited General Motors Laboratory at Detroit, July 14, 2009 for discussion	Invited Speaker
Dr. A. Krishnamoorthy	5 National / International Conferences during April 11, 2008 to March 31, 2009	Invited Speaker
Dr. A. Vijayakumar	'Graph Operators' in the Pre Conference Workshop of the International Conference on Discrete Mathematics, University of Mysore, 4 th June 2008.	Invited Speaker
Dr. A. Vijayakumar	Shannon Memorial Lecture , Seminar on Bio Linguistics- (to celebrate the 60 th year of publication of Claude E Shannon's 'A Mathematical theory of Communications'), Centre for Bio Informatics, University of Kerala, Trivandrum, 29 th September 2008.	Invited Speaker
Dr. A. Vijayakumar	Talk on 'The P3 intersection graph', International Conference on Graph Theory and Applications, Amritha ViswaVidya Peedhom, Coimbatore, 11-13, December 2008.	Invited Speaker
Dr. A. Vijayakumar	Talk on 'The P3 intersection graph', International Conference on Graph Theory & Applications, Amritha ViswaVidya Peedhom, Coimbatore, 11-13, December 2008.	Invited Speaker
Dr. A. Vijayakumar	Presented a paper 'Teaching and Learning of Discrete Mathematics- Indian Scenario' TSG-15 of the International Congress on Mathematics Education (ICME -11) , Monterrey, Mexico, July 6-13, 2008	Invited Speaker
Dr. A. Vijayakumar	Workshop on Restructuring UG Education Organised by Higher Education Council at St. Pauls College, Kalamassery July 2, 2008	Inaugural Lecture
Dr. A. Vijayakumar	National Seminar on Discrete Mathematics and Applications, St. Pauls College, Kalamassery August 7, 2008	Resource Person
Dr. A. Vijayakumar	National Seminar on Algebra & Graph Theory at TKM Arts & Science College, Kollam August 6, 2008	Resource Person
Dr. A. Vijayakumar	Workshop on Mathematics Olympiad at Jawahar Navodaya Vidyalayam, Trivandrum September 1, 2008	Inaugural Lecture & Interactive session



Dr. A. Vijayakumar	National Seminar on Graph Theory, OR and Applications at St. Gregorious College, Kottarakkara September 18, 2008	Resource person
Dr. A. Vijayakumar	National Seminar on Coding Theory and Cryptography at S.H. College, Thevara October 17, 2008	Resource Person
Dr. A. Vijayakumar	National Conference on Convexity in Graphs - Recent Developments at S.B. College, Changanassery, November 20, 2008	Resource Person
Dr. A. Vijayakumar	National Seminar at S.S. V. College, Irapuram, November 26, 2008	Resource Person
Dr. A. Vijayakumar	CSIR Programme for Youth Leadership in Science at NIIST, Trivandrum, December 23, 2008	Resource Person
Dr. A. Vijayakumar	Orientation Camp for Higher Secondary School Teachers organized by St. Pauls College, Kalamassery, February 14, 2009	Resource Person
Dr. A. Vijayakumar	National Seminar on Discrete Mathematics at Marthoma College, Thiruvalla, March 25, 2009	Resource Person
Dr. M.N. Narayanan Namboodiri	International Conference on Partial Differential Equations and Spectral Theory, August 31 - September 6, 2008 held at Goslar Germany	Invited Speaker
Dr. M.N. Narayanan Namboodiri	Ramanujan Math Society Conference - Symposium on Mathematical Physics held at ISI Bangalore Centre, May 11 – 13, 2009	Invited Speaker
Dr. M.N. Narayanan Namboodiri	Conference on Analysis and Applications, IISC, Math. Initiative, held at IISC-Maths Department Bangalore May 25 – 27, 2009	Invited Speaker

14. Awards/ Honours/ Fellowships etc. received

Name of Recipient	Name of Fellowship/ Honour /Award	Awarding Agency
NIL		

15. Sponsored Research Projects

Sl.No.	Title	Sponsoring Agency	Amount	Investigator(s)
1.	Queues with Interruption of Service and Repair / Resume of service	General Motors India Science Lab	5 lakhs	Dr. A. Krishnamoorthy

**16. Research Programmes and Activities:**

Sl.No.	Problem / Topic	Investigator (s)
1.	Classical & Retrial queues with self-generation of priorities, Single & Multicommodity Inventory with service time, Vacation to the server and / perishability / pilferage, vacation queueing models and some problems in Reliability, Random walk and Branching processes	Dr. A. Krishnamoorthy
2.	Topological Fluid Mechanics	Dr. M. Jathavedan
3.	Metric Graph Theory, Graph Dynamics, Graph Energy, Graph Classes	Dr. A. Vijayakumar
4.	Algebra & Foundations of Physics	Dr. R.S. Chakravarthy
5.	Multi Commodity inventory Problem	Dr. B. Lakshmy
6.	Collaborative Research work on Spectral Theory and Applications to problems in Mathematical Physics	Dr. M.N. Narayanan Namboodiri & Prof. K.B. Sinha, JNCSR, Bangalore
7.	Collaborative Research on Spectral Theory	Dr. M.N. Narayanan Namboodiri with Prof. Michael Demuth, Technological University of Clausthal Germany

17. Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department

Sl.No.	Title	Duration	Coordinator	Funding Agency
1.	International Symposium on Probability Theory & Stochastic Processes in honour of Professor S.R.S. Varadhan	February 6 - 9, 2009	Dr. A. Krishnamoorthy	UGC, DST, DAE, CSIR, AICTE
2.	Seminar on 'Women in Science - A career in Science'	5 th April 2008	Dr. A. Vijayakumar	Indian Academy of Sciences
3.	National Seminar on Information Theory, CUSAT	9-10, Dec. 2008	Dr. A. Vijayakumar	DRDO, KSCSTE

Merit Evening

OSADMS & the Department of Mathematics organized a 'Merit Evening' on 17th January 2009 to honor the toppers of Regional Mathematics Olympiad- 2008, Ph.D Degree awards of the Department and Winners of OSADMS Quiz competition. Dr. Gangan Prathap, VC, CUSAT was the Chief Guest. 'KSCSTE Cash awards' and Prof. C.S. Venkataraman Memorial Prizes were awarded to the toppers of RMO-2008.

18. Consultancy Work

Sl. No.	Name of Consultancy	Name of Consultant	Sponsoring Agency
	NIL		



DEPARTMENT OF PHYSICS

The present day department of Physics of the Cochin University of Science & Technology first came into existence as the department of Physics of the Ernakulam Centre of the University of Kerala in the year 1962. The department of Physics was founded by Prof. K. Venkateswarlu with a moderate beginning and it gradually grew to a centre of excellence with emphasis on teaching and research. Today the department of Physics is well known within India and abroad for its contribution in teaching and research. During its existence for the last 47 years, it has made rapid strides in the realm of research both in experimental and theoretical physics. The department also has produced innumerable illustrious alumni and are all well placed in different spheres of life all throughout the globe. The department offers post graduate programmes namely M.Sc. (Physics), M.Phil (Physics) and Ph.D. Admissions to these programmes are all through competitive entrance examinations. The department of Physics is also a recipient of generous financial assistance in the form of sponsored projects from various agencies viz. UGC, AICTE, IUCAA, DST, DRDO, CSIR, IUAC, DAE, KSCSTE and others.

The department is ably supported by a team of teaching, non-teaching and technical staff with the full co-operation of students. The faculty members of the department are engaged in active collaborative research with their counterparts at the national and international level. Some of the leading institutions with which they interact are NCL, Pune; NIIST, Trivandrum; Inter University Accelerator Centre, New Delhi; IGCAR, Kalpakam; VSSC, Trivandrum, IUCAA, Pune and others. They also have on going collaborative programmes with faculty members from NTU, Singapore; NUS, Singapore; Rice University, USA; Toyo University, Japan; Tokyo Institute of Technology, Japan; IWATE University, Japan.

Steps are afoot to protect the intellectual property rights of the department. As a first step in this direction, two Indian Patents have been filed. The department intends to be a harbinger for all the changes that is envisaged to occur in the 21st century in the realm of science in general and physics in particular.

1. Programmes of Study / Research

M.Sc., M.Phil. and Ph.D (Full time and Part time).

2. Faculty Members

Sl.No.	Name	Designation	Qualification	Specilisation
1.	Dr.M.Sabir	Professor	M.Sc. Ph.D.	Theoretical Physics
2.	Dr. K.P. Vijayakumar	Professor	M.Sc.; Ph.D	Thin film solar cells Semiconductor studies
3.	Dr.Ramesh Babu T	Professor	Ph.D.	Theoretical Physics
4.	Dr.T.M. Abdul Rasheed	Reader (On leave)	M.Sc.; Ph.D	Laser Spectroscopy of Molecules, Overtone Absorption Spectroscopy, Photo thermal Studies on thin films



5.	Dr.B.Pradeep	Reader	M.Sc., Ph.D.	Thin Film Physics
6.	Dr.M R Anantharaman	Professor	M.Sc., PhD (IIT Bombay)	Experimental Solid state Physics- Nano science and Nanotechnology
7.	Dr.C.Sudha Kartha	Professor	M.Sc.; Ph.D	Holography, Semiconducting thin films
8.	Dr. S. Jayalekshmi	Reader	M.Sc.; Ph.D	Conducting Polymers, Polymer Thin Films, Lithium battery materials.
9.	Dr. M. K.Jayaraj	Reader	M.Sc.; Ph.D	Nano Material Science, Optoelectronic devices.
10.	Dr. L. Godfrey	Professor (Presently PVC, CUSAT.)	M. Sc., Ph. D	Experimental Solid state Physics, Electronic Instrumentation, Astrobiology.
11.	Dr.M.Junaid Bushiri	Reader (On leave)	M.Sc., Ph.D	Electronics
12.	Dr. Titus K. Mathew	Reader	M.Sc, Ph.D	Theoretical Physics

3. Visiting Faculty (If any)

Sl.No.	Name	Designation	Qualification	Specilisation
1	Dr. V.C. Kuriakose	CSIR-Emeritus Professor	Ph.D.	Astro Physics

4. Research Staff

Sl.No.	Name	Designation	Qualification	Specilisation
Nil				

5. Research Scholars

Name	Funding Agency	Guide	Area of work
Amrithesh. M.	Part Time	Dr.S. Jayalekshmi	Synthesis and characterisation of conducting polymer thin films for opto-electronic device applications.
Aneesh.P.M	KSCSTE	Dr.M.K.Jayaraj	Nanomaterials
Angel Susan Cherian	Part Time	Dr.K P Vijayakumar	Strucutral and Optical characterization of absorber and window layers of this film Solar cells
Anita R. Warriier	Part Time	Dr.K.P. Vijayakumar	Characterisation of semiconductor thin films using photothermal deflection spectroscopy.
Anoop P D	Part time	Ramesh Babu T	Bose Einstein condensate
Arun Aravind	UGC RFSMS		Dr.M.K.Jayaraj Magnetic Nanoparticles



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Arun K.J.	Part Time	Dr. S. Jayalekshmi	Growth and characteristics of transparent organic crystals for applications in non linear optics.
E M A Jamal	Part Time	Dr.M.R. Anantharaman	Magnetic and electric properties of normal and inverse spinels in the nano regime
Geetha Pookkat	UGC RFSMS	Dr.M.R. Anantharaman	Magnetic Thin Films.
Hysen Thomas	Part Time	Dr.M.R. Anantharaman	Nano crystallisation studies on metglas films
James K.K.	Teacher with more than 5 yrs. Experience	Dr. M.K. Jayaraj	Transparent conducting oxides
Jeeju P.P.	Part Time	Dr.S.Jayalekshmi	Synthesis of Polymer nano-composites and their characterization
Krishnaprasad P.S	DST	Dr.M.K.Jayaraj	Ferroelectric Devices
Namitha Asokan	RFSMS Full Time	Dr. B. Pradeep	Semiconducting compound thin films.
Nijo Varghese	Full Time	Dr.V C Kuriakose	Gravitation/Cosmology
Nima K.S.		Dr.M.Sabir	Synchronization of Chaos
Poornima.N.		Dr.C.Sudha Kartha	Photoluminescence of thin films
Prijitha R. G.	Part time	Ramesh Babu T	Astrophysics
Priyesh K. V.	Part time	Ramesh Babu T	Quantum Optics
Rajesh C.S.	KSCSTE	Dr.C.Sudha Kartha	Holography
Rajesh Menon M.R.	Full Time	Dr.K P Vijayakumar	Preparation and characterization of Poly Thin films for Solar cell applications
Rajeshmon V.G.	Full Time		
Rajive Tomy	Part Time	Dr. S. Jayalekshmi	
Rakhy Raphael	UGC-CSIR fellow	Dr. M.K. Jayaraj	Dye sensitized solar cells.
Reena Mary A P	Part Time	Dr.M.R. Anantharaman	Magneto optical properties of Ferro fluid thin films
Reena Rajan	UJRF, CUSAT	Dr.B.Pradeep	Metal Oxide thin films
Reshmi. R	DST	Dr.M.K.Jayaraj	Ferroelectric Materials
Sagar S	Part Time	Dr.M.R. Anantharaman	Giant Magneto resistance materials



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Sajimol Augustine	Part Time	Dr.S.Jayalekshmi	Laser Plasma investigations
Sanal K.C.	DST	Dr. M.K. Jayaraj	
Saritha	Applied for regn. Part-time	Dr. M.K. Jayaraj	Plasma Studies
Sasankakumar	Project fellow (not registered)	Dr. M.K. Jayaraj	Plasma Studies
Satish. B.	DRDO Sponsored Scientist	Dr. M.K. Jayaraj	Ferroelectric Materials
Senoy Thomas	CSIR-SRF	Dr.M.R. Anantharaman	Nanostructured amorphous alloys
Shaju K. Y.	Part time	Ramesh Babu T	Astrophysics
Sreeja R	KSCSTE	Dr.M.K.Jayaraj	Non linear optical Studies
Sreekanth J.Varma	UGC	Dr. S. Jayalekshmi	Polymer Nanocomposites
Sreekumar. R.	Part Time	Dr.K.P Vijayakumar	Ion implantation on semiconductor thin films and its characterisation.
Sreeroop S.S.	DRDO Project	Dr.C.Sudha Kartha	Dyedoped photopolymers for optical recording
Sudheer Sebastian	Full Time	Dr.M.Sabir	Control of Chaos
T N Narayanan	CSIR-SRF	Dr.M.R. Anantharaman	Studies on magnetic nano structures
T.H. Sajeesh	Full Time	Dr.K.P Vijayakumar	
Tina Sebastian	DRDO Project	Dr.C.Sudha Kartha	Electrical studies on semi conducting thin film
Tom Thomas	Part Time	Dr.M.R. Anantharaman	Magneto optical properties
V.Pramitha	DRDO Project	Dr.C.Sudha Kartha	High efficient photopolymers for holographic recording
Vanaja K.A.	Part Time	Dr.S.Jayalekshmi	Synthesis and characterization of wide band gap semiconductor oxides
Vasudevan	Teacher	Dr.M.R. Anantharaman	Magneto elastic materials.
Namboodiry M.P.	fellow Part Time		
Veena Gopalan. E.	Part Time	Dr.M.R. Anantharaman	Magneto Caloric Materials
Vijutha Sunny	UGC- RFSMS	Dr.M.R. Anantharaman	Magnetism and nanocomposites
Vimal Kumar T.V.	Full Time	Dr.K.P. Vijayakumar	Solar thermal Energy
Vivek. M.	Full Time	Dr. V.C. Kuriakose	Astrophysics/Astronomy'
Ramkumar. V.	Project Fellow DAE-IREL	Dr.M.R. Anantharaman	Smart Materials.



6. Administrative Personnel

SI.No.	Designation	No. of Posts
1.	Section Officer	1
2.	Assistants	3
3.	Typist/Steno	1
4.	Peon	2
5.	Sweeper-cum-cleaner	1

7. Technical Personnel

SI.No.	Designation	No. of Posts
1.	Technical Officer	2
2.	Store Keeper	1
3.	Lab. Assistants	3
4.	Asst. Librarian	1
5.	Library Asst.	1

8. Student Enrollment

SI.No.	Programme of Study	Men	Women	Total
1.	Ph.D. 2007	7	1	8
2.	M.Phil 2007-08	Nil	8	8
3.	M.Sc. 2007-09	12	12	24

9. Research Facilities

a. Laboratories (List out Major equipments available)

1. Optoelectronic Devices Lab:

- I. Pulsed Laser Deposition Unit
- II. Vacuum unit for laser plasma studies
- III. 4th harmonic Nd:YAG laser (Spectra Physics, Quanta Ray LAB 170 - 10)
- IV. Laser Probe energy meter
- V. RF and DC Cosputtering unit
- VI. RF Sputtering unit
- VII. Electron beam evaporation/Thermal evaporation unit
- VIII. Hydrothermal furnace
- IX. Digital storage oscilloscope
- X. CCD and PMT for plasma studies
- XI. Electroluminescent characterisation setup

2. Major equipments in Magnetics Lab

1. LCR Meter (HP 4285A - 75 KHz to 30 MHz)
2. High Energy Ball Milling Unit P-7 (Fritsch)
3. Lock In Amplifier, (EG & G Instruments DSP Model 7260)



4. Dielectric Cells (For Bulk sample & Thin films) With Necessary Accessories
5. I-V Characterization System, (Keithley Model 487)
6. Dual Trace Analog Oscilloscope, (Philips Model Os-5020p)
7. Digital Real Time Storage Oscilloscope, (Tektronix Model TDS 220)
8. Function Generator, (Tektronix Model CFG 253)
9. Hysteresis Loop Tracer, High Field & Low Field
10. AC plasma polymerization coating unit (Polymer Thin film)
11. A Magneto optics Laboratory complete with vibration free table.
12. RF plasma polymerization coating unit (Polymer Thin film)
13. High Vacuum Metal Coating Unit
14. High Temperature Furnaces (Upto 1600°C)
15. Electronic Balance
16. Ultra Sound Cleaner, Cole Palmer (Model 8610)
17. Electromagnet which can go upto 10000 Gauss
18. Two Port Vector Network analyzer(R&S)
19. Spin Coater(SPI)

3. Major equipments in Thin Film Photovoltaic Division

- Vacuum Coating Unit (IHVP-12)
- Electron Beam Evaporation Unit (BC-300)
- Thermally Stimulated Current Measurement System (IMS-2000)
- Chemical Spray Pyrolysis Units (Automated)
- Chemical Spray Pyrolysis Units (Manual)
- Successive Ionic Layer Adsorption and Reaction (SILAR) set up

4. Major equipments in Applied Optics Division

- Photothermal Deflection (PTD) Spectroscopy
- Low temperature Photoluminescence spectroscopy (PL) Setup
- Light Beam Induced Current (LBIC) Measurement System
- Photoconductivity (PC) Setup
- Liquid Helium cryostat (8 K-300 K)
- Ar⁺ laser (180 mW (488 nm))
- Switchable He-Cd Laser (441 nm and 325 nm)
- Frequency doubled Nd:YAG laser 0-30 mW (532 nm)
- He-Ne lasers 5 mW, 10 mW and 15 mW (633 nm)
- He-Ne Laser 1 mW (543 nm)
- Diode laser 5mW(650 nm)
- Xe Arc Lamp
- Vibration isolation table (TMC)



- Electronic shutter
- Optical power meter
- CCD Camera
- Spin Coating Units
- Soleil-Babinet Compensator
- Lock-in amplifier
- hp LCZ meter
- Vacuum oven
- Hot air oven

5. Major equipments in division of Research in Advanced Materials.

- SPS Spin coater 9Spin 150 wafer spinner)
- Vacuum Evaporation Unit (Indovision BJK 300)
- Muffle furnace (1000°C)
- Furnace with PID and Gas feeding facility (1200°C)
- Hydraulic Pellet Press
- Hot Air Oven
- Vacuum Oven
- Keithley 2400 Source Meter

6. Common facilities :

- 1) X-Ray Diffractometer (Rigaku D-max C).
- 2) UV-Vis-NIR Spectrophotometer (JASCO)
- 3) Flourimeter (Jobin Yuon Horiba).
- 4) Dektak Stylus Profiler.
- 5) Low Temperature I-V Measurement facility.
- 6) Differential Scanning Calorimeter.
- 7) Optical Microscope.

b. Library

No of books and Journals as on 31 st March of the Previous Year		Additions during the current year
Till 31/03/08	13156	54
Till June 2009	13210	
	+ 31 journals	

c. Others



10. Distinguished visitors

Sl.No.	Name	Affiliation	Specialisation/Remarks
1	Prof. Chandra Wickramasinghe	Director, Cardiff Center for Astrobiology, Cardiff, UK.	Inaugurated Astrobiology Laboratory in the Physics Department
2	K.R. Dayas	Director, C-MET.	Inaugurated NCNM-2008 in the Physics department.
3	Dr. Shanthi Bhattacharya	Asst. Professor, Dept. of Electrical Engg, IIT Madras.	Delivered an invited talk.
4	Dr. M.S.R. Rao	Associate Professor, IIT Madras.	Delivered an invited talk.
5	Dr. P. S Anil Kumar	Assistant Professor, Dept. of Physics, IISc Bangalore	Delivered an invited talk.
6	Dr. M. Abdul Khadar	Dept of Physics, University of Kerala	Delivered an invited talk.
7	Prof. C.Vijayan	IIT Madras	Delivered an invited talk.
8	Dr. Raja Ram	Professor, University of Hyderabad.	Delivered an invited talk.
9	Dr. Reji Philip	Associate Professor, RRI Bangalore.	Delivered an invited talk.
10	Dr. P.B. Bisht	Department of Physics, IIT Madras.	Delivered an invited talk.
11	Dr. M.K. Radhakrishnan	NanoRel Singapore.	Delivered an invited talk.
12	Prof. G. Mohan Rao	IISc Bangalore.	Delivered an invited talk.
13	Dr. O.M. Hussain	Sri Venkateswara University, Tirupati.	Delivered an invited talk.
14	Dr. Aldrin Antony	Universitat de Barcelona, Barcelona.	Delivered an invited talk.
15	Dr. Joel Oswalt	Horiba Jobin Yvon, France.	Delivered an invited talk.
16	Dr. L.M. Kukreja	RRCAT, Indore.	Delivered an invited talk.
17	Dr. John Philip	IGCAR	Delivered an invited talk.
18	Dr. Pivin Jean Claude	Centre for Nuclear and Mass Spectrometry, France.	Delivered an invited talk.
19	Dr. Anil. K.	IIT, Bombay	Delivered an invited talk.
20	Prof. K.G. Suresh	IIT, Bombay	Delivered an invited talk.
21	Dr. Shaijumon M.M.	Rice University, Houston, USA.	Delivered an invited talk.
22	Prof. Pulickel M. Ajayan	Rice University, Houston, USA.	



23	Dr. D.K. Avasthi	Inter University Accelerator Centre, New Delhi.	
24	Dr. R. Krishnan	CNRS, France.	
25	Dr. Sreekumar	ISRO, Bangalore.	Delivered an invited talk.
26	Dr. Shashi P. Karna	ARL, US.	
27	Prof. P.P. Divakaran	Chennai Mathematical Institute, Chennai.	Delivered an invited talk.
28	Prof. Joby Joseph	IIT Delhi.	Delivered an invited talk.
29	Prof. Rajendran Raja	FERMI LAB, USA.	Delivered an invited talk.
30	Prof. Gautam Menon	The Institute of Mathematical Sciences, Chennai.	Delivered an invited talk.
31	Prof. T.R. Govindarajan	The Institute of Mathematical Sciences, Chennai.	Delivered an invited talk.
32	Prof. Ajith Kembhavi	IUCAA, Pune.	Delivered an invited talk.
33	Prof. R. Misra	IUCAA, Pune.	Delivered an invited talk.
34	Dr. C.D. Ravikumar	Calicut University.	Delivered an invited talk.
35	Dr. P. Sreekumar	ISRO, Bangalore.	Delivered an invited talk.
36	Prof. P.M.G. Nambissan	Kannur University.	Delivered an invited talk.

11. Ph.Ds Awarded

Sl.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1	Characterisation of transparent conducting thin films grown by pulsed laser deposition and RF magnetron sputtering	Dr. Manoj R	Dr. M. K. Jayaraj
2	Growth and characterisation of radio frequency magnetron sputtered indium tin oxide thin films	Dr. Nisha M	"
3	RF Magnetron sputtered perovskite oxide electrodes for ferroelectric RAM	Dr. Asha A. S	"
4	Optimization of two stage process for the growth of In_2S_3 , CuInSe_2 and $\text{CuIn}(\text{Se}_{1-x}\text{S}_{1-x})$ thin films for solar cell application	Dr. Rahana Yousaf	"
5	Luminescent studies of SrS based phosphors for display applications	Dr. Anila E. I.	"
6	Growth and Characterisation of ZnO based Heterojunction diodes and ZnO based Nanostructures by Pulsed Laser Ablation	Dr. Ajimsha R. S	"
7	Fabrication and Characterization of dye sensitized polymer films for holographic applications	Dr Beena Mary John	Dr C Sudha Kartha



8	Development of solar air heaters and thermal energy storage system for drying applications in food processing industries	A. Sreekumar	Prof. K. P. Vijayakumar
9	Lithium containing complex oxides and phosphates: Investigations on their synthesis and various characterizations for Lithium battery applications	K. Ravindranath (Posthumous)	Dr. S. Jayalekshmi
10	Studies on spatial and temporal solitons with varying dispersion, diffraction and nonlinearity”	Mrs. P. A. Subha	V.C.Kuriakose

12. Publications

a. Papers

SI.No. Name of Paper

- 1 Structural and Electrical properties of $\text{La}_{0.5}\text{Sr}_{0.5}\text{CoO}_3$ thin films by rf magnetron sputtering, A. S. Asha, M. T. Sebastian and M. K. Jayaraj, Journal of Alloys and compounds 449 (1-2), 68 (2008)
- 2 The effect of Mg incorporation on structural and optical properties of $\text{Zn}_2\text{GeO}_4:\text{Mn}^{2+}$ phosphor, G. Anoop, K. Mini Krishna and M. K. Jayaraj, Journal of Electrochemical society 155, J7 (2008)
- 3 Optical and electrical properties of co-sputtered amorphous zinc indium tin oxide, K. J. Saji and M. K. Jayaraj, Thin solid films 516, 6002(2008)
- 4 Pulsed Laser Deposition of p-type $\alpha\text{-AgGaO}_2$ thin films. K. A. Vanaja, R. S. Ajmsha, A. S. Asha, K. Rajeev Kumar and M. K. Jayaraj, Thin Solid Films 516 (7), 1426 (2008)
- 5 Influence of dopant source on structural and optical properties of Mn doped ZnGa_2O_4 thin films, G. Anoop, K. Mini Krishna and M. K. Jayaraj, Applied Physics A: Materials Science and Processing 90, 711 (2008)
- 6 Electrical Characteristics of n-ZnO/p-Si Heterojunction Diodes Grown by Pulsed Laser Deposition at Different Oxygen Pressures, R. S. Ajimsha, M. K. Jayaraj, and L. M. Kukreja, Journal of Electronic Materials 37(5), 770 (2008)
- 7 Synthesis of highly luminescent, bio-compatible ZnO quantum dots doped with Na, B. Vineetha, K. Manzoor, R. S. Ajimsha, P. M. Aneesh and M. K. Jayaraj, Synthesis and Reactivity in Inorganic, Metal-organic and Nano-metal Chemistry 38, 126 (2008)
- 8 Effect of Oxygen intercalation on the properties of sputtered CuYO_2 for potential use as p-type transparent conducting films, R. Manoj, M. Nisha, K.A. Vanaja, M.K. Jayaraj, Bulletin of Materials Science 31(1), 49 (2008)
- 9 Effect of oxygen partial pressure on optical and electrical properties of co-sputtered amorphous zinc indium tin oxide thin films, K. J. Saji and M. K. Jayaraj, Physica Status Solidi: A 205(7), 1625 (2008)
- 10 The effect of ZnO buffer layer on structural and optical properties of RF magnetron sputtered $\text{Zn}_2\text{GeO}_4:\text{Mn}^{2+}$ thin films, G. Anoop, K. Mini Krishna, K. Rajeev Kumar and M. K. Jayaraj, Journal of Electrochemical society 155(10), J270 (2008)



- 11 Optical and electrical properties of amorphous zinc tin oxide thin films examined for thin film transistor application, M. K. Jayaraj, K. J. Saji, K. Nomura, T. Kamiya and H. Hosono, *Journal of Vacuum Science and Technology B: Microelectronics and Nanometer structures*, 26(2), 495 (2008)
- 12 Characterization of ZnO plasma in a radio frequency sputtering system, N. V. Joshy, Johny Isaac and M. K. Jayaraj, *Journal of Applied Physics* 103, 123305(2008)
- 13 Photoluminescence of SrS:Cu nanophosphor, E. I. Anila, Arun Aravind and M. K. Jayaraj, *Nanotechnology* 19, 145604 (2008)
- 14 Optical and carrier transport properties of co-sputtered multicomponent amorphous oxide, Zn-In-Sn-O, films and their application to thin film transistor, K. J. Saji, M. K. Jayaraj, K. Nomura, T. Kamiya and H. Hosono, *Journal of Electrochemical society* 155(6), H390 (2008)
- 15 Influence of RF power and fluorine doping on the properties of sputtered ITO thin films, M. Nisha and M. K. Jayaraj, *Applied Surface Science*, 255 (5 PART 1), pp. 1790-1795 (2008)
- 16 Structural and optical properties of $Zn_{1-x}Mg_xO$ films grown by pulsed laser deposition, Krishnaprasad P. S., Ragitha E. K., Jayaraj M. K., *Proc. SPIE Vol. 7067*, 70670E1 (2008)
- 17 Luminescence from surfactant free ZnO quantum dots prepared by laser ablation in liquids, R. S. Ajimsha, G. Anoop, Arun Aravind and M. K. Jayaraj, *Electrochemical and Solid State Letters* 11(2), K14 (2008)
- 18 Spatial and Temporal Studies of Laser Ablated ZnO Plasma, N. V. Joshy, K. J. Saji and M. K. Jayaraj, *Journal of Applied Physics*, 104, 053307 (2008)
- 19 Determination of third-order optical absorptive nonlinearity of ZnO nanoparticles by Z-scan technique, R. Sreeja, R. Reshmi, Manu George and M. K. Jayaraj, *Proceedings of SPIE - The International Society for Optical Engineering* 7155, art. no. 715521 (2008)
- 20 P-AgCoO₂/n-ZnO heterojunction diode grown by rf magnetron sputtering, K. A. Vanaja, U. M. Bhatta, R. S. Ajimsha, S. Jayalekshmi and M. K. Jayaraj, *Bulletin of Materials Science* 31 (5), pp. 753-758 (2008)
- 21 Hydrothermal synthesis and characterization of undoped and Eu doped ZnGa₂O₄ nanoparticles, P. M. Aneesh, K. Mini Krishna and M. K. Jayaraj, *Journal of Electrochemical society* 156(3), K33 (2009)
- 22 $Mg_{1.96-1.96x}Zn_{1.96x}GeO_4:Mn_{0.04}$ phosphors for electroluminescent display applications, G. Anoop, K. Mini Krishna and M. K. Jayaraj, *Journal of Alloys and Compounds* 468, 512 (2009)
- 23 Formulation of statistical mechanics for chaotic systems, Vishnu M Bannur and Ramesh Babu Thayyullathil, *Pramana – Journal of Physics*, Vol.72 (2009) pp 315-323.
- 24 Multiphoton processes in Atomic Hydrogen and Dalgarno-Lewis method, Ramesh Babu Thayyullathil and R. Radhakrishnan, *Advances in Atomic, Molecular and Optical Science*, Edited by E. Krishnakumar, (Allied Publishers Pvt.Ltd, New Delhi, 2008) pp 74-88, ISBN: 978-81-8424-341-3.
- 25 Enhanced Microwave absorption in Nickel filled Multiwall Carbon Nanotubes in the S band. T N Narayanan, Vijutha Sunny, M M Shaijumon, P M Ajayan, and M R Anantharaman, (*Electrochem. Solid State Lett.* 12 (4), K21-K24)



- 26 Carbon nanotube-iron oxide composite produced by filling multiwall carbon nanotubes with aqueous ferrofluid. T. N. Narayanan, A. P. Reena Mary, M. M. Shaijumon, L. Ci, P. M. Ajayan, and M. R. Anantharaman (*Nanotechnology* 20, 055607)
- 27 Synthesis of nickel-rubber nanocomposites and evaluation of their dielectric properties Muhammad Abdul Jamal, E., Joy, P.A., Kurian, P., Anantharaman, M.R. (*Materials Science and Engineering B: Solid-State Materials for Advanced Technology* 156 (1-3), pp. 24-31)
- 28 Swift heavy ion induced surface modification for tailoring coercivity in Fe–Ni based amorphous thin films. Senoy Thomas, Hysen Thomas, D. K. Avasthi, A. Tripathi, R. V. Ramanujan, and M. R. Anantharaman (*J. Appl. Phys.* 105, 033910).
- 29 Surface evolution of amorphous nanocolumns of Fe–Ni grown by oblique angle deposition Senoy Thomas, S. H. Al-Harhi, R. V. Ramanujan, Zhao Bangchuan, Liu Yan, Wang Lan, and M. R. Anantharaman (*Appl. Phys. Lett.* 94, 063110)
- 30 On the dielectric dispersion and absorption in nano sized manganese zinc mixed ferrites. Veena Gopalan, E., Sakthi Kumar, D, Yoshida, Y, I A Al-Omari, Malini, K.A., Saravanan, S. and Anantharaman, M.R. (*J. Phys. Condensed Matter. In Press*)
- 31 Cure Characteristics and Mechanical Properties of Rubber Ferrite Composites Based on Nano-Nickel Ferrites. (*Journal of Applied Polymer Science, In press*)
- 32 Microstructure and random magnetic anisotropy in Fe-Ni based nanocrystalline thin films. Senoy Thomas, S H Al-Harhi, D Sakthikumar, I A Al-Omari, R V Ramanujan, Yasuhiko Yoshida and M R Anantharaman (*J.Phys. D. Appl. Phys.* 41, 155009)
- 33 Spectroscopic and photoluminescence studies on optically transparent magnetic nanocomposites based on sol-gel glass: Fe₃O₄. Senoy Thomas, D Sakthikumar, Yasuhiko Yoshida and M R Anantharaman, *Journal of Nanoparticle research* 10, pp. 203-206
- 34 Size-dependent surface plasmon resonance in silver silica nanocomposites Senoy Thomas, Saritha K Nair, E Muhammad Abdul Jamal, S H Al-Harhi, Manoj Raama Varma and M R Anantharaman, *Nanotechnology* 19, pp. 075710.
- 35 On the crystallization kinetics and micro-structural transformations of Fe₄₀Ni₃₈B₁₈Mo₄ alloys Thomas Hysen, Thomas Senoy, R. V. Ramanujan and M. R. Anantharaman, *Journal of Materials Science Vol. 43, Number 2, pp. 635-640.*
- 36 Enhanced Shape anisotropy and magneto optical birefringence by high energy ball milling in NixFe1-xFe2O4 ferrofluids, S.Swapna Nair, Francis Xavier, P A Joy, S D Kulkarni and M R Anantharaman, *Journal of Magnetism and Magnetic Materials*, 320, pp. 815-820.
- 37 Studies on the optical band gap and cluster size of the polyaniline thin films irradiated with swift heavy ions, S Saravanan, M R Anantharaman, S. Venkatachalam, D K Avasthi, *Vacuum* 82 pp. 56-60.
- 38 An optical limiter based on ferrofluids, Swapna S Nair, Jinto Thomas, C S Suchand Sandeep, M R Anantharamn, and Reji Philip, *Applied Physics Letters* 92, pp. 171908.
- 39 Physicomechanical and Magnetic properties of Neoprene based rubber composites, K H Pra, Philip Kurian, P A Joy, M R Anantharaman; *Polymer Plastics Technology and Engineering* 47, pp. 137-146.em
- 40 Permittivity characteristics on the X and S band frequencies of microwave absorbers based on rubber ferrite composites, *Journal of Elastomers and Plastics* 40, 331-346



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Blue shift and intensity enhancement in visible emission spectrum of c-axis oriented spray pyrolytically grown nanocrystalline ZnO thin films.
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Raman and infrared spectral studies of $[C(NH_2)_{3,2}M^{11}(H_2O)_4(SO_4)_2]$, $M^{11} = Mn, Cd$ and VO.
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(b) Seminar/ Conference presentations

1. Duration of Star Formation in h and chi Persei, Astronomical Society of India Meeting, Feb 18-20, Bangalore, Bhavya B, Blesson Mathew, Annapurni Subramaniam & V C Kuriakose
2. Phase effects on synchronization by dynamical relaying in delay-coupled systems 5th National Conference on Nonlinear Systems and Dynamics, March 7-9, 2009 Kolkata, Chitra R N and V C Kuriakose
3. Effect of Sealing on the diffraction efficiency of an Acrylamide based photopolymer K.P. Nimmi, V. Pramitha, K.Sreekumar, C.Sudha Kartha, Rani Joseph, International Conference on Advances in Polymer Technology, Cochin University of Science and Technology, Cochin, 25-27 Sep 2008, pp 109
4. Peristrophic Multiplexing in a Methylene Blue Doped Acrylamide Polymer, Pramitha. V, Nimmi. K. P, Subramanyan. N. V, Rani Joseph, Sreekumar. K, Sudha Kartha. C, PHOTONICS 2008, 15-17 Dec 2008, IIT Delhi, New Delhi page no: 387
5. Characterization of a Methylene Blue sensitized Poly (vinyl alcohol)/Acrylamide Photopolymer for Holographic Data Storage, Pramitha. V, Nimmi. K. P, Rani Joseph, Sreekumar. K, Sudha Kartha. C, NLS 08, LASTEC, New Delhi, 7-10 Jan 2009, page no: 51
6. Highly Efficient Silver Doped Acrylamide Photopolymer For Holographic Applications, Pramitha. V, Rani Joseph, Sudha Kartha. C, 21st Kerala Science Congress, 28-31 Jan 2009, Kollam, Kerala, page no: 309-311



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8. Fluorescence studies on Eosin doped PVA matrix for Tunable Solid State Dye Lasers, N. Poornima, R. Jayakrishnan, Beena Mary John, V. Pramitha, C. Sudha Kartha, 20th AGM, Feb 10-12, 2009, MRSI, Kolkata, India, page: 116
9. Holographic lens recorded in Eosin sensitized acrylamide based photopolymer, N. V. Subramanyan, C. S. Rajesh, V. Pramitha, S. S. Sree Roop, Rani Joseph, K. Sreekumar and C. Sudha Kartha, International Conference on trends in Optics and Photonics, ICONTOP 2009, March 1-4, 2009, Kolkata, India
10. Analysis of the dark J-V characteristics of Indium Sulfide/Poly (3-hexylthiophene) heterojunction, M. R. Rajesh Menon, C. Sudha Kartha and K. P. Vijayakumar, NCSMT-2008, Haridwar, October 2008.
11. Spray pyrolysed ZnO thin films: Effect of variation of molarity and spray rate, T. V. Vimal kumar, C. Sudha Kartha and K. P. Vijayakumar, NCSMT-2008, Haridwar, October 2008.
12. Structural and optoelectronic properties of spray pyrolysed SnS thin films and fabrication of thin film solar cells using it, T. H. Sajeesh, C. Sudha Kartha and K. P. Vijayakumar; Kerala Science Congress, Kollam, January, 2009.
13. Development of thin film solar cells using SnS as the absorber layer, T. H. Sajeesh, C. Sudha Kartha and K. P. Vijayakumar, MRSI-AGM 2009, Kolkata, February, 2009.
14. Spray pyrolysed ZnO thin films doped with Al diffusion-preparation and characterization, T. V. Vimalkumar, C. Sudha Kartha and K. P. Vijayakumar, 17th National Symposium on Ultrasonics (NSU XVII), Varanasi, December, 2008
15. Doping of ZnO thin films deposited using spray pyrolysis-preparation and characterization T. V. Vimalkumar, C. Sudha Kartha and K. P. Vijayakumar, MRSI-AGM 2009, Kolkata, February, 2009.
16. Influence of selenium flux on the stoichiometry of silver selenide thin film V. Arun and B. Pradeep Proc. of the National Seminar on Advances in Materials Science, February 4-5, 2008, Manonmaniam Sundaranar University, Tirunelveli, Tamil Nadu, NSAMS-2008, p.68
17. Preparation of Aluminium oxide thin films using activated reactive evaporation Reena Rajan, V. Arun and B. Pradeep Proc. of the National Seminar on Advances in Materials Science, February 4-5, 2008, Manonmaniam Sundaranar University, Tirunelveli, Tamil Nadu, NSAMS-2008, p.139
18. Structural and optical characterization of In₂O₃ thin films prepared by activated reactive evaporation technique Reena Rajan, V. Arun and B. Pradeep Proceedings of the National Conference on Nanophotonic Materials- 2008, Dept. of Physics, CUSAT, Kochi-22, p-41-42.
19. Preparation and Characterization of CuS thin films (Oral presentation) Saji SK and B. Pradeep Proc. of the National Seminar on Photonic Materials (NSPM2009), February 26-28, 2009, Dept. of Optoelectronics, University of Kerala, Thiruvananthapuram-695 581. p.49

c. Books : NIL

**13. Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.**

Name of Participant	Name of Seminar / Conference/ Workshop	Role
Dr. M .K. Jayaraj	National Seminar on Nanoscience and Technology (NSNST-'09)	Invited talk
	National review and co-ordination meeting-'09	Oral presentation
	IUMRS International Conference in Asia 2008 (IUMRS-ICA 2008), Nagoya, Japan	Invited talk
	National Conference, Pondicherry University, Pondicherry	Invited talk
	International conference on solar cells, Cochin, 2008	Invited Talk
Mr. Aneesh P M	Cochin Nano - '09	Poster Presentation
	2 nd International conference Bangalore Nano - 08, Bangalore, India	Poster Presentation
Ms. Sreeja R	Cochin Nano - '09	Poster Presentation
	Photonics 2008, Delhi, India	Poster Presentation
Mr. Arun Aravind	National review and co-ordination meeting-'09	Participant
	2 nd International conference Bangalore Nano- 08, Bangalore, India	Poster presentation
	Cochin Nano - '09	Participant
	International Seminar on Mathematical & Experimental Physics", PSGRK College, Coimbatore, India	Oral presentation
Mr. Saji K J	International conference on solar cells, Cochin, 2008	Oral presentation
	National conference on New Horizons in Theoretical and Experimental Physics, Kochi, 2007	Oral presentation
Mr. Satish B	National Conference on MEMS and nanotechnology,PSG College of Technology, Coimbatore - 2009	Participant
Mr. Senoy Thomas	Second International Conference on Frontiers in Nanoscience and Technology (Cochin Nano-2009). Jan 3-6, 2009, Cochin, India	Poster
	National conference on nano photonic materials (NCNM 2008) Cochin University of Science and Technology, Kochi Oct 10-12 2008.	Oral
	International conference on magnetic materials and their applications for 21 st century (MMA-21). Delhi Oct 21-23 2008	Poster



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Mr. Narayanan T N	Second International Conference on Frontiers in Nanoscience and Technology (Cochin Nano-2009). Jan 3-6, 2009, Cochin, India International conference on magnetic materials and their applications for 21 st century (MMA-21). Delhi Oct 21-23 2008	Poster oral
Ms. Vijutha Sunny	Second International Conference on Frontiers in Nanoscience and Technology (Cochin Nano-2009). Jan 3-6, 2009, Cochin, India International conference on for magnetic materials and their applications 21 st century (MMA-21). Delhi Oct 21-23 2008	Poster poster
Ms. Reena Mary A P	Second International Conference on Frontiers in Nanoscience and Technology (Cochin Nano-2009). Jan 3-6, 2009, Cochin, India International conference on magnetic materials and their applications for 21 st century (MMA-21). Delhi Oct 21-23 2008	Poster poster
Ms. Veena Gopalan	Second International Conference on Frontiers in Nanoscience and Technology (Cochin Nano-2009). Jan 3-6, 2009, Cochin, India International conference on magnetic materials and their applications for 21 st century (MMA-21). Delhi Oct 21-23 2008	Poster poster
Mr. E M A Jamal	Second International Conference on Frontiers in Nanoscience and Technology (Cochin Nano-2009). Jan 3-6, 2009, Cochin, India	Poster
Prof. M R Anantharaman	“Ion beam assisted surface modification in Fe-Ni amorphous thin films”. Indo-French Conference on Nano structuring by Ion Beams, Bhubaneswar (Feb.26-Mar.1, 2009). Attended the third Indo-US workshop held at National Institute of Advanced Studies, Bangalore, March 4 - 5, 2009, chaired one session. Attended the International Conference on Tissue Engineering at Amrita Institute of Medical Science, Cochin, Feb 17 - 19, 2009. Delivered an invited talk at the National Seminar on Materials Sciences, University of Calicut, Calicut. March 27, 2009. Delivered an invited talk at the National Seminar on Nanotechnology, Fatima Mata College, March 23, 2009.	Invited speaker Invited speaker Invited speaker Invited speaker



	Delivered an invited talk at the TPSC seminar at Pollachy, March 19, 2009. Attended the 22 nd International Conference on Nano Science & Nano Technology - COCHIN NANO 2009 - January 3 - 6, 2009, Co-ordinator and Organiser.	Invited speaker
Dr C Sudha Kartha	<ol style="list-style-type: none">1. National Conference on Nano Photonic Materials -2008, Cochin, India, 10-12 October 20082. Cochin Nano 2009,3-6 January 2009, Cochin3. National Laser symposium (NLS 08)- New Delhi , 7-10 January 20094. National Conference on Emerging Areas in thin film Science & Technology Feb 12-14 2009,Coimbatore5. DAE Solid State Physics Symposium BARC, Mumbai, DEC 16-20th 2008	Organizing committee Session chair Organizing committee Delegate Delegate Delegate
Ms. Pramitha V	<ol style="list-style-type: none">1. International conference on Advances in Polymer Technology Cochin 25-27 September 20082. PHOTONICS-2008,15-17 December 2008, New Delhi3. National Laser symposium (NLS 08) - New Delhi , 7-10 January 2009	Delegate Delegate Delegate
Mr. Sree Roop SS	IConTOP Kolkata, March 1-4,2009	Delegate
Mr. Subramanyan N V	<ol style="list-style-type: none">1. IConTOP Kolkata March 1-4,20092. PHOTONICS-2008,15-17 December 2008,New Delhi.	Delegate Delegate
Prof. K.P. Vijayakumar	<ol style="list-style-type: none">1. IMRC, Cancun, Mexico2. DAE-Solid State Physics Symposium, Dec.16-20, 2008, Mumbai.	Invited Speaker Delegate
Mr. T. V. Vimalkumar	<ol style="list-style-type: none">1. National Conference on Semiconductor Materials and Technology, Oct.16-18, 2008,Haridwar2. MRSI-AGM 2009 (Feb.10-12, 2009), Kolkata,	Delegate
Mr. Rajesh Menon M.R	National Conference on Semiconductor Materials and Technology, Oct.16-18, 2008, Haridwar	Delegate



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Mr. Sajeesh T. H	1. Kerala Science Congress, 2009 2. MRSI-AGM 2009 (Feb.10-12, 2009), Kolkata	Delegate
Mr. Rajeshmon V. G	1. MRSI-AGM 2009 (Feb.10-12, 2009), Kolkata	Delegate
Dr. S. Jayalekshmi	Cochin-nano 2009	Organising Committee Member
Mr. Sreekanth J Varma	Cochin-nano 2009	Paper presentation
Mr. Anil Kumar. K.M	Cochin-nano 2009	Paper presentation
Mr. Jeeju.P.P	Cochin-nano 2009	Author, Participant
Mr. Amrithesh.M	Cochin-nano 2009	Co-author
Dr. Titus K. Mathew	Cochin-nano 2009 National Conference on Solar Cells	Participant Participant
Dr. L. Godfrey	SPIE conference (August 2008) in San Diego, California, USA	Author, Session Chair and Program committee member
Dr. V.C. Kuriakose	Workshop on light induced waveguides and their applications to nanophotonics, Dece.7-9, 2008, Sastra Univ. Tnajavore International Workshop on Experimental Gravity Jan. 5-9, 2009, Organized by TIFR at Kochi National Seminar on Astrophysics and Astronomy Feb.24, 2009, Carmel College,Mala. National Science Day Celebrations Feb, 27, 2009, SPAP, MG University, Kottayam Seminar on Astronomy, Gravity and Beyond Einstein March 6-7, 2009, CUSAT, Kochi TPSC Workshop on Recent Advancements in Theoretical Physics and Quantum Computation. March17-19, 2009, Pollachi. TPSC Seminar, March 20, 2009, Dept. of Physics, Pondicherry University, Pondicherry.	Invited talk Invited talk Invited talk Invited Talk Invited talk Invited talk Invited talk
Vivek. M.	IGO Users Meeting, July 22-23, 2008. IUCAA, Pune. South African Large Telescope Science Meeting, Nov.3-4, 2008 IUCAA, Pune. X-ray Astronomy School. Feb 2-8, 2009, IUCAA, Pune.	Presentation Participant Participant



Bhavya. B.	Kodai School on "Synthesis of elements in Stars" April 29 - May 13, 2008 Kodaikanal.	Participant
	Astronomical Society of India Meeting 2009 Feb 18-20, 2009, Bangalore.	Contributed paper
Dr. B. Pradeep	International conference on solar cells (IC SOLACE 2008) Jan 21-23, 2008, Dept. of Physics, CUSAT.	Participant
	National Conference on Nanophotonic Materials NCNM 2008, October 10-12, 2008, CUSAT.	Participant
Dr. M. Junaid Bushiri	Vibrational Spectroscopic Studies on Nanostructured Materials. National Seminar- All Saints College, TVM, 13-14 August 2008.	Participant
	Spray Pyrolysis as a nano- crystalline film growth technique. National Seminar - Fathima Mata National College, Kollam, 23-25 March 2009.	Participant.

14. Awards/ Honours/ Fellowships etc. received

- 1 Third best poster presentation award in the Second International Conference on Frontiers in Nanoscience and Technology (Cochin Nano-2009). Jan 3-6, 2009, Cochin, India, to Senoy Thomas, Magnetism Lab.
- 2 Second best oral presentation award in the National conference on Nano Photonic Materials (NCNM 2008) Cochin University of Science and Technology, Kochi Oct 10-12, 2008, to Senoy Thomas, Magnetism Lab.
- 3 Best poster presentation award in magnetism in the Second International Conference on Frontiers in Nanoscience and Technology (Cochin Nano-2009). Jan 3-6, 2009, Cochin, India, to Veena Gopalan.E, Magnetism Lab.
- 4 Dr. Beena Mary John. National Laser Symposium -08 –Best Thesis Award (2009). Laser Science and Technology Centre, Delhi, Board of Research in Nuclear Sciences, Department of Atomic Energy, Indian Laser Association.

15. Sponsored Research Projects

Sl.No.	Title	Sponsoring Agency	Amount	Investigator(s)
1	Growth and characterization of nanostructured materials and its applications.(2009-2012)	Department of Science and Technology Nano centre initiative program	3.3 Crores	Dr. M. K. Jayaraj
2	Improvement of optical transmission characteristics of Tokamak optical windows	Board For Research In Fusion Science and Technology (BRFST) (2009-2011)	6.28 lakhs	"
3	Nanophosphors for flat panel displays and quantum well structures grown by pulsed laser deposition technique (2006-2009) extn 2010	Department of Science and Technology Nano centre initiative program	77 lakhs	Dr. M. K. Jayaraj



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4	Pulsed Laser Deposition of PZT & PLZT thin films (completed)	NPOL/CARS project	5 lakhs	
5.	Development of Smart Rheological Elastomers Based on Rare Earth Magnets.	Indian Rare Earths Ltd.	36.745 Lakhs	Prof.M.R. Anantharaman
6	Study on Eosin dye sensitized polymers for holographic applications	KSCSTE	5.36 Lakh	Dr.C Sudha Kartha, Dr. Rani Joseph & Dr.K. Sreekumar
7	Development of highly efficient photopolymers films for holographic applications	IRDE DRDO	40.12 Lakh	Dr.C Sudha Kartha, Dr.Rani Joseph & Dr.K. Sreekumar
8	Electrical characterization of semiconducting thin films using photoconductivity & Thermally stimulated Current Measurements	DRDO	37.6 Lakh (completed)	Dr.C.Sudha Kartha, Dr.K.P Vijayakumar
9	Development of novel photorefractive Polymers for optical recording	DST	23.87 Lakh (completed)	Dr.C.Sudha Kartha, Dr.Rani Joseph & Dr.K. Sreekumar
10	Studies on Cu/In & Cu/Al based Cd free thin film solar cell	DST (completed)	Rs.24,00,000	Prof. K. P. Vijayakumar & C. Sudha Kartha
11	Synthesis and characterization of carbon nanotube polymer composite films of polyaniline & polypyrrole as anodic materials in polymer light emitting diode	UGC (on going - April 2007 to March 2010)	9,07,767/-	Dr. S.Jayalekshmi
12	Optimization of synthesis conditions of sol-gel technique for preparing nano-structured lifepo ₄ cathode materials with excellent electrochemical performance	ISRO/VSSC on going - (June 2008 - 2009 December)	9,50,000/-	Dr. S.Jayalekshmi
13	Popularising the Keralas Contribution on Astronomy.	KSCSTE	150000/-	Dr. Titus K. Mathew
14	Fluxon Dynamics in Josephson Junctions and its implementation to Quantum Computing.	DRDO	7,12,800/-	Dr. V.C.Kuriakose & Ramesh Babu.T. Ramesh Babu.T. Chitra R. Nayak (PF)
15	Black holes, information loss and Entanglement.	UGC	786600/-	Dr. V.C.Kuriakose & Ramesh Babu.T R. Tharanath (PF)



- 16 A Comparative study of KSCSTE 979000/- Dr. B. Pradeep
optical and electrical characterization
of silver selenide thin films and
silver selenide thin films doped with
rare earth metal, for fabrication of solar cells.

16. Research Programmes and Activities:

SI.No.	Problem / Topic	Investigator (s)
1	Nanostructured materials	Dr. M. K. Jayaraj
2	Ferroelectric materials	"
3	Electroluminescent Devices	"
4	Transparent conducting oxides	"
5	Photovoltaic Materials	"
6	Plasma Studies	"
7	Nano materials and devices	Dr. S. Jayalekshmi, Dr. M.K.Jayaraj
8	New cathode materials for rechargeable Lithium battery applications	Dr. S. Jayalekshmi, Dr. M.K.Jayaraj
9	Polymer based Optoelectronic devices	Dr. S. Jayalekshmi, Dr. M.K.Jayaraj
10	Josephson Junctions	Dr.V.C. Kuriakose (F) Chitra R. Nayak (RS)
11	Astronomical Image Processing	Dr.V.C. Kuriakose (F) Vivek M (RS) Bhavya. B. (RS)
13	Physics of Black Holes	Dr.V.C. Kuriakose (F) P.I. Kuriakose (RS) R. Sini (RS)Nijo Varghese (RS)

17. Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department

SI.No.	Title	Duration	Coordinator	Funding Agency
1	National Conference on Nanophotonic Materials 2008	October 10 -12, 2008	Dr. M. K. Jayaraj	SPIE
2	Second International Conference on Frontiers in Nanoscience and Technology, COCHIN NANO 2009.	January 2-6, 2009	Prof.M.R. Anantharaman	CSIR, DST, ICMR, AICTE, KSCSTE, DRDO, INSA.

18. Consultancy Work

SI. No.	Name of Consultancy	Name of Consultant	Sponsoring Agency
1.	Trial deposition of CuInS_2 thin films on metal sheets	Prof. K. P. Vijayakumar	Corus Research Development and Technology, The Netherlands
2.	Development of device quality transparent conducting oxide thinfilms using chemical spray pyrolysis technique for photovoltaic applications: A trial	Prof. K. P. Vijayakumar	Hind High Vacuum Pvt. Ltd., Bangalore



DEPARTMENT OF PHYSICAL OCEANOGRAPHY

Oceanography is a subject of past, recent and future, aimed at exploring the horizons of knowledge pertaining to the hydro environment of this planet – as we also attempt to search extra terrestrial bodies, probing for H₂O. As a course designed for graduates, teaching and research commenced way back 44 years in erstwhile Kerala University (in 1965) and evolved to mature into a full-fledged program of this department. The master's program now covers topics on air-sea interaction, coastal and estuarine oceanography, coastal zone management, sea-state analysis, modeling, environmental oceanography, ocean remote sensing, ocean impact assessment etc. Placements are at NIO, CESS, NPOL, NIOT, IISc, IIT, SAC, NRSA and so on, while some find positions abroad and private. The M. Tech. Ocean Technology program further supports in-depth studies in such frontier areas of Oceanography like acoustics, dynamics, coastal structures, instrumentation and so on, aimed to mould skilled candidates in this realm. The department also gives emphasis to doctoral programs in the thrust areas of oceanography and the recent awardees have theses in the topics like pollution routing, estuarine waste load allocation, coastal zone management and GIS, open ocean processes and so on.

This department has a dedicated lifeline of highly qualified decorated scientists and researchers serving the nation in varied capacities. Also, time in and out, valued projects from DoES, DST, MHRD, AICTE, MEF and UGC have been executed by the faculty attached to this department. Members have often associated themselves with international bodies/scientists & teachers from foreign countries in their pursuit for academic excellence. A number of students have qualified the NET - CSIR - UGC test to secure positions in national laboratories/institutions. The department houses sophisticated instruments like ocean current meters, automatic sedimentation analyzer, bathythermograph, echo sounder, tide cum wave gauges, ship borne data acquisition systems, CTD etc.

1. Programmes of Study/Research

- a. M.Sc Oceanography
- b. M Tech Ocean Technology
- c. Ph.D Programme in Oceanography

2. Faculty Members

Sl. No.	Name	Designation	Qualification	Specialisation
1	Dr.A.N.Balchand	Professor & Head	M.Sc (Cochin) Ph.D (Cochin)	Environmental Oceanography
2	Dr. R Sajeev	Reader	M. Sc (Cochin) Ph.D (Cochin)	Coastal Oceanography
3	Sri P K Saji	Lecturer	M.Sc. (Cochin)	Ocean Atmosphere Interaction

**3. Visiting Faculty (If any)**

Sl.No.	Name	Designation	Qualification	Specilisation
1.	Dr. K. Ajith Joseph	Guest Lecturer, Research Director, NERCI	M.Sc Ph.D.	Ocean Dynamics
2.	Dr. K. Ravindran	Guest LecturerRetd. Director of CIFT	Ph. D,D. Sc	Material Technology
3	Dr T K Sivasdas	Guest Lecturer, Retd. Scientist CIFT	Ph. D	Ocean Instrumentation

Contract Lecturers

Sl.No.	Name	Qualification	Specialization
1	Dr Benny N Peter	Ph.D.	Polar Oceanography
2	Dr K Rasheed	Ph.D.	EIA
3	Dr K M Santosh	Ph.D.	Remote Sensing
4	Dr K Kerala Varma	Ph.D.	Estuarine Oceanography

4. Research Staff

Sl.No.	Name	Designation	Qualification	Specilisation
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5. Research Scholars

Sl.No.	Name	Funding Agency	Guide	Area of Work
1	Rajesh.G	National Institute of Ocean Technology	Dr.R.Sajeev	Wave studies
2	Jossia Joseph.K.	Part Time- National Institute of Ocean Technology	Dr.A.N.Balchand	Ocean Response to Atmospheric Forcing
3	Thara.K.J	DPO, full time	Dr.R.Sajeev	Physical state of oceans and impacts on marine fisheries.
4	Smitha B R	CMLRE, MoES	Dr R Sajeev	Coastal Upwelling systems in the north Indian Ocean with special reference to south west coast of India
5	Vimalkumar K G	Fugro Survey India, Bombay	Dr R Sajeev	Mesoscale processes in Arabian Sea and Bay of Bengal
6	Saji P K	Faculty Member	Dr. A N Balchand	Air-sea Interaction
7	Maya Pai	Part Time - Amrita Vidya Peedom	Dr.A.N.Balchand	Maritime Climatology
8	Ch.V.Chiranjivi Jayaram (Professional)	DPO, CUSAT	Dr.A.N.Balchand	Ocean Remote Sensing



6. Administrative Personnel

SI.No.	Designation	No. of Posts
1	Section Officer (Higher Grade)	1
2	Selection Grade Assistant	1
3	Sel.Gr. Typist/Stenographer	1
4	Peon	

7. Technical Personnel

SI.No.	Designation	No. of Posts
1	Vacant	1

8. Student Enrollment

SI.No.	Programme of Study	Men	Women	Total
1	M.Sc Oceanography II Sem	9	3	12
2	M.Sc Oceanography IV Sem	7	3	10
3	M Tech Ocean Technology II	5	1	6

9. Research Facilities

a. Laboratories (List out Major equipments available)

- Ocean current meter
- Salinometer and bathy thermograph
- Electronic balance
- Marine navigation system g.p.s.receiver
- Digital water analyzer
- U V visible spectrometer
- Lux Meter
- Current meter
- 3 D ACM Current Meter
- Van Dorn Water Samplers
- Portable Echo Sounder
- Wave Cum Tide Guage
- Dumpy Level
- GPS
- CTD

b. Library - Please see details available under School of Marine Sciences

No of books and Journals as on 31 st March of the Previous Year	Additions during the current year
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c. Others

Computer Laboratory equipped for Modelling and Remote Sensing Ocean Applications

**10. Distinguished visitors**

SI.No.	Name	Affiliation	Remarks
1	Dr K.Ramesh Kumar	Sr.Scientist NIO, Dona Paula, Goa	Lecture talk
2	Dr Ola M Johannessen	Founding Director, NERSC, Norway	Dedicated Discussion

11. Ph.Ds Awarded

SI.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1	Pollution Routing in a Tropical Estuarine Environment	Smt M G SREEDEVI	Dr. A N Balchand

12. Publications**a. Papers – journal and conference**

SI.No.	Name of Paper
1.	Chandramohan, T., B. Venkatesh and A. N. Balchand , 2008. Application of water erosion prediction project (WEPP) for the simulation of discharge and sediment yield from small watersheds, Proceedings of the National Conference on Advances in Civil Engineering (ACE 08), 9 - 10 March, Bhatkal, 124 - 127.
2.	K. Ajith Joseph, T. Thejna and A. N. Balchand , 2007. Studies on the seasonal variability of Chlorophyll-a concentration and SST in the Eastern Arabian Sea using satellite imageries. JOURNAL OF MARINE AND ATMOSPHERIC RESEARCH, 42 - 51.
3.	K.J. Thara, Phiros shah and R.Sajeev , Response of oil sardine of Kerala with special reference to extreme oceanographic events. Paper presented in the International Symposium "Marine Ecosystems Challenges and Opportunities" (MECOS 09) 9-12 February 2009 Cochin, India
4.	Phiros shah, K.J. Thara, R.Sajeev , An upwelling front along the north Malabar Zone (SW Coast of India) during July 1995. Paper presented in the National Conference of Ocean Society of India - OSICON '09 Recent developments in Ocean science, engineering and technology. March 19-21, 2009 Andhra University, Visakhapatnam
5.	Jose K. Xavier & R.Sajeev Groundwater Pollution Caused by Soil Leaching of Anionic Surfactants from surface waters A model approach. Paper submitted to the National Seminar on Aquatic Chemistry AQUASEM '09-Recent developments in water chemistry with specific reference to water resources and Management. March 26-28, 2009 at CUSAT
6.	Benny N. Peter, D. Ambe and S. Imawaki (2008) . Eulerian sea surface velocity field of south Indian Ocean derived by combining satellite altimeter and drifter data. Reports of Research Institute of Applied Mechanics, Kyushu University, 117, 123-126.
7.	Benny N. Peter (2009) . Variability of surface circulation of south Indian Ocean derived by combining drifter and satellite observations. 9 th International Conference on South Hemisphere Oceanography and Meteorology, 9-13 February, 2009.

b. Books

SI.No.	Name of Book
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**13. Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.**

Name of Participant	Name of Seminar / Conference/ Workshop	Role
R Sajeev	Second Ocean Society of India National Workshop on Perspectives on Ocean Sciences, Engineering & Technology in India, March 24, 2008 at NIO, Goa.	Participant
	Workshop on Energy security, low carbon vista - India's Options. Organised by the Association of British Scholars - India, Kochi Chapter at CMFRI Auditorium Kochi, 29 th March 2008.	Participant
	First Argo User's workshop in National level at INCOIS during 20-22 July 2008. INCOIS, Hyderabad.	Participant
	International Symposium "Marine Ecosystems Challenges and Opportunities" (MECOS 09) 9-12 February 2009 Cochin, India.	Paper presentation
	Attended and presented a paper in the National Conference of Ocean Society of India - OSICON '09 Recent developments in Ocean science, engineering and technology. March 19-21, 2009 Andhra University, Visakhapatnam.	Paper presentation
	Attended and submitted an abstract in the National Seminar on Aquatic Chemistry AQUASEM '09 Recent developments in water chemistry with specific reference to water resources and Management. March 26-28, 2009 at CUSAT.	Paper presentation
K Rasheed	K S C 2009	Participant
Benny N Peter	1. 9 th International Conference on South Hemisphere Oceanography and Meteorology, 9-13 February, 2009, Australia	Paper Presentation
	2. SARAL - CNES Altika workshop held at SAC Ahmadabad, 22-24 April, 2009	Participation

14. Awards/ Honours/ Fellowships etc. received

Name of Recipient	Name of Fellowship/ Honour /Award	Awarding Agency
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15. Sponsored Research Projects

Sl.No.	Title	Sponsoring Agency	AmountRs lakhs	Investigator(s)
1	DYNAMICS OF THE COASTAL WATERS OF SOUTH WEST COAST OF INDIA AND ITS IMPACTS ON FISHERIES	INCOIS	27.00	Dr R Sajeev



2	SYNERGISTIC APPLICATION OF SCATTEROMETER AND OCM DATA FROM OCEANSAT-II FOR THE STUDIES OF COASTAL UPWELLING IN THE SW COAST OF INDIA	DOS	10.20	Dr K Ajith Joseph and Dr A N Balchand (Multi- institutional)
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16. Research Programmes and Activities:

SI.No.	Problem / Topic	Investigator (s)
1	Coastal Zone Management	A N Balchand
2	Coastal Oceanography	R Sajeev
3	Ocean Air Interaction	P K Saji
4	Ocean Circulation	Benny N Peter
5	Estuarine Oceanography	K Rasheed
6	Ocean Remote Sensing	K M Santosh

17. Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department

SI.No.	Title	Duration	Coordinator	Funding Agency
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18. Consultancy Work

SI. No.	Name of Consultancy	Name of Consultant	Sponsoring Agency
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DEPARTMENT OF POLYMER SCIENCE AND RUBBER TECHNOLOGY

The Department of Polymer Science and Rubber Technology (P.S. & R.T.) established in 1971 is one of the pioneers in the area of education and research in Polymer Science and Engineering. In collaboration with the Rubber Research Institute of India the B.Tech Programme was started in the year 1972. The starting of the M.Tech programme in the year 1985 was a major milestone in the growth of the Department.

The highly motivated faculty members with experience in Universities outside India have to their credit about 600 research publications in internationally reputed journals. More than 65 students have already taken their Ph.D. Degrees from the Department. The Department has organised International Seminars in 2002, 2004 and 2008. The Department organizes National Symposia on Advances in Polymer Technology (APT) once in two years to bring the polymer scientists, technologists and engineers working in academic institutions, industry and research organizations to a common platform. Almost 100% placement of the B.Tech and M.Tech students, mainly through campus selection, in major tyre companies, polymer manufacturing / processing industries and research institutions has been the tradition of the Department. Alumni of the Department are in senior positions in major polymer based industries in India, and in multi national corporations.

The eight - semester undergraduate B.Tech programme in Polymer Science and Engineering has been restructured in collaboration with the Eindhoven University of Technology, The Netherlands under the MHO programme in 2002, and thoroughly revised in 2009. The revised curriculum has been designed to equip students in basic science and engineering skills, and to provide them up to date knowledge, and skills in the production, characterization, processing, and testing of polymers and polymer products. Practical training sessions at the Rubber Research Institute of India, Kottayam, Central Institute of Plastic Engineering and Technology, Chennai and other research institutions, and in plant training in Tyre/Polymer Industries are the highlights of this course.

Teaching and research are intertwined in the four semester M.Tech. Programme in Polymer Technology. The first two semesters of the programme comprised of lectures, laboratory work, and seminars. The students spend the third and fourth semesters in a research project either in a research institution / industry R & D division or in the University.

The Department has a very active research community. The international collaborations include the sandwich Ph.D programmes with the Eindhoven University of Technology (TUE), and the Twente University of the Netherlands. Modification of rubber products using electron beam (BARC), Conducting polymers for developing pressure sensors (ISRO), Use of carbon nano-tubes for improved mechanical and electrical properties (DST), Modification of natural rubber (AICTE), Specially composites (UGC – SAP), and Bio-degradable polymers are the major ongoing research projects.

Major facilities in the Department include basic rubber/plastic processing equipments, Windsor Injection Moulding Machine, Shimadzu Autograph Universal Testing Machines (50



kN and 10 kN), Alpha Technologies RPA2000 Rubber Process Analyser, TA Dynamic Mechanical Analyser Q800, TA DSC Q100, TA TGA Q50, Hitachi U-V Visible NIR Spectrophotometer, Bruker Tensor 27 FTIR, Zwick Impact Tester, Atago Abbe Refractometer, Keithley2182 Nano Voltmeter, Gottfert Elastograph, Goettfert Viscotester, Waters515 HPLC, Brookfield Viscometer, Carl Zeiss Stereo Microscope, Thermo Haake(Rheomix) Poly Lab System, Buchi Parallel evaporator, Buchi Rotavapor, Ektron Mooney Viscometer and Ektron Flexometer.

1. Programme of Study / Research

- a) B.Tech Course in Polymer Science & Engineering
- b) M.Tech Course in Polymer Technology
- c) Ph.D Programme in Polymer Technology

2. Faculty Members

SI. No.	Name	Designation	Qualification	Specilisation
1.	Dr. Eby Thomas Thachil	Professor & Head	B.tech, M.Tech & Ph.D	Polymer Science / Technology
2.	Dr. Rani Joseph	Professor	B.tech, M.Sc & Ph.D	Polymer Science / Technology
3.	Dr. K.E. George	Professor	B.Tech, M.Tech & Ph.D	Polymer Science / Technology
4.	Dr. Philip Kurian	Professor	B.Tech, M.Tech & Ph.D	Polymer Science / Technology
5.	Dr. Thomas Kurian	Professor	B.Tech, M.Tech & Ph.D, JSPS	Polymer Science / Technology
6.	Dr. Sunil K. Narayanankutty	Professor	M.Sc., M.Tech & Ph.D	Polymer Science / Technology
7.	Smt. Jayalatha Gopalakrishnan	Lecturer	B.Tech & M.Tech	Polymer Science / Technology

3. Visiting Faculty (If any)

SI. No.	Name	Designation	Qualification	Specilisation
1	Dr. N.M. Mathew	Visiting Professor		

4. Research Staff

SI. No.	Name	Designation	Qualification	Specilisation
NIL				

5. Research Scholars

SI.No.	Name	Funding Agency	Guide	Area of Work
1.	Renju. V.S.		Prof. Eby Thomas Thachil	Utilization of waste expanded polystyrene



2.	Vidya Francis		Prof. Eby Thomas Thachil	Modification of thermoplastics for improved biodegradability
3.	Ayswarya E.P.		Prof. Eby Thomas Thachil	Polymer Nanocomposites
4.	Shadiya. M.A.	KSCSTE	Prof. K.E. George	Polymer nanocomposites for biomedical application
5.	Asha Krishnan		Prof. K.E. George	Reinforcement of polymers using nonofillers
6.	Tresa Sunitha George		Prof. K.E. George	Modification of polymers using nanofillers
7.	Sona Narayanan		Prof. Rani Joseph	Photo conducting and photo refractive polymers
8.	Saisy K. Esthappan		Prof. Rani Joseph	Thermoplastic nanocomposites
9.	Sreejesh. P.R.	CSIR	Prof. Rani Joseph	Cellulose modification for bio-medical applications
10.	Nisha Nandakumar		Prof. Philip Kurian	Polymer Nanocomposites
11.	Julie Jose		Prof. Thomas Kurian	Biodegradable Polymers
12.	D.S. Pramila Devi		Prof. Sunil K.N. Kutty	Conducting polymers - polypyrrole
13.	T. Jabin		Prof. Sunil K.N. Kutty	Conducting Polymers -

6. Administrative Personnel

SI.No.	Designation	No. of Posts
1.	Section Officer	1
2.	Office Supdt.	1
3.	Selection Grade Assistant	2
4.	Peon	1
5.	Sweeper - cum - Cleaner	Vacant

7. Technical Personnel

SI.No.	Designation	No. of Posts
1	Store Kepper	1
2	Technician	1
3	Workshop Attender	Vacant
4	Assistant Librarian	1

8. Student Enrollment

SI.No.	Programme of Study	Men	Women	Total
1	B.Tech	16	6	22
2	M.Tech	7	3	10
3	Ph.D	2	5	7



9. Research Facilities

a) Laboratory Facilities

i) Plastic Processing

Injection Moulding Machine - Screw Type
Injection Moulding Machine - Plunger Type
Extruder
Blow Moulding Machine
Brabender Plasticorder
Torque Rheometer with Extrusion (Haake)
Spin Coating Unit

ii) Rubber Processing

UV - Visible/NIR (Hitachi)
Optical Microscope (Carl Zeiss)
GPC (Waters)
DSC (TA)
TGA (TA)
DMA (TA)
FTIR (Bruker)
Nanovoltmeter (Keithely)
Refractometer

iii) Polymer Testing

UTM (Schimadzu 1 kN and 5kN)
Din Abrader (Zquick)
Elastgraph (goettfert)
Visco Tester (Goettfert)
Rubber Process Analyzer (Monsan)
Capillaary Rheometer (Schimadzu)
Mechanical Stability tester (Klaxon)
Brookfield Viscometer
Denmattia Flexing
Ross Fkexing
Goodrich Flexometer
Hardness Tester
Rebound Resilience Tester
Impact tester (Zwik)
HDT Tester
MFI Apparatus
Specific Gravity Apparatus



iv) Polymer Chemistry

Rotavapour
 Constant Temperature Baths
 Ultrasonic Bath
 Three, Four & Five Digit Balances
 Stirrers (Magnetic & Mechanical)
 Vacuum and Hot Air Ovens
 Hot-stage

v) Computer Lab

Department has a well equipped computer laboratory with full access to Internet via broadband.

b. Library

No. of Books/Journals on 31 st March of previous year		Additions during the year
Books	3615	115
Journals	11	1
Magazines	Nil	

c. Others

10. Distinguished visitors

Sl.No.	Name	Affiliation	Remarks
1	Prof. Kiyohito Koyama	Vice president of Yamagata University	
2	Dr. Masataka Sugimoto	Associate Professor, Yamagata University, Japan	
3	Mrs. Masataka Sugimoto	Yamagata University, Japan	
4	Dr. Nasayuki Yamaguchi	Associate Professor, JAIST, Japan	
5	Prof. Hitoshi Takagi	Advanced materials Division, The University of Tokushima, Japan	
6	Prof. Kochi Goda	Dept. of Mechanical Engineering, Yamaguchi University, Japan	

11. Ph.Ds Awarded

Sl.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1.	Isora fibre reinforced polyester and epoxy composites	Joshya. M.K.	Dr. Rani Joseph
2.	Development of Photorefractive Polymers Synthesis and Characterisation of Polymers with Donor - II - Acceptor Groups	Dhanya. R.	Dr. Rani Joseph
3.	Nano ZnO: A novel modifier for Thermoplastic	Aswathi. K.V.	Dr. Rani Joseph



- | | | | |
|----|--|-----------------|------------------------|
| 4. | Application of cardanol in Rubber Processing | Mary Alexander | Dr. Eby Thomas Thachil |
| 5. | Development of Polymer Cement Composites | Priya Viswanath | Dr. Eby Thomas Thachil |

12. Publications

a. Papers

Sl.No. Name of Paper

1. Cure characteristics and Mechanical properties of HRH bonded nylon - 6 short fiber nanosilica - acrylonitrile butadiene rubber hybrid composite, polymer plastic Technology and Engineering Leny Mathew, Sunil K.N. Kutty 48 1-7, 2009.
2. An elastomeric conducting, composite based on polyaniline coated Nylon fibre and chloroprene rubber, Saritha Chandran. A., Sunil K.N. Kutty, European polymer journal, 44 (7), 2418 - 2429, 2008
3. Dielectric behaviour of polyaniline / PVC / Nylon fibre composites at microwave frequencies, polymer - plastics Technology and Engineering, 2008, Saritha Chandran. A., Sunil KN Kutty
4. Modification of polypropylene / glass fibre composite with nanosilica, Sinto Jacob, Suma K.K., Jude Martin Mendez, Abhilash George and K.E. George, Macromol Symp. 2009, 277, 138 - 143
5. Modification of polystyrene using Nanosilica for improvement in Mechanical properties, B, Renjanadevi and K.E. George, Progress in Rubber, Plastics and Recycling Technology, 25 (2), 2009
6. Studies on Recyclable Nylon reinforced PP composites : Effect of fibre diameter Thomas N.Abraham and K.E. George, Journal of thermoplastic Composite Materils, 22 (2009)
7. Micro/Nano hybrid fillers for effective reinforcement of polypropylene, Sinto Jacob, Suma. K.K., Jude Martin Mendez and K.E. George paper presented at the Kerala State Chemical Engineer's Conference (chem. 09), June 5-6, 2009, Kochi
8. HDPE/SiO₂ Nanocomposite with improved mechanical properties, Sinto Jacob, Suma. K.K., Jude Martin Mendez and K.E. George Poster presented in the 7th International Plastics Exhibition Conference, (Plastindia 2009), New Delhi (2009)
9. Modification of polypropylene with Nanosilica, Sinto Jacob, Suma. K.K., Jude Martin Mendez and K.E. George, Paper presented at the ICBC, 2009, Kottayam.
10. Studies on biodegradability of linear low density polyethylene-dextrin blends using vibrios form benthic environment, Zeena P. Hamza, Anna Dilfi K.F., Thomas Kurian and Saritha G. Bhat, **Progress in Rubber, Plastics and Recycling Technology**. 25: (3) 129-140, 2009.
11. Effect of amylase producing vibrios from the benthic environment on the biodegradation of low density polyethylene-dextrin blends, Anna Dilfi K.F, Zeena P. Hamza, Thomas Kurian and Saritha G. Bhat, **Polymer Plastics Technology and Engineering 48**: 602-606, (2009)
12. Biodegradability studies on LDPE-starch blends using amylase-producing vibrios, Zeena P. Hamza, Anna Dilfi K.F., Thomas Kurian and Saritha G. Bhat, **International Journal of Polymeric Materials**, 58: 257-266, 2009



13. Biodegradability studies on LDPE - starch blends using amylase - producing vibrios, Zeena. P. Hamza, Anna Dilfi K.F., Thomas Kurian and Saritha G. Bhat, International Journal of Plastics Technology, Vol. 12, 1021 - 1030 (2008).
14. Zeena P. Hamza, Anna Dilfi K.F., Muralidharan M.N., and Thomas Kurian, Microwave oven for the rapid determination of total solids content of natural rubber latex, *Intern. J. Polymeric Master*. 57, 918-923, 2008.
15. Effect of alkali treatment on the mechanical properties of short randomly oriented isora fibre-polyester composites, M.K. Joshy, Lovely Mathew and Rani Joseph, Progress in Rubber, *Plastics and recycling Technology*. (manuscript scheduled for issue No.4, due for publication in December 2008)
16. Spectral distribution of photocurrent in poly (6-tert-butyl-3-methyl 1-3, 4-dihydro-2H-1, 3-benzoxazine), Kishore V.C., R. Dhanya, K. Sreekumar, Rani Joseph and C. Sudha Kartha, Synthetic Metals, Vol. 158, 676-680 (2008).
17. Dipole Moments and First - order hyperpolarizability of N, N-bis (4-bromobutyl) - 4-nitrobenzenamine V.C. Kishore, R. Dhanya, K. Sreekumar, Rani Joseph and C. Sudha Kartha, Spectrochimica Acta Part A, Vol. 70, 1227 (2008)
18. Ground state and excited state dipole moments of alkyl substituted p-Nitroaniline derivatives. Dhanya R., Kishore V.C., Rani Joseph, Sudha Kartha C and Sreekumar K., Soelectrochimica Acta Part A, Vol. 71, 1355-1359 (2008)
19. Optimization of preparation conditions on the dielectric properties of polyaniline” Rinku Marium Thomas, Honey John, Rani Joseph, K.T. Mathew, K.E. George Journal of Applied Polymer Science*, Volume 112, Issue 5, Date: 5 June 2009, : 2676 - 2682
20. Silver doped photopolymer media for holographic recording V. Pramitha, K.P. Nimmy, N.V. Subramonian, Rani Joseph, Sreekumar. K. and Sudha Kartha C. Applied Optics, 48, 2255 - 2261, (2009)
21. Preparation of Low-Protein Natural Rubber Latex: Effect of Polyethylene Glycol, G. Abhilash, S. Sabharwal, Abhinav Dubey, Jose Paul, Honey John, Rani Joseph, Journal of Applied Polymer Science, Vol. 114, 806-810 (2009)
22. Effect of Chromium Doping on the diffraction Efficiency of Methylene blue sensitized PVA/Acrylamide films, Beena Mary John, Rani Joseph, K. Sreekumar, C. Sudha Kartha, J. Mater. Sci. Mater Electron. 20. S216-S220, (2009)
23. Influence of fibre surface modification on the mechanical performance of randomly oriented isora-polyester composites, M.K. Joshy, Lovely Mathew and Rani Joseph (accepted for publication in International Journal of Polymeric materials - Reference number SMA035/08)
24. Compatibility Studies on Sulphur Cured EPDM/CIIR Blends, Sunil Jose. T, Anoop Anand K., and Rani Joseph, Iranian Polymer Journal / Volume 17 Number 6 (2008)
25. EPDM/CIIR blends: improved mechanical properties through procuring, Sunil T. Jose, Anoop K. Anand, Rani Joseph, Polym. Bull. DOI 10. 1007/s00289-009-0073-8
26. Optimization of Preparation Conditions on the Dielectirc Properties of Polyaniline Rinku M. Thomas, Honey John, K.T. Mathew, Rani Joseph and K.E. George, Journal of Applied Polymer Science, 2008.



27. Nanp ZnO filled Polypropylene: Thermal Properties, Aswathy K.V., and Rani Joseph, International Journal of Plastics Technology Vol. 12, 957-967 (2008)
28. 'Control of Microvoids in Resol Phenolic Resin using unsaturated polyester' by P.S. Parameswaran, Eby Thomas Thachil, Journal of Applied Polymer Science, Vol 113, 802-810, 2009
29. 'Studies on the use of cardanol as plasticizer for silica filled nitrile rubber' by Mary Alexander and Eby Thomas Thachil, Progress in Rubber Plastics and Recycling Technology, Vol 25, No. 1, 75-89, 2009
30. 'Blends of Natural Rubber with unsaturated Polyester Resin', M.G. Bhuvaneshwary and Eby Thomas Thachil, International Journal of Polymeric Materials, 57:543-554, 2008
31. 'Plasticisation of Carbon Black filled Acrylonitrile - butadiene Rubber using Cardanol', Mary Alexander, Beena T. Abraham and Eby Thomas Thachil, Journal of Rubber Research, 11(4), 209-222, 2008
32. 'Properties of polyvinyl alcohol cement pastes', Priya Viswanath and Eby Thomas Thachil, Materials and Structures, 41:123-130, 2008
33. 'Effect of phenol CNSL formaldehyde on the thermal aging of elastomers -1, Mary Lubi C. & Eby Thomas Thachil, International Journal of Polymeric Materials, Vol. 57, Issue 1, 2008

b. Books

Sl.No. Name of Book

- | | | |
|----|---|-----------------|
| 1. | Advances in Polymer Processing - Woodhead Publishing Company Ltd. (2009) Contributed on Chapter | Dr. K.E. George |
| 2. | A text book of Engineering Chemistry - Educational Publishers and Distributors | Dr. K.E. George |

13. Participation in Seminar / conference / Refresher Courses etc by Faculty/Students.

Name of Participant	Name of Seminar/Conference / Workshop	Role
Dr. K.E. George	Kerala State Chemical Engineering, Conference (Chem 09) June 5-6, 2009 Kochi	Presented an invited lecture chaired one session
Dr. K.E. George	25 th National Convention of Chemical Engineers (Kochi) October 9-10, 2009 Kochi	Chaired one session
Prof. Thomas Kurian	Opportunities and Challenges, Seminar on Issues in Rubber Sector (WTO Cell, Govt. of Kerala), at the Conference Hall of the Plantation Corporation of Kerala, Kottayam	Resource person to give a Lecture on Industrial Applications of Natural Rubber
Prof. Thomas Kurian	Technopreneur 2008 Workshop on promoting Technology Business incubation & building Enterprises, May 17, 2008, Avenue Center, Kochi	As a participant
Prof. Thomas Kurian	Workshop on Computational Materials Science (CMS-09) during March 6-8, 2009 at Indian Institute of Science (IISc), Bangalore.	As a participant



Dr. Rani Joseph	Hindustan Latex Limited	Invited Speaker
Dr. Rani Joseph	S.B. College Changanassery	Invited Speaker
Dr. Rani Joseph	S.N.M. College Maliankara	Invited Speaker
Dr. Rani Joseph	Foot Expo 2009	Invited Speaker
Dr. Rani Joseph	Trissur Engineering College	Invited Speaker
Dr. Rani Joseph	Newman College Thodupuzha	Invited Speaker
Abilash. G.	POLYCHAR - 16, World Forum on Advanced Materials, 27-21 February 2008, World Unity Convention Centre, Lucknow, India	Author
Abilash G.	CHEMREFERENCE 09 , August 22-23, 2009, Indian Institute of Technology, Chennai, Tamil Nadu, India.	Author
Nimmi. K.P.	APT 2008	Author
Nimmi. K.P.	PHOTONICS 2008, 15-17 Dec. 2008, IIT Delhi, New Delhi	Author
Nimmi. K.P.	POLYCHAR - 16, World Forum on advanced materials, 17-21 February 2008, World Unity Convention Center, Lucknow, India	Author
Nimmi. K.P.	Optical society of India symposium on contemporary optics and applications (organized by OSI and M.S. University), Baroda, 1-3 March, 2007	Author
Suma. K.K.	POLYCHAR – 16, World Forum on advanced materials, 17-21 February 2008, World Unity Convention Center, Lucknow, India.	Author
Suma. K.K.	APT 2008	Author
Neena George	APT, 2008	Author
Neena George	NIT, Calicut	Author
Dr. Eby Thomas Thachil	APT 2008 September 25-28	Member, Organising Committee
P.S. Parameswaran	APT 2008	Author
M.G. Bhavaneswary	APT 2008	Author

14. Awards / Honours / Fellowships etc. received

Name of Receptient	Name of Fellowship/Honour/Award	Awarding Agency
Mr. Sinto Joseph	Best Poster Award	International Conference on Plastics (Plastindia) February 6-7, 2009
Mr. Sinto Jacob	Best Poster Award	ICBC, 2009
Prof. Thomas Kurian	Apollo Tyres Best Technical Paper Award	Indian Rubber Manufactures Research Association's (affiliated to the Ministry of Commerce & Industry, Govt. of India)

**15. Sponsored Research Projects**

Sl.No.	Title	Sponsoring Agency	Amount	Investigator(s)
1	Development of Polymer based Specialty Composites	UGC	Rs. 43 lakhs + Rs. 25 lakhs for the Dept. for research and infrastructure facilities	Prof. Thomas Kurian (Co-ordinator), and Prof. K.E. George (Dy. Co-ordinator)
2.	Thermoplastic nanocomposite fibers	KSCSTE	Rs. 7.56 lakhs only	Dr. Rani Joseph

16. Research Programmes and Activities:

Sl. No.	Problem / Topic	Investigator(s)
1.	Development of conducting, polymer Composites	Dr. Sunil. K. Narayanankutty
2.	Preparation of hybrid composites based on Nanosilica & short nylon fibres	Dr. Sunil K. Narayanankutty
3.	Use of vegetable oils as a substitute for plasticizer in rubber compounds	Dr. Sunil K. Narayanankutty
4.	Development of thermoplastic elastomers based on I polystyrene and reclaimed rubber	Dr. Sunil K. Narayanankutty
5.	Development of novel route for preparing short fibre - rubber composites by latex stage master batching	Dr. Sunil K. Narayanankutty
6.	Low formaldehyde PF resins	Dr. Sunil K. Narayanankutty
7.	Biodegradable polymeric composites	Dr. Sunil K. Narayanankutty
8.	Dynamic mechanical properties of rubber composites - a comparative study	Dr. Sunil K. Narayanankutty
9.	Polymer Nano composites	Dr. Rani Joseph
10.	Rubber to Metal bonding	Dr. Rani Joseph
11.	Polymer bound antioxidants	Dr. Rani Joseph
12.	Rubber reclaiming	Dr. Rani Joseph
13.	Rubber blends	Dr. Rani Joseph
14.	Rubber composites	Dr. Rani Joseph
15.	Polymers in optical recording	Dr. Rani Joseph
16.	Conducting Polymers	Dr. Rani Joseph
17.	Photoconducting and photorefractive polymers	Dr. Rani Joseph
18.	Novel polymer coatings	Dr. Rani Joseph
19.	Modified thermoplastics for improved biodegradability	Dr. Eby Thomas Thachil
20.	Utilization of waste expanded polystyrene	Dr. Eby Thomas Thachil
21.	Polymer nanocomposites base on manoash	Dr. Eby Thomas Thachil



17. Seminar/Conference / Workshop / Refresher Courses conducted by the Department

Sl.No.	Title	Duration	Co-ordinator	Funding Agency
1	Advances in Polymer Technology	3 days September 25 - 28, 2008	Dr. Sunil K.N. Kutty	Various Agencies

18. Consultancy Work

Sl. No.	Name of Consultancy	Name of Consultant	Sponsoring Agency
	General testing of rubbers and plastics		



DEPARTMENT OF SHIP TECHNOLOGY

The Department of Ship Technology is one of the pioneers in the field of Naval Architecture education in this country. The Department was established with an aim to create a new and dynamic generation of Naval Architects to meet the requirements of Indian Shipbuilding Industry, Ship classification Societies, R & D organization, Indian Navy, and related institutions. With this in view, a B.Tech course in Naval Architecture and Ship - building was started in 1975. This department maintains active collaboration and interaction with IITs, foreign universities, shipyards and other industries. These institutions have been generous in extending their facilities and expertise to impart training to our students. The fruitful collaboration of this department with Rostock University, Germany dates back to 1978 and remains an important milestone in the growth of this department. Currently the Department has entered into a collaboration with School of Aerospace and Naval Architecture, Chosun University, Koera, for exchange of students and research scholars and for cooperative research programmes. The B.Tech course was accredited by the Royal Institutions of Naval Architecture, London, for five years from 1994. The Ministry Surface Transports, Govt. of India approved this course for the M.O.T. Certificate Examination, thus enabling our graduates to venture into the field of Marine Engineering also. Indian Navy has recognized this department as a centre for the higher education of their officers.

The curriculum was drawn up and updated in consultation with experts from various walks of the field. This has brought the course curriculum in conformity with international standards. The department has a highly qualified and dedicated faculty, an excellent library, computer centre, laboratories and work shops. The quality of education imparted and the resulting professional competence of the graduates enabled the department to achieve a unique record of 100% placement to its graduates in India and abroad.

The intake of students, based on the Common Admission Test (CAT), is limited to 39 (of which 12 seats are reserved for cadets from Indian Navy) and 2 seats for Foreign students and 1 seat for sports quota. An M.Tech Degree programme in Computer Aided Structural Analysis and Design, having a very promising employment potential, was started in 1995 with an intake of 10 students later increased to 15 students. This department also offers Ph.D programmes in Naval Architecture, Ocean Engineering and related fields.

1. Programmes of Study/Research

- | | |
|---------------------------|---|
| 1. Bachelor of Technology | (Naval Architecture and Ship Building) |
| 2. Master of Technology | (Computer Aided Structural Analysis & Design) |
| 3. Doctor of Philosophy | (Hydrodynamics, Structural Analysis, Strength of Materials, Ship Design, Offshore Structures, Ship Motions Ship and Submarine Controllability, Resistance and Propulsion, Stability, Ship Production, CAD/CAM). |

**2. FACULTY DETAILS**

Sl. No.	Name	Designation	Qualification	Specialisation
1.	Dr. Dileep K Krishnan	Reader	B.Tech (Hons) N.A., IIT Kharagpur, M.E. Ocean Engg. (Stevens Tech USA) Ph.D (Southampton UK)	Ship Controllability Ship Manoeuvrability, Computer Simulation
2.	Dr. K.P. Narayanan	Reader	B.Tech (NA & SB) CUSAT Dr. Ing. (Rostock Univ. Germany)	Ship Structures and Strength
3.	Dr. S.K. Pyarilal	Reader & Head	B.Tech (NA & SB) CUSAT Dr. Ing. (Rostock Univ. Germany)	Ship Design, Marine Hydrodynamics
4.	Dr. C.G. Nandakumar	Reader	B.Tech (Civil Engg) M.Tech (Ocean Engg., IT Madras) Ph.D (IIT Madras)	Finite Element Method, Structural Analysis
5.	Dr. K. Roby	Reader	B.Tech (NA & SB) CUSAT M.Tech (Comp. Science, IIT Madras) Ph.D (Osaka Prefecture Univ. Japan)	Naval Architecture, Computer Science
6.	Mr. James Joseph Kattady	Reader	B.Sc. Engg. Mech. Dip. Ing. (Rostock, Germany) MBA (CUSAT)	Marine Engg. Thermodynamics
7.	Mrs. Mariamma Chacko	Reader	B.Tech (Elect. Engg.) M.Tech (Electronics)	Fault Tolerant CPU Architecture
8.	Mr. Mathiazhagan A	Sr. Lecturer	M.Sc (Applied Chemistry, Guindy) M.E. (Metallurgy, REC, Trichy)	Material Science and Corrosion Engg.
9.	Dr. Sudheer C.B	Lecturer	B.Tech (NA & SB) CUSAT, Dr. Ing. (Rostock Univ. Germany)	Production Engg., Ship Production, CAD/CAM
10.	Mr. Sivaprasad K	Reader	B.Tech (NA & SB) CUSAT, M.Sc. (Ship Production Technology, Strathclyde Univ. Glasgow)	Ship Building Tech
11.	Mr. B. Mohan Babu	Reader	B.Sc Engg. (Mech) M.Sc Engg. (M.Tech Kerala Univ.)	Fluid Mechanics & Applied Mechanics



3. Visiting Faculty (If any)

NIL

4. Research Staff

NIL

5. Research Scholars

Sl. No.	Name	Funding Agency	Guide	Area of Work
1.	Baiju M. V	Nil	Dr. P. Krishnankutty	Investigation of Directional Stability of Fishing Vessel during Travelling
2.	Bindumol T.V		Dr. C. G. Nandakumar	Analysis of Plated Structures Stochastic Finite Elements
3.	Dileeplal		Dr. K. P. Narayanan	Reliability Based Engg. Design in Ship Building
4.	Shine U.P		Dr. E.M. S. Nair	Fatigue and Fracture studies on Structural Components
5.	Simon K. A		Dr. E.M.S. Nair	Marine Engg. Training in India
6.	Sivaprasad K		Dr. C. G. Nandakumar	Ship Recycling
7.	Sunil Kumar P.G		Dr. C. G. Nandakumar	Stochastic methods in ships strength estimation
8.	Vikas V. Shenoy		Dr. C. G. Nandakumar	Investigation on Analysis Design & Construction Management of Port and Harbor Structure
9.	Prabha C		Dr. C. G. Nandakumar	Analysis of Stiffened Cylindrical Shell & Openings
10.	Santhosh B		Dr. C. G. Nandakumar	Thermostructural Analysis of 3D Composites
11.	Nandagopan O.R		Dr. C. G. Nandakumar	Numerical Investigation on Shock Response of Submarine Cylindrical Shells
12.	P.P. Lalu		Dr. K. P. Narayanan	
13.	Baiju Sasidharan			
14.	Sajith Kumar P.C		Dr. C. G. Nandakumar	Hydro-Dynamic and Structural Aspects of Under water Bodies
15.	Kavitha P.E		Dr. K.P. Narayanan	Structural Engg.-Soil Structure interaction of Ship berthing structures
16.	Deepu V.S		Dr. K.P. Narayanan	Structural Analysis of Liquefied Natural Gas Carriers
17.	Lathi Karthi		Dr. E.M.S. Nair	
18.	Manoj G Tharian		Dr. E.M.S. Nair	Structural Analysis of Container Ship
19.	Cdr. Nitin Agarwala		Dr. E.M.S. Nair	Numerical Investigation of Accounted Structure interaction for 'smart' Naval Ships

**6. Administrative Personnel**

Sl. No.	Designation	No. of Posts
1	Section Officer	1
2.	Assistants	3 (2 vacant)
3.	Typists 2 (2 vacant)	
4.	Clerical Asst.	1 (vacant)
5.	Peon	2 (1 vacant)
6.	Asst. Librarian	1
7.	Professional Asst.	1
8.	Store keeper	1
9.	Sweeper	1 (vacant)

7. Technical personnel

Sl. No.	Designation	No. of Posts
1	Technical Officer Gr. I	1
2.	Technical Asst. Gr. II	1 (on leave)
3.	Technician Gr. II	4 (2 vacant)
4.	Lab Asst.	1
5.	Ammonia Print-cum photocopier operator	1

8. Students enrollment

Sl. No.	Programme of study	Men	Women	Total
1.	B.Tech (NA & SB)	36	Nil	36
2.	M.Tech (CASAD)	6	8	14

9. Research facilities**a) Laboratory**

1. Fluid Mechanic, Material Testing , Instrumentation
2. Computer lab
3. Workshops - Carpentry, Machine Shop, Welding shop. Fitting shop & Model making

b) Library

No of Books/Journals on 31 st March of pervious year	Additions during the year
Books -149	

c) Others

NIL



10. Distinguished visitors

1. Thresa Lee, VP, HR, St. Marche
2. Shinji Novaka, Oshima Shipbuilding Co. Ltd., Japan
3. A. J. Das, Mazagon Dock Ltd., Mumbai
4. Cdr. P R Raghunath, GM (Design), MDL, Mumbai
5. Rupak Jayal, Group General Manager (HR), Mazagon Dock Ltd., Mumbai
6. Kazuhiro Osaka, Nakasaki, Oshima Ship Building Co., Japan
7. Hiroshi Akahshima, Oshima Ship Building Co., Japan
8. Atilla INCE CIK, Dept. of Naval Architecture and Marine Engg. University of Glasgow And Strathclyde, Glasgow
9. Yogesh Jaisinghani, NA Group Nos (Hull) ABG Shipyard Ltd. Nr. Magdalla Port, Dumas Road, Surat, Gujarat
10. Prof. Purnendu Das, Department of Naval Architecture and Marine Engineering, Glasgow

11. Ph.Ds Awarded

SI. No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1.	Analytical Investigations on Collapse of Cylindrical Submarine Shells	Smt. Alice Mathai	Dr. C. G. Nandakumar

12. Publications

A) Papers**K. Sivaprasad**

SI. No. Name of Paper

1. K. Sivaprasad, Dileep K. Krishnanan, C. G. Nandakumar, Sustainable Development Index, International Conference on ship dismantling 15-16 September 2008, Glassgow University, Glassgow.
2. Vikas Shenoy V, K. Sivaprasad, C.G. Nandakumar, Reclying of demolished products of Recycling building, RACE-2008, National Symposium on Recent Advances in Civil Engg., Dept. of Civil Engg., School of Engg., CUSAT, December 4-6, 2008.
3. K. Sivaprasad, Dileep K. Krishnan, Solar solutions for echotourism in lakes, Lake-08, National seminar on lakes and ecosystems, IISC Banglore, 22-24, December 2008.

b) Books

NIL

13. Details of Short term courses attended/Participation of Seminar/conference/ Refresher course/etc. by the Faculty members/students.

NIL



14. Awards/Honours/Fellowship etc received

NIL

15. Sponsored research project

NIL

16. Research programmes and activities

Sl. No.	Problems/Topics	Investigator(s)
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NIL

17. Seminar/Conference/Workshop/Refresher course conducted by the department

NIL

18. Consultancy Work

Sl. No.	Name of Consultancy	Name of Consultant	Sponsoring Agency
1.	Tender Design of 5 Vessels IWAI, Kochi	Dr. Dileep K. Krishnan	Inland Water Authority of India, Kochi
2.	Design of 79 Passenger Tourist Boat for Kerala Forest Dept.	Dr. Sudheer C. B., Mr. Sivaprasad K	Steel Industries Kerala Ltd., Kannur
3.	Inspection of Construction of Steel Boats	Dr. Sudheer C. B & Mr. Sivaprasad K	Steel Industries Kerala Ltd., Kannur
4.	Preliminary Design of Survey Launch	Dr. Dileep K. Krishnan	Inland Water Authority of India
5.	Inspection and Survey of 75 passenger steel boats for State Water Transport Department, Kerala Government	K. Sivaprasad	Steel Industrials Kerala Ltd (SILK), Kannur
6.	Design of Tourist boat for Periyar Tiger Reseve Project, Forest Department, Thekkady	K. Sivaprasad	Tiger Reserve Project, Forest Department, Kerala Government Thekkady
7.	Concept Design of SWAB (Small Water Plane Area Buoy)	K. Sivaprasad	Concept Design & fabrication of small water plane Area buoy (SWAB)
8.	Inclining Experiment of Tourist boat for Periyar Tiger Reserve Project, Forest Department, Thekkady	K. Sivaprasad	Tiger Reserve Project, Forest Department Government Thekkdy
9.	Design modification of Pattara Chundan (Chundan Vallam owned by Jose Pattara)	K. Sivaprasad	Hull form modification of Pattara Chundan
10.	Recommendations for Improving Ship Recycling Practices in India	K. Sivaprasad, C. G. Nandakumar	Class NK, Mubai



19. Departmental Publications, if any

Vol XVII Shiptechnic, Annual Technical Journal, Published by SNAS

20. Extra curricular activities

Various activities organized by Society of Naval Architecture Students.



DEPARTMENT OF STATISTICS

The Department of Statistics was established in 1996 by bifurcating the School of Mathematical Sciences into two Departments. The Department offers a four semester M.Sc. Programme in Statistics and an M.Tech Programme in Engineering Statistics besides research programmes leading to Ph.D Degree.

In addition to teaching in Statistics, the Department is actively engaged in research in several areas in Statistics. Four UGC sponsored minor research projects have already been completed and two major research projects sponsored by DST are ongoing. The Department has so far conducted three international seminars, two workshops at international level besides several national conferences. During 2007-08 one national conference and an international conference was hosted by the department.

The Department has been identified as a Centre for organizing refresher courses for College/University teachers since 1993. The thrust areas of research in the department include Distribution Theory, Bayesian Inference, Time Series Analysis, Inference in Stochastic Processes, Reliability Modeling and Information Theory.

The M.Sc. course is intended to provide a platform for talented students to undergo higher studies in the subject as well as to train them to suit for the needs of society.

The M.Tech course is intended to provide a vehicle for interaction between the modern approaches to quality and reliability engineering, statistical methodology and industrial engineering aspects, thereby facilitating integration of appropriate techniques.

The UGC has recognized the Department under the Special Assistance Programme at DRS level. An amount of Rs.32.00 lakhs has been sanctioned for five years to develop research facilities. The Department is being sponsored by the DST under the FIST programme. Under this programme DST has sanctioned an amount of Rs.19.5 lacs for infrastructural development. The Department offers consultancy services to various industrial establishments and R&D institutions in the State in data analysis, planning of surveys, reliability modeling and quality improvement. The departmental library has about 2206 books and is presently subscribing to 14 journals. The Department has a well-equipped computer lab with internet facility. The department has acquired the latest computer software such as SPSS, MATLAB MATHEMATICA, SYSTAT, SAS so as to meet the needs of the students. In addition, a well-equipped engineering laboratory with metrological instruments is set up for the use of the M.Tech students.

To enhance academic pursuits in socially relevant and scientifically interesting fields a Centre for Population Studies has been established in the Department. The centre is aimed at conducting research in Demography, Community health and related fields of Social Sciences. This centre has conducted two surveys on Health and Population in Cochin and submitted the reports to the Corporation of Cochin.

1. Programmes of Study/Research

1. M.Sc. (Statistics)
2. M.Tech (Engineering Statistics)
3. Research (FT & PT)

**2. Faculty Members**

Sl.No.	Name	Designation	Qualification	Specialization
1.	Dr. V.K.Ramachandran Nair	Professor	M.Sc., Ph.D	Queuing theory, Probability Distributions, Stochastic Processes, Multivariate Analysis.
2.	Dr. K.R.Muraleedharan Nair	Professor	M.Sc., M.Phil., Ph.D.	Distribution Theory, Reliability Modeling, Information Theory
3.	Dr. N.Balakrishna	Professor & Head	M.Sc., M.Phil., Ph.D.	Stochastic Processes & Inference, Time Series Models, Chaos & Nonlinear Time Series
4.	Shri K.C.James	Reader	M.Tech., Ph.D	Industrial Engineering, DEA, TQM & ISO 9000
5.	Dr. Asha Gopalakrishnan	Reader	M.Sc., M.Phil Ph.D.	Distribution theory, Discrete Reliability theory
6.	Dr. P.G.Sankaran	Reader	M.Sc., Ph.D	Distribution Theory, Reliability Theory, Data Analysis
7.	Dr. S.M.Sunoj	Lecturer	M.Sc., Ph.D.	Distribution Theory, Reliability Theory, Data Analysis

3. Visiting Faculty (If any): Nil**4. Research Staff**

Sl.No.	Name	Designation	Qualification	Specialization
1.	Jagathnath Krishna K.M.	Project Fellow	M.Sc.	Reliability Theory
2.	Aneesa Rahmath T.A.	Project Fellow	M.Sc	Reliability Theory
3.	Sreelekshmy Raj	Project Fellow	M.Sc	Financial Time Series
4.	Shiji K.	Project Fellow	M.Sc	Financial Time Series

5. Research Scholars

Sl.No.	Name	Funding Agency	Guide	Area of work
1	Stephy Thomas	CSIR SRF	Dr.V.K.Ramachandran Nair	Reliability analysis
2	Smitha S.	Nil	Dr.K.R.Muraleedharan Nair	Distribution theory
3	Anisha.P	-do-	Dr. P.G.Sankaran	Survival analysis
4	Vinesh Kumar	Nil	Dr.N.Unnikrishnan Nair	Reliability analysis
5	Hareesh G	Part-time	Dr.N.Balakrishna	Time series analysis.



6	Sujith P.	-do-	Dr.N.Balakrishna	State-space models and their applications in time series.
7	Angel Mathew	-do-	Dr.N. Balakrishna	Inference for stochastic process
8	Sreedevi E.P.	-do-	Dr.P.G.Sankaran	Survival analysis
9	Rejeesh C. John	-do-	Dr.Asha Gopalakrishnan	Distribution theory: Models in reliability analysis.
10	Preeth.M	-do-	Dr. N.Unnikrishnan Nair	Distribution theory
11	S.Prasad	-do-	Dr.P.G.Sankaran	Reliability analysis
12	Linu M.N.	Nil	Dr. S.M. Sunoj	Weighted Distributions
13	Sreelekshmy Raj	Nil	Dr. N. Balakrishna	Time series analysis.
14	Jagathnath Krishna K.M.	UGC	Dr.Asha Gopalakrishnan	Distribution Theory- Models in Reliability Analysis

6. Administrative Personnel

Sl.No.	Name	Designation	No. of Posts
1.	Shiehla V.	Section Officer	1
2.	Biju S. Nair	Sr.Gr. Assistant	2 (1 Vacant)
3.	-	U.D. Typist	Vacant
4.	Sobhana V.M.	Peon	1
5.	Sarojini P.K.	Sweeper-cum-Cleaner	1
6.	Rajalekshmi R.	Professional Asst. Gr.II	1

7. Technical Personnel : Nil**8. Student Enrollment**

Sl.No.	Programme of Study	Men	Women	Total
1.	Ph.D. (F.T.)	2	4	6
2.	Ph.D. (P.T)	7	1	8
3.	M.Sc. Statistics	3	16	19
4.	M.Tech. Engg.Statistics	2	—	2

9. Research Facilities**a. Laboratories (List out Major equipments available)**

- i. Computer Lab with 34 computers
- ii. Internet facility
- iii. Metrology Laboratory

**b. Library**

No of books and Journals as on 31 st March of the 2008		Additions during the current year
Books:	2206	85
<u>Journals:</u>		
Foreign:	7	Nil
Indian:	7	Nil
Govt. Pub:	Nil	Nil

c. Others: Nil**10. Distinguished visitors**

Sl.No.	Name	Affiliation	Remarks
1.	Bovas Abraham	University of Waterloo, Canada	Period of visit 28-01-09 to 30-01-09
2.	H.N. Nagaraja	Ohio State University, Columbus - USA	16-12-08 to 18-12-08
3.	Anup Diwanji	ISI, Kolkata	21-01-09 to 30-01-09
4.	S.D. Gore	University of Pune	27-01-09 to 30-01-09
5.	T.V. Ramanathan	University of Pune	28-10-08 to 03-11-08

11. Ph.Ds Awarded

Sl.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1.	Distribution theory	Haritha N. Haridas	Dr. K.R. Muraleedharan Nair
2.	Distribution theory	Gleeja V.L.	Dr. P.G. Sankaran
3.	Reliability Analysis	Sreeja V.N.	Dr. P.G. Sankaran
4.	Reliability Analysis	Sudheeshkumar Kattumannil	Dr. N. Unnikrishnan Nair

12. Publications**a. Papers**

- P.G.Sankaran and Ansa Alphonsa Antony (2008):** Non-parametric estimation of bivariate survivor function under masked causes of failure, *Journal of Nonparametric Statistics*, 20, 77-89.
- P.G.Sankaran and Gleeja V.L (2008):** Proportional reversed hazard and frailty models, *Metrika*, 68, 333-34.
- P.G.Sankaran and Gleeja V.L (2008):** Association of measures for bivariate lifetime data, *Communication in Statistics-Theory and Methods*, 37, 3228-3249, 2008.
- N.Unnikrishnan Nair , P.G.Sankaran and Vinesh Kumar B (2008):** Total time on test transforms of order n and its implications in reliability analysis, *Journal of Applied Probability*, 45 (4), 1126-1139.
- Sunoj, S.M. and Maya, S.S. (2008):** The role of lower partial moments in stochastic modeling, *Metron*, LXVI (2), 219-238.



6. **Johny Scaria and N.Unnikrishnan Nair (2008):** Distribution of extremes of 6th concomitants from Morgenstern family, *Statistical papers*, 49, 109-119.
7. **N.Unnikrishnan Nair and Sudheesh K.K. (2008):** Some results on lower variance bounds useful in reliability modeling and estimation, *Annals of the Institute of Statistical Mathematics* (To appear)
8. **R.P.Gupta, N.Unnikrishnan Nair and G.Asha (2008):** Characterizing discrete life distributions by relations between reversed failure rates and conditional expectations, *Far East Journal of Theoretical Statistics* (To appear).
9. **N.Unnikrishnan Nair and G.Asha (2008):** Some characterizations based on bivariate reversed mean residual life, *Prob.Stat Forum*, 1-14.
10. **N.Unnikrishnan Nair and P.G.Sankaran (2008):** Characterization of multivariate life distributions, *Journal of Multivariate Analysis* (to appear).
11. **Haritha, N, N.Unnikrishnan Nair and K.R.Muraleedharan Nair (2008):** Modelling income using the generalized lambda distribution, *Journal of Income Distribution* (to appear).
12. **N.Unnikrishnan Nair and M.Preeth (2008):** On some properties of equilibrium distributions of order n, *Statistical Methods and Applications* (to appear).
13. **N.Unnikrishnan Nair and P.G.Sankaran (2008):** Quantile based reliability analysis, *Communications in Statistics – Theory and Methods* (to appear).
14. **N.Unnikrishnan Nair and M.Preeth (2008):** Multivariate equilibrium distributions of order n, *Statistics and Probability Letters* (to appear).
15. **H.N.Haridas, N.Unnikrishnan Nair and K.R.Muraleedharan Nair (2008):** Modelling income using the generalized lambda distributions, *Journal of Income distributions* (to appear).
16. **S.Smitha, K.R.Muraleedharan Nair and P.G.Sankaran (2008):** On measures of affinity for truncated distributions, *Calcutta Statistical Association Bulletin* (to appear).
17. **Sunoj, S.M., Sankaran, P.G. and Maya, S.S. (2008):** Characterizations of distributions using conditional expectations of doubly (interval) truncated random variables, *Communication in Statistics – Theory and Methods* (to appear).
18. **Maya, S.S. and Sunoj, S.M. (2008):** Some generalized information measures in the context of weighted models, *Statistica* (to appear).
19. **P.G.Sankaran and Ansa Alphonsa Antony:** Non parametric estimation of life time distribution of competing risk models when censoring times are missing, *Statistical Papers*, 2008 (to appear).
20. **A. J. Lawrance and N.Balakrishna (2008):** **Statistical Dependency in Chaos.** *International Journal of Bifurcation and Chaos Vol.18, No. 11, 3207 - 3219*
21. **N. Balakrishna and Angel Mathew (2009).** Non-parametric estimation of the average availability. *Communication in Statistics – Theory and Methods*, 38, 1207-1218.
22. **N. Balakrishna and G. Hareesh (2009).** Statistical Signal extraction using stable processes. *Statistics and Probability Letters*, 79, 851 – 856.



- 23 **N. Unnikrishnan Nair, K.R. Muraleedharan Nair and Haritha N. Haridas (2009):** Some Properties of Income Gap Ratio and Truncated Gini Coefficient, *Journal of Culcutta Statistical Association Bulletin* (In press).
- 24 **K.C.James and M. Bhasi (2008):** Conceptual Modelling of Logistic Terminals: A Framework for Classification of Models, *Proceedings of Operational Research Society Simulation Workshop*, Worcestershire, UK, 169-178.
- 25 **P.G.Sankaran and K.Jayakumar (2008):** On proportional odds models, *Statistical Papers*, 49, 779-789, 2008.
- 26 **P.G.Sankaran and Sindu T.K. (2009):** A generalized Ord family of distributions useful in reliability analysis, *Journal of Statistical Theory and Applications*, 8, 61-74.
- 27 **P.G.Sankaran and N.Unnikrishnan Nair (2009):** Non parametric estimation of hazard quantile function, *Journal of Nonparametric Statistics* (to appear).
- 28 **G. Asha and K.M. Jagathnath Krishna (2008):** Modelling and characterizations of a bivariate Pareto distribution, *Journal of Statistical Theory and Application*, 7(4), 435-452.
- 29 **G. Asha, K.M. Jagathnath Krishna and K.R. Muraleedharan Nair (2009):** Characterization of bivariate distributions using residual measure of uncertainty, *Journal of Probability and Statistical Science* (In press).
- 30 **N. Unnikrishnan Nair and Sudheesh. K. K (2008):** Some Results on Lower Variance Bound Useful in Reliability and Estimation, *Annals of the Institute of Statistical Mathematics*, 60, 591- 603.
- 31 **N. Unnikrishnan Nair and Sudheesh. K. K (2008):** Bounding the Variance Using Chernoff-type Inequality, *Journal of the Indian Society for Probability and Statistics*, 10, 2006, 81-104.

b. List of Research Papers Communicated during the year 2008-2009

1. **N. Balakrishna:** Product form of gamma stochastic volatility models.
2. **N. Balakrishna and A.J. Lawrance:** Development of Product Autoregressive Models for bivariate survival data.
3. **G. Asha & Rejeesh C. John:** Probability models characterized by generalized reversed lack of memory property.
4. **G. Asha and K.M. Jagathnath Krishna:** A uniform representation of bivariate distributions having Freund load sharing dependence.
5. **G.Asha and P.G.Sankaran:** Characterization of distributions using backward recurrence time.
6. **K.C James and M. Bhasi,** Development Of Model Categories For Performance Improvement Studies Related To Airport Terminal Operations, *Journal Of Simulation*.
7. **K.M. Jagathnath Krishna and G.Asha:** Some properties of bivariate vitality and geometric vitality functions.
8. **K.R. Muraleedharan Nair and Abdul Sathar, E.I:** Bivariate residual entropy function and some characterization results.
9. **N. Balakrishna and Angel Mathew.** Sequential Interval Estimation of Limiting Interval Availability for Bivariate Stationary Dependent Sequences.



10. **N. Balakrishna and Sujith P:** Estimation of positive state stochastic volatility models via empirical characteristic function.
11. **N. Balakrishna, W. Schwarz and A. Barauowsky:** Stochastic and chaotic point processes.
12. **N. Unnikrishnan Nair and Sudheesh. K.K :** Some results On Variance Bound.
13. **N. Unnikrishnan Nair and Sudheesh. K.K:** Characterization of Continuous Distributions by Properties of Variance Residual Life
14. **N. Unnikrishnan Nair, K.R. Muraleedharan Nair and S. Smitha:** Applications of measures of inaccuracy in characterizing life distributions.
15. **N.Unnikrishnan Nair and P.G.Sankaran:** Association measures for bivariate survival data.
16. **P.G.Sankaran and Anisha P :** Regression models for recurrent event data under competing risks set up.
17. **P.G.Sankaran and N.Unnikrishnan Nair:** Nonparametric estimation of hazard quantile function
18. **P.G.Sankaran and Sreedevi,E.P:** Analysis of competing risk models using neural networks.
19. **P.G.Sankaran and Sreeja V.N.:** Proportional hazards model for bivariate competing risks data.
20. **P.G.Sankaran, Isha Dewan and Sreedevi E.P.** Tests of independence between causes of failure and failure time.
21. **S.M.Sunoj, P.G.Sankaran and N.U.Nair:** Some characterizations of bivariate weighted distributions in the context of reliability modeling
22. **S.M.Sunoj, P.G.Sankaran and S.S.Maya:** Identification of distributions using log odds rate
23. **S.S. Maya and S.M. Sunoj:** Some characterizations of distributions for repair time (past lifetime) in the context of size/length-biased models.
24. **S.S. Maya and S.M. Sunoj:** Some properties of measures of uncertainty in past lifetime.
25. **V. N Sreeja and P. G. Sankaran:** Analysis of recurrent event data for paired observations.
26. **V. N Sreeja and P.G. Sankaran:** Proportional hazards model for gap time distributions of recurrent events.
27. **Sreeja,V.N. and P.G. Sankaran:** Proportional hazards model for recurrent event data under informative censoring
28. **V. K. Ramachandran Nair and Stephy Thomas:** Maintenance Policy for a General Multi-State System.
29. **V.K. Ramachandran Nair and Stephy Thomas:** Joint Distribution of Runs and Occurrence of Each Outcome in Markov Dependent Multi-State Trials.
30. **V.K. Ramachandran Nair and Stephy Thomas:** Two-Phase Start-up Demonstration Tests.

**13. (a) Participation in Seminar/Conference/Refresher Courses etc by Faculty**

Name of Participant	Name of Seminar / Conference/ Workshop	Role
Prof. K.R. Muraleedharan Nair	Delivered an invited talk on 'Information and Inaccuracy', at National Workshop on Recent Advances in Decision Support Models and their Applications, S.V. University, Tirupathi, 10 - 14 December, 2008	Participant
Dr. N. Balakrishna	Presented an Invited talk on Product Autoregressive Time Series Models at the International Workshop in Applied Probability 2008, held at the Technological University of Compiègne, Compiègne, France on July 7-10, 2008	Participant
Dr. N. Balakrishna	Participated as a resource person in the workshop on Research Methodology organized by <i>Indian Homoeopathic Research</i>	Participant
Dr. N. Balakrishna	Participated as a resource person in the National Conference on Nanophotonic Materials organized by the Department of Physics, CUSAT, October 2008.	
Dr. N. Balakrishna	Attended workshop on 'Data Analysis Using R', Department of Statistics, Cochin University of Science and Technology, January 27-28, 2009, Cochin 682 022.	
Dr. N. Balakrishna	Resource person " Statistics in Economics" at the National Workshop on Statistical Techniques in Management, Social and Biological Sciences, Lingaraj College, Belgaum, 13-14, February, 2009.	
Dr. N. Balakrishna	Invited speaker on " Some Results in Financial Time Series" at National Seminar on Recent Trends in Statistics, Nehru Arts and Science College, Kanhangad, 12-14, February, 2009	
Sri. K. C. James	Delivered a talk on 'A Frame Work For Conceptual Modelling Of Logistic Terminals', Operational Research Society 4th Simulation Conference (SW08), 1-2 April 2008, Worcestershire, England	Participant
Sri. K. C. James	Attended workshop on 'Data Analysis Using R', Department of Statistics, Cochin University of Science and Technology, January 27-28, 2009, Cochin 682 022.	Participant



Dr. P.G. Sankaran	Delivered an invited talk on 'Statistical Inference' Participant in the workshop on Research Methodology organized by <i>Indian Homoeopathic Research Centre</i> held on 6 th September 2008 at Cochin.
Dr. P.G. Sankaran	Delivered an invited talk on "Statistical Inference" on Advances in Statistics, 13 th October, 2008 at Sir Syed College, Kasargode.
Dr. P.G. Sankaran	Attended workshop on 'Data Analysis Using R', Department of Statistics, Cochin University of Science and Technology, January 27-28, 2009, Cochin 682 022. Participant
Dr. P.G. Sankaran	Invited speaker on "Quantile based reliability analysis" at National Seminar on Recent Trends in Statistics, Nehru Arts and Science College, Kanhangad, 12-14, February, 2009.
Dr. S. M. Sunoj	Attended workshop on 'Data Analysis Using R', Department of Statistics, Cochin University of Science and Technology, January 27-28, 2009, Cochin 682 022. Participant
Dr. Asha Gopalakrishnan	Attended workshop on 'Data Analysis Using SPSS', Department of Statistics, Cochin University of Science and Technology, September 25-27, 2008, Cochin 682 022.
Dr. Asha Gopalakrishnan	Attended workshop on 'Data Analysis Using R', Department of Statistics, Cochin University of Science and Technology, January 27-28, 2009, Cochin 682 022. Participant

(b) Participation in Seminar/Conference/Refresher Courses etc by Students.

Name of the participant	Name of the seminar/Conference/ Workshop	Role
Jagathnath Krishna K. M.	National Seminar on Recent trends in statistics, Department of Statistics, Nehru Arts and Science College, Kanhangad, Kerala – February 12-14, 2009	Presented Paper

14. Awards/ Honours/ Fellowships etc. received: Nil.

15. Sponsored Research Projects

Sl.No.	Title	Sponsoring Agency	Amount	Investigator(s)
1.	Reliability modeling and analysis	UGC	Rs.32.00 lakhs (for 5 years)	Dr.K.R.Muraleedharan Nair
2.	Modelling and Analysis of Preventive Maintenance by Reliability Characteristics"	DST	Rs.8.35 lakhs (for 3 years)	Dr.Asha Gopalakrishnan



3. Modelling & Analysis of Financial Time Series DST 18.8 lakhs Dr. N.Balakrishna
(for 3 years)

16. Research Programmes and Activities:

SI.No.	Problem / Topic	Investigator (s)
1.	Reliability Analysis	All the faculty
2.	Discrete Reliability modeling	Dr.Asha Gopalakrishnan
3.	Time Series Analysis	Dr. N.Balakrishna

17. Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department

SI.No.	Title	Duration	Coordinator	Funding Agency
1.	National seminar on statistical Methods & Reliability Analysis	3 days	Dr. N.Balakrishna	UGS, CSIR, NBHM, DST
2.	Workshop on R		Dr. N.Balakrishna	UGC
3.	Workshop on SPSS	5 days	Dr. Asha Gopalakrishnan	OSR

18.Consultancy Work: Nil.



SCHOOL OF ENGINEERING

School of Engineering was established in 1979 as School of Technology for offering part-time M .Tech in Civil, Mechanical, Electrical and Chemical Engineering for helping practicing engineers in and around Cochin. Research activities were started from 1981 with Ph.D. Programme in Civil Engineering. This School introduced B. Tech programme in the 5 major disciplines viz Civil, Mechanical, Electronics, Computer Science and Information Technology on cost sharing basis in 1995 which played a significant role in the development of this school. Considering the increased demand of student community, this school introduced B. Tech in Safety & Fire Engineering in 1996 , Marine Engineering in 2001 and Electrical & Electronics Engineering in 2003. The Division of Marine Engineering has become an independent Department in June 2007.

At present doctoral programme is offered under Civil Engineering, Mechanical Engineering Safety & Fire Engg. and Electronics & Communication Engineering. Besides, a new research programme ME (By Research) was introduced in 2001 in all the six disciplines. At present this school has a strength of 64 doctoral, 6 Master of Engg.(By Research), 43 M. Tech (Part-Time) and nearly 2400 B.Tech students making it the largest academic unit of the University in the campus which forms 75% of the student community of campus.

The School functions through its divisions Civil, Mechanical, Electrical, Electronics, Computer Science, Safety & Fire and Information Technology.

School of Engineering has been well accepted as a research center and a major consultancy center. A number of research projects have been sanctioned to school by agencies like DST, ISRO, AICTE, UGC, Coir Board etc.

1. Programmes of Study/Research :

B.Tech
M.Tech
Ph.D

2. Faculty Members :

(I) Civil Engineering

Sl.No.	Name	Designation	Highest Academic Degree	Specialisation
1	Dr. Benny Mathews Abraham	Professor	Ph.D.	Geo Technical Engg.
2	Dr. K.S. Beena	Professor	Ph.D.	Geo Technical Engg.
3	Smt. Sobha Cyrus	Reader	M.Tech	Geo Technical Engg.
4	Sri.. Abdul Rahiman K U	Reader	M.Tech	Hydraulics
5	Sri. Arun Kumar T.	Lecturer	M.Tech	Environmental Engg.
6	Dr. Renu Pawels	Lecturer	Ph.D.	Environmental Engg.



7	Dr. Deepa Balakrishnan. S.	Reader	M.Tech	Structural Engg. & Construction Mgt.
8	Sri. Narasimha D.S.	Lecturer	M.Tech	Structural Engg.
9	Sri. Ramadas S.	Lecturer	M.Tech	Structural Engg.
10	Dr. Job Thomas	Lecturer	Ph.D.	Structural Engg.
11	Dr. Glory Joseph	Reader	M.Tech	Offshore Structures
12	Dr. Subha V.	Lecturer	Ph.D.	Housing, Building Technology
13	Dr. Deepa G.Nair	Lecturer	Ph.D.	Habitat Engg.
14	Ms. Bindu C.S.	Reader	M.Tech	Transportation Engg.
15	Mr. Roy M.Thomas	Lecturer	M.E	Environmental Engg

(2) Safety and Fire Engineering

Sl.No.	Name	Designation	Highest Academic Degree	Specialisation
1	Dr. G. Madhu	Professor	Ph.D.	Process Safety Engg, Environmental Engineering
2	Dr. M.N. Vinod Kumar	Reader	Ph.D	Safety Management, Engineering Design
3	Dr. George Mathew	Reader	Ph.D.	Fire Engineering, Structural Safety .
4	Dr. Dipak Kumar Sahoo	Reader (deputed for higher studies under QIP)	M. Tech	Construction Safety, Fire Engineering
5	Sri. A. Nirmal Job	Reader	M. Tech	Engineering Safety, Manufacturing Engg.
6	Sri. V.R. Renjith	Lecturer (Senior scale)	M. Tech	Industrial Safety Engg., Fire Engg.

(3) ELECTRICAL ENGINEERING

Sl.No.	Name	Designation	Highest Academic Degree	Specialisation
1	Dr.C.A. Babu	Reader	M.Tech	Power Electronics
2	Dr.Asha Elizabeth Daniel	Lecturer	Ph.D	Microwave Engg.
3	Smt. K.M. Sheena	Lecturer	M.Tech	Electrical Machines
4	Smt. Usha Nair	Lecturer	M.Tech	Control System
5	Smt. P.G. Latha	Lecturer	M.Tech	Energetic



(4) COMPUTER SCIENCE AND ENGINEERING

Sl.No.	Name	Designation	Highest Academic Degree	Specialization
1	Dr. David Peter S	Reader & HOD	M.Tech	Computer Science & Engineering
2	Smt. Sheena Mathew	Reader	M.Tech	Computer Science & Engineering
3	Sri. Sudeep Elayidam	Lecturer	M.Tech	Computer Science & Engineering
4	Smt. Latha R Nair	Lecturer	M.Tech	Computer Science & Engineering
5	Smt. Preetha S.	Lecturer	M.Tech	Computer Science & Engineering
6	Smt. Ancy Zachariah	Lecturer	M.Tech	Computer Science & Engineering
7	Sri. Pramod Pavithran	Lecturer	M.Tech	Computer Science & Engineering
8	Sri. Damodaran V	Lecturer	B.E.	
9	Sri. Vinod kumar P.P	Lecturer	B.Tech	
10	Smt. Sheena S	Lecturer	B.Tech	

(5) MECHANICAL ENGINEERING

Sl.No.	Name	Designation	Highest Academic Degree	Specialisation
1	Dr. P.S. Sreejith	Professor & Head	Ph.D.	On leave
2	Sri. K.P. Sankaranarayan Nair	Reader	M.Tech, MBADISE	Production Technology, Operation Mgt, Safety Mgt.
3	Dr. A.B. Bhasi	Lecturer	M.Tech, MBA, DIS	Management
4	Mr. Ajith Kumar G.	Sr.Lecturer	M.Tech	Management
5	Dr. Biju N.	Senior Lecturer	M.Tech	Production Engg.
6	Sri. Franklin John (under QIP)	Lecturer	M.Tech	Industrial Engg.
7	Sri. Gireesh Kumaran Thampi (under QIP)	Sr.Lecturer	M.Tech	Propulsion Engg.
8.	Dr. James Varghese	Lecturer	M.Tech	Thermal Engg..
9.	Dr. Jayadas N.H.	SeniorLecturer	Ph.D	Tribology
10.	Sri. Joshi P.J.	Lecturer	MS	Fluid Mechanics
11.	Dr. V.N. Narayanan Nampootheri	Lecturer	Ph.D	Manufacturing Engg.



12.	Dr. Radhakrishna Panicker M.R.	Senior Lecturer	M.Tech.	Material Engg.
13.	Mr. Saju K.K.	Senior Lecturer	M.Tech	Thermal Engg.
14.	Dr. Tide P.S.	Senior Lecturer	M.Tech	Aerospace Engg.
15.	Sri. Vincent Kuriakose (on LWA)	Lecturer	M.Tech	Production Engg.
16.	Sri. Jacob Elias	Lecturer	M.Tech, MBA	Thermal Engg.

(6) INFORMATION TECHNOLOGY

Sl.No.	Name	Designation	Highest Academic Degree	Specialization
1	Dr. Varghese Paul (On leave)	Reader	Ph. D	Computer Science Engg.
2	Dr. Philip Samuel	Reader	Ph.D	Computer Science Engg.
3	Dr. G. Santhosh Kumar	Lecturer	M.Tech	Computer Science Engg.
4	Smt. Binsu C. Kovoov	Sr.Lecturer	M. Tech	Computer Science Engg.
5	Smt. Renumol V.G.	Lecturer	M.Tech	Data Structure Networking
6	Sri. Shelbi Joseph	Sr. Lecturer	M.Tech.	E.Commerce Web Oriented Design
7	Smt. Sariga Raj	Lecturer	B.Tech	Real Time Systems AI
8	Sri. Daleesha M Viswanathan	Sr. Lecturer	M.Tech	Neural Network
9	Smt. Shalet M.P. (on leave)	Lecturer	M.Tech.	Computer Science Engineering
10	Remya mol R	Lecturer (on contract)	B.Tech.	Information Technology
11	Mrs. Reshmi M.S.	Lecturer (on contract)	B.Tech.	Information Technology
12	Mrs. Suja C Nair	Lecturer (on contract)	B.Tech.	Information Technology
13	Mrs. Aysha Noori	Lecturer (on contract)	B.Tech.	Information Technology

(7) ELECTRONICS & COMMUNICATION ENGG

Sl.No.	Name	Designation	Highest Academic Degree	Specialization
1	Dr. R. Gopikakumari	Reader and Head	Ph.D	Neural Network & Image Processing
2	Mr. Shalu Thomas (On leave)	Reader	M.Tech	Micro Electronics
3	Dr. Rekha K.James	Reader	M.Tech	VLSI



4	Dr. P. Mythili	Sr. Lecturer	Ph.D	Microwave & Genetic Algorithm
5	Dr. S. Mridula	Reader	Ph.D.	Microwave
6	Dr. Binu Paul	Reader	Ph.D.	Microwave
7	Mr.Unni A.M	Sr. Lecturer	ME	Electronics and Communication
8	Dr. Abdulla P	Lecturer	M.Tech	Microwave Electronics
9	Mr. Jibukumar M.G.	Sr. Lecturer	M.Tech	Opto Electronics
10	Mr. Premkumar C.V	Sr. Lecturer	M.Tech	Electronics and Communication
11	Ms.Anju Pradeep (On LWA for M.Tech)	Lecturer	B.Tech	Electronics and Communication
12	Ms. Shahana T.K	Sr. Lecturer	M.Tech	VLSI
13	Ms. Deepa Sankar	Sr. Lecturer	M.Tech	Image Processing
14	Ms. Babitha Roslind Jose	Lecturer	ME, MS	Micro Electronics
15	Ms. Rani Mathew	Contract Lecturer	B.E	Electronics and Communication
16	Ms. Divyasree S	Contract Lecturer	B.Tech	Electronics and Communication
17	Mr. Binesh K	Contract Lecturer	B.Tech	Electronics and Communication
18	Ms.Susmine Joseph	Contract Lecturer	BE	Electronics and Communication
19	Ms.Najmah K	Contract Lecturer	B.Tech	Electronics and Communication
20	Ms. Sony Francis	Contract Lecturer	M.Tech	Electronics Microwave
21	Preetha Chandran	Contract Lecturer	B.Tech	Sensors system Technology
22	Divya T. V.	Contract Lecturer	B.Tech	Electronics and Communication
23	Rastiha K. R.	Contract Lecturer	BE	Electronics and Communication
24	Dhanya P. K.	Contract Lecturer	B.Tech	Electronics and Communication

(8) Applied Sciences & Humanities

Sl.No.	Name	Designation	Highest Academic Degree	Specialization
1	Dr. T P. Johnson	Reader	Ph.D	Mathematics
2	Shri. Sasi Gopalan	Reader	M.Sc, M.Phil	Mathematics



3. Visiting Faculty (If any) - Guest Faculty

1) Safety & Fire Engineering :

Sl.No.	Name	Designation	Qualification	Specialisation
1.	Dr. K.V. Chacko	Chief Medical Officer, Social Hospital, Kalamassery	MBBS, DTMH, MBA	Industrial Hygiene

4. Research Scholars

Sl.No.	Name	Funding Agency	Guide	Area of Work
1.	Josephkunju Paul C		Dr. P.S. Sreejith	
2.	Roy V Paul		Dr. P.S. Sreejith	
3.	Latha P.G.		Dr. P.S. Sreejith	Impact of Energy conservation measures on power quality
4.	Devi Prasad Varma P R		Dr. P.S. Sreejith	
5.	Jacob Elias		Dr. V.N.Narayanan Namboothiri	Geotechnical Engineering Water management
6.	Ansalam Raj T G		Dr. V.N.Narayanan Namboothiri	
7.	Oommen Thomas		Dr. V.N.Narayanan Namboothiri	Modelling & Analysis of sheetfed offset printing maching
8.	Satheeshkumar K.	Nil	Dr. G. Madhu	Work related stress factors in Industry in Kerala.
9.	Rajendran C	Nil	Dr. G. Madhu	Wind Mill Technology
10.	Praveensal	Nil	Dr. G. Madhu	Human Factors Engg.
11.	Ramesh A	"	Dr. G. Madhu	Energy Management
12.	V.R. Renjith	"	Dr. G. Madhu	Hazard Analysis
13.	Mr. Mathews M Paul	Nil	Dr. George Mathew	Structural Engg.
14.	Georgekutty C.K	Nil	Dr. George Mathew	Construction Management
15.	Binu M Issac	Nil	Dr. George Mathew	Structural Engg.
16.	Prince Mathew	Nil	Dr. George Mathew	Structural Engg.
17.	Sri.Rajesh Cherian Roy	"	Dr. R. Gopikakumari	Intelligent Image processing
18.	Bhadran V	"	Dr. R. Gopikakumari	Intelligent Image processing
19.	Meenakshi	"	Dr. R. Gopikakumari	Intelligent Image processing
20.	Rajesh M V	"	Dr. R. Gopikakumari	Intelligent Image processing
21.	Ananthanarayanan S		Dr. Jagathy Raj V.P	
22.	Baby Paul	Nil	Dr. P. Mythili	Genetic algorithms & Image Processing



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23. Shanavas K T	Nil	Dr. P. Mythili	Genetic algorithms & Image Processing
24. Paul A J Nil		Dr. P. Mythili	Genetic algorithms & Image Processing
25. Babita Roslind Jose	Nil	Dr. P. Mythili	Sigma Delta modulator for wide band receivers
26. Agnes Jacob	Nil	Dr. P. Mythili	Emotional analysis using GA
27. Santhosh Kumar T.G	Nil	Dr. Benny Mathews Abraham	
28. Roy M Thomas	Nil	Dr. Benny Mathews Abraham	
29. Cyriac Davies	Nil	Dr. Benny Mathews Abraham	
30. Anitha G Pillai	Nil	Dr. Benny Mathews Abraham	Geo Technical Engineering
31. Subramania Prasad C.K.	Nil	Dr. Benny Mathews Abraham	
32. Mariamma Joseph	Nil	Dr. Babu T. Jose	
33. Ajit Haridas	Nil	Dr. Babu T. Jose	
34. Sobha Cyrus	Nil	Dr. Babu T. Jose	Fire & Safety aspects of Buildings
35. Anil K. R	Nil	Dr. K.S. Beena	Soil & Water conservation Technology using fire walls
36. Meril George	Nil	Dr. K.S. Beena	Geo environmental Studies on polluted soil
37. Bindu C.S	Nil	Dr. K.S. Beena	
38. Josephkutty Jacob	Nil	Dr. G. Madhu	
39. Ajithkumar G	Nil	Dr. M. Bhasi	
40. James K.J	Nil	Dr. M. Bhasi	
41. Vinodkumar Jacob	Nil	Dr. M. Bhasi	Quality practices of Software
42. Biju Augustine P	Nil	Dr. M. Bhasi	
43. Thankachan T. Pullan	Nil	Dr. M. Bhasi	Product devt. & concurrent Engineering
44. Jasmin E.A	Nil	Dr. Jagathy Raj V.P	
45. Pramelakumari K	Nil	Dr. Jagathy Raj V.P	
46. Shelbi Joseph	Nil	Dr. Jagathy Raj V.P	
47. Nirmal Job A	Nil	Dr. K.E. George	
48. Sunilkumar K		Dr. V. N. N. Namboothiri	Advanced modeling of the tools made off rapid proto typing



49. Anilkumar C.V	Dr. Binu Paul	Investigations on suitability of carbon Nano Tubes and its variants in Applied Electronics.
50. Praveen R.P	Dr. Jagathy Raj.V.P	Design Analysis and realization of Zero cogging motor for spacecraft applications
51. Prem Nath P	Dr. G. Madhu	Thermal and Air flow analysis of data centre air conditioning systems
52. Philip Cherian	Dr. P. Mythili	All optical digital filters/optical logic devices for optical signal processing
53. Premkumar C.V	Dr. R. Gopikakumari	Intelligent Processing
54. Mahipal D	Dr. Jayadas N.H	Enhancement of Lubricating properties of vegetable oils using raw particles
55. Sudhakara Shenoi V	Dr. G. Madhu	Maintainability and availability of equipment piping systems in process plants
56. Biju V.G	Dr. P. Mythili	Genomic Signal Processing
57. Ushakumari E.R	Dr. G. Madhu	Waste water treatment using natural and synthetic absorbents
58. Athira Ravi	Dr. Subha. V	Sustainable Development
59. Sangeetha.S	Dr. K.S. Beena	Reinforced Soil Structures
60. Sunilkumar.G	Dr. P.S. Sreejith	Investigation of crash worthiness of Honey comb core
61. Vijayakumari C.K	Dr. P. Mythili	Automated design of digital and analog circuits
62. Ambilikumar C.K	Prof. Dr. M. Bhasi	Supply chain co-ordination and mechanisms Modeling & analysis of strategic and technological issues
63. R. Mahesha Rangaraj	Dr. G. Madhu	Human Engineering effects on productivity in Indian Fabrication Industry.
64. B. Rajesh Menon	Dr. P.S. Sreejith	Evaluation of acoustic transmission loss in launch vehicle structures.



5. Administrative Personnel

Sl.No.	Designation	No.of posts
1	Joint Registrar	1
2	Assistant Registrar	1
3	Section Officers	3
4	Assistants	10
5	Peons	8
6	Pool Officer	1
7	Typist	3
8	Duplicator Operator	1
9	Librarian	2
10	Professional Assistant	1
11	Library assistant	2
12	Sweeper Cum Cleaner	2

6. Technical Personnel

Sl.No.	Designation	Grade III -I	No. of posts
1.	Technical Assistant	Grade II	3
2	-do-	Grade I	6
3	Technician	Grade I	5
4	Technician	Grade-II	3
5	Lab Attendant		4
6	HDV Driver		2
7	LDV Driver		1
8	Bus Conductor		2

7. Student Enrollment

Sl.No.	Programme of study	Men	Women	Total
1	Ph.D	11	3	14
2	M.Tech (PT)			
	Civil Engg.	11	3	14
	Chemical	13	1	14
	Mechanical	15	-	15
3	B.Tech (Civil)	73	20	93
4	B.Tech (Safety & Fire)	31	0	31
5	B.Tech (EEE)	53	11	64
6	B.Tech Computer Sciences	72	22	94



7	B.Tech (Mechanical)	93	0	93
8	B.Tech (IT)	69	26	95
9	B.Tech (Electronics & Communication Engg.)	77	19	96
		518	105	623

8. Research Facilities

a. Laboratories (List out Major equipments available)

1. Universal Testing Machine
2. Compression Testing Machine
3. Torsion Testing Machine
4. Hardness Testing Machine
5. Spectro photometer
6. Total Station (survey instrument) etc.
7. Industrial Hygiene Laboratory
8. Novell Netware LAN lab
9. Data Structure Lab
10. O/S & Network lab
11. CAD/CAM Lab, Thermal Lab, Hydraulics Lab, Metrology Lab
12. Multimedia Lab
13. PC H/W Lab
14. 20 MHz Digital storage CRO
15. Logic Analyser
16. EPROM Programmer
17. Spectrum Analyzer
18. Sun Workstation
19. 6KVA UPS
20. 500Mhz Digital Phosphor Oscilloscope
21. PCB Film maker
22. PCB curing Machine
23. PCB Etching Machine
24. PCB Drilling Machine
25. Roller tinning Machine
26. Shearing Machine
27. DSP starter Kit
28. VLSI Trainer Kit
29. PIC 16F877 Development Board
30. Embedded system Development kit



b) Library

No. of Books/Journals on 31 st March of previous year	Additions during the year
Books : 19302 Journals : 12	Books : 1292 Journals : 2

c) Others : Nil

9. Distinguished visitors

- | | | |
|-------------------------|---|---|
| 1. Prof.A.Sridharan | Hon.Professor, IISc.Bangalore | |
| 2. Dr.A.Sukumaran | Project Engineer, Canada | |
| 3. Prof. G. Srinikethan | Prof. of Chemical Engg. & Dean (academic) National Institute Technology Karnataka Surathkal | Delivered the National SafetyDay Lecture on 4 th March 2008. |
-

10. Ph.Ds Awarded

Sl.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1.	Time series Analysis of Metal Cutting Process using chaos theory incorporating recurrence plots.	Rajesh.V.G	Dr.V.N.Narayanan Namboothiri

11. Publications

a) Papers

- | Sl.No. | Name of Paper |
|--------|---|
| 1. | Deepa.G.Nair - A structural investigation relating to the pozzolanic activity of rice husk ashes Cement and concrete research, vol 36, issue 6, june 2008, pg 861-868 |
| 2. | a) Subha Vishnudas, Hubert H.G. Savenije, Pieter van der Zaag, Kunnathu R. Anil, Krishnan Balan, (2008) Participatory research using coir geotextiles in watershed management - A case study in south India, Physics and Chemistry of the Earth, Volume (33), Issues 1-2,Pages 41-47
b) Subha Vishnudas. Hubert H.G. Savenije, Pieter Van der Zaag, C.E. Ajith Kumar K.R. Anil, (2008) Sustainability analysis of two participatory watershed projects in Kerala, Physics and Chemistry of the Earth Volume 33,Issues 1-2 pages 1-12.Bochum Germany,September 2006) IAHS Publ.317. |
| 3. | K.S. Beena - 1. Testing Coir geotextile drains for soft ground improvement 2. Rut behaviour of Coir Geotextiles Reinforced unpaved roads |
| 4. | a) Glory Joseph and K.Ramamurthy, Workability and strength behaviour of concrete with cold-bonded fly ash aggregates, Materials and structures, RILEM, 2008
b) Glory Joseph and K.Ramamurthy, Mixture composition on permeation characteristics of cold-bonded fly ash aggregate concrete journal of ASTM International
c) Glory Joseph and K.Ramamurthy, Effect of cold-bonded fly ash aggregate on workability and mechanical properties of concrete, journal of institution of Engineers (India). |



- d) Glory Joseph and K.Ramamurthy, Strength and permeation characteristics of cold-bonded fly ash aggregate concrete, Proceedings of International Conference on Sustainable Concrete Construction, India, 8-10 Feb 2008, 125-131
5. David Peter S, Suman Mary Idicula, K.Poulose Jacob, "A study on the Complexities Involved in a Multiparty IT outsourcing Environment", Proceedings of the International Conference on Information Systems Technology and Management, Chandigarh, India, July 2006.
- 6 Analysis of the Cold Flow Properties of Additive added and Chemically Modified Coconut Oil Using Differential Scanning Calorimetry (DSC), IISc Centenary –International Conference on advances in Mechanical Engineering (IC-ICAME 2008), Ajithkumar.G.Jayadas NH
- 7 Speckle metrology based study on the effect of chattering on machined surfaces, V.N.N. Namboothiri, Praveen Cheriyan Ashok, Usha Nair, Varun Das and V.P.Namboori. SPIE International Society for Optical Engineering.
- 8 "Systems Approach for Testing concurrent programs", Philip Samuel, Won Best Paper Award for technical session, In Proceedings of NCSD 2008, BHU, Pages 95-102
- 9 "Design of Hardware locks to prevent Piracy in software systems", Philip Samuel, In proceedings of National Conference on Systems Thinking 2008, pages 135-140
- 10 "Message Dependency Analysis on UML Sequence Diagram" Philip Samuel, In proceedings of International Conference on Emerging Technologies 2008, Rajkot, pages 1950-1956
- 11 "Call Site probing for Detecting Errors in Object Oriented Programs" Philip Samuel In Proceedings of ICETAETS 2008, pages 1167-1172
- 12 "Generation of Control Flow Graph from UML Iteration Diagram" Philip Samuel, In proceeding of National Conference on Software Engg & Applications, Salem pages 297-304
- 13 "Issues in Testing Object Oriented Softwares" Philip Samuel, In Proceeding of Codeclave, 2008 pages 322-327
- 14 "RNS based Programmable Multi-mode Decimation Filter for WCDMA and WIMAX", Accepted for 2008 IEEE 67th Vehicular Technology Conference: VTC 2008-spring 11-14 May 2008, Marina Bay, Singapore.
- 15 "Dual-Mode RNS based Programmable Decimation Filter for WCDMA and WLANa", Accepted for IEEE International Symposium on Circuits and Systems (ISCAS 2008), Washungton, USA, 18-21 May 2008.
- 16 On the lattice of stratified L-topologies, The journal of fuzzy mathematics Vol.16, No.1 2008, Los Angeles.
- 17 Lattice of weakly induced L-topologies vol.16, No.1 2008 Los Angeles.
-

**12. Sponsored Research Projects**

Sl.No.	Title	Sponsoring Agency	Amount	Investigator(s)
1	Potentialities of coir on the consolidation of soil	Coir Board of India	9.26 lakhs	Smt.Sobha Cyrus
2	Study on use of coir bhoovastra in pavements	Coir Board of India	7.6 lakhs	K S Beena
3	Improvement of teaching and networking facility in civil engineering department	DSI New Delhi	13 lakhs	Dr. Benny Mathews Abraham
4	Grouting: An economical method for Effective Utilization of Water Resources and for improvement of foundation soils	AICTE	7.05 lakhs	Dr. Benny Mathews Abraham
5	Modernisation of Industrial Hygiene Laboratory under MODROBS scheme.	AICTE	Rs.13.5 lakhs	Dr.G. Madhu
6	Design of Compact Micro strip Antenna Configurations using Genetic Algorithm	KSCSTE	Rs.9,90000	PI - Dr. P. Mythili Co-Inv-Dr. Binu Paul and Dr. S. Mridula
7	Fractal image compression using Neural networks	ISRO (3 rd year grant pending	Rs.9,63,000	Dr. R. Gopikakumari
8	Bioactive coatings	AICTE	10,50,000	Dr. P.S. Sreejith, Saju K.K.

13. Research Programmes and Activities

Sl.No.	Problem/Topic	Investigator(s)
1	Solar Energy	Dr.James Varghese
2	Intelligent Image Processing	Dr. R. Gopikakumari
3	Digital Signal Processing	Dr. R. Gopikakumari
4	Microwave Antennas, Signal processing, Genetic Algorithm	Dr. P. Mythili
5	Audiology	Dr. R. Gopikakumari
6	VLSI implementation of Digital Filters for Wireless communication transceiver	Shahana T.K.
7	Sigma - delta ADCs for Wideband Receivers	Dr. P. Mythili, Babitha Roslind Jose

14. Consultancy Work : Nil



SCHOOL OF ENVIRONMENTAL STUDIES

School of Environmental Studies was established in the year 1980 with an objective to serve as a centre imparting high quality environmental education. M.Sc. Degree course in Environmental Studies was started in 1986. This course was discontinued in 1999. From 1999 onwards, the School offers M.Sc. Degree Course in Environmental Technology with two distinct streams: Stream 1: Environmental Engineering & Stream 2: Environmental Biotechnology. Putting a milestone in the march of progress, a Centre dedicated for health of aquatic animal named as National Centre for Aquatic Animal Health, NCAAH (formerly Centre for Fish Disease Diagnosis and Management) was incepted in January 2000. (For more details on NCAAH, please see Annexure). NCAAH was sanctioned with an M.Tech. programme in Marine Biotechnology by Department of Biotechnology (DBT), Government of India. This programme was started in 2008 – 09 financial year. It is funded by DBT and in support of this University Grants Commission had provided two positions of Lecturers that were filled during the same period.

The School offers Ph.D. program in related areas. The School has all essential infrastructure facilities to run the academic programs and consultancy in related areas. The School's sectional library has an exclusive collection of reference books consisting of 2130 titles and subscribes 16 journals.

During the year 2006, Rajiv Gandhi Chair was established. The Ministry of Human Resources Development (MHRD), Government of India established 10 Rajiv Gandhi Chairs in Central and State Universities all over the country to implement the dream projects of Sri. Rajiv Gandhi, the former Prime Minister of India. The themes of the Chairs include Panchayat Raj Systems & Local Governance., Women's Empowerment, and Impact of Technology on Society, Eco-systems & Sustainable Development, Livelihood & Food Security., Nuclear Disarmament & Peace Studies., Tribal Development., Protection of Child Rights., Social Justice., Secularism and Nation Building. Cochin University of Science and Technology, Kochi was identified as one among the prestigious ten Universities in the Country to hold the Chair and the thrust area identified for the Chair at CUSAT was 'Ecosystems and Sustainable Development'.

The School has also achieved a grant of Rs. 75 lakhs under the FIST programme.

1. Programme of study/Research:

1. M.Sc. Environmental Technology: Stream 1: Environmental Engineering
Stream 2: Environmental Biotechnology
2. M.Tech. Marine Biotechnology (Sponsored by DBT – 4 semesters)
3. Ph.D. Programme

**2. Faculty Members:**

Sl.No.	Name	Designation	Qualification	Specialization
1	Dr. Suguna Yesodharan	Reader & Director	M.Sc., Ph.D.	Environmental Chemistry
2	Dr. I.S. Bright Singh	Professor & Dean	M.Sc. Ph.D.	Environmental Microbiology
3	Dr. E.P. Yesodharan*	Professor	M.Sc., Ph.D., M.B.A.	Environmental Studies
4	Dr. Ammini Joseph	Reader	M.Sc., Ph.D.	Algology/ Environmental Biology
5	Dr. M.V. Harindranathan Nair	Lecturer (Sr.Scale)	M.Sc., Ph.D	Meteorology, Air Pollution Environmental Management
6	Dr. Rajathy Sivalingam	Reader Toxicology	M.Sc., M.PhilPh.D	Environmental
7	Dr. V. Sivanandan Achari	Lecturer Chemistry	M.Sc., M.PhilPh.D	Environmental
8	Sri. M. Anand	Lecturer (Sr.Scale)	M.Sc, M.Phil	Environmental Biotechnology

*On deputation to the Kerala State Council for Science, Technology and Environment as Executive Vice President

3. Visiting Faculty:

NIL

4. Research Staff:

Sl.No.	Name	Designation	Qualification	Specialization
1	Dr. B. Sathyanathan	Technical Officer Gr. I	B.Sc., AIC, Ph.D.	Toxicology
2	Dr. Rajalekshmi Subramanian	Technical Officer Gr. I	M.Sc., Ph.D.	Toxicology
3	Dr. Suja P. Devi Priya	CSIR-RA (till 1/2/2009) & DST - Woman Scientist-A (from 2/2/2009 onwards)	M.Sc., Ph.D.	Environmental Technology

5. Research Scholars:

Sl.No	Name	Supporting agency	Supervising Guide	Area of Research
1	Subitha Prabhakaran, O.P.	Govt. of Kerala	Dr. A. Mohandas	Water Quality
2	Renjith. K.	WelcomeTrust	Dr. I.S. Bright Singh	Microbiology



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3	Seena Jose	DBT	Dr. A. Mohandas & Dr. I.S. Bright Singh	Microbiology
4	Jaison C.A.	Part time	Dr. V. Sivanandan Achari	Environmental Chemistry
5	Deepesh V.	ICAR	Dr. I.S. Bright Singh	Microbiology
6	Dipson P.T.	UGC	Dr. Harindranathan Nair M.V.	Environmental Management
7	Anil Loveson	Part time	Dr. S. Rajathy	Environmental Toxicology
8	Surekha mol I.S.	CUSAT	Dr. I.S. Bright Singh	Environmental Biotechnology
9	B. Sreelakshmi	CUSAT	Dr. I.S. Bright Singh	Environmental Biotechnology
10	Charles Thomas K.	CUSAT	Dr. I.S. Bright Singh & Dr. K.G. George	Environmental Biotechnology
11	Divya Jose	CUSAT	Dr. A. Mohandas & Dr. I.S. Bright Singh	Environmental Biotechnology
12	Jose Melvin P.L.	Part time	Dr. V. Sivanandan Achari	Environmental Chemistry
13	Sherly Thomas	Part time	Dr. M.V. Harindranathan Nair	Waste Management
14	Haseeb M.	DBT	Dr. I.S. Bright Singh	Microbiology
15	Rose Mary Jose	NCAAH	Dr. I.S. Bright Singh	Microbiology
16	Sunitha Paulose	DBT	Dr. I.S. Bright Singh	Microbiology
17	Shyam Kumar R.	CUSAT	Dr. S. Rajathy & Dr. A. Mohandas	Toxicology
18	Anand M.	Part time	Dr. Ammini Joseph & Dr. I.S. Bright Singh	Molecular biology
19	Prem Gopinath	CUSAT	Dr. P. Natarajan & Dr. I.S. Bright Singh	Microbiology
20	Divya Shivaji	Full-Time	Dr. Ammini Joseph	Environmental Biotechnology
21	Jayesh P.	Full-Time	Dr. I.S. Bright Singh	Microbiology
22	Riya George	Full-Time	Dr. Rob H. Reed & Dr. I.S. Bright Singh	Microbiology
23	Ammu Thomas	Full-Time	Dr. Rob H. Reed & Dr. I.S. Bright Singh	Microbiology
24	Deepa G.D.	Full-Time	Dr. Dr. A. Mohandas & Dr. I.S. Bright Singh	
25	Haneesh K.R.	Part-Time	Dr. Harindranathan Nair M.V.	Environmental Management



26	Sareen Sarah John	Full-Time	Dr. I.S. Bright Singh	Microbiology
27	Arun Augustin	Full-Time	Dr. P. Natarajan	Environmental Biotechnology
28	Deepa S. Nair	Full-Time	Dr. P. Natarajan	Microbiology
29	Mercy Thomas	Part-Time	Dr. V. Sivanandan Achari	Environmental Chemistry
30	Pragath M.	Part-Time	Dr. Suguna Yesodharan	Environmental Management
31	Smitha S.V.	Full-Time	Dr. M.V. Harindranathan Nair	Environmental Management
32	Bindia Ravindran	Full-Time	Dr. V. Sivanandan Achari	Environmental Chemistry
33	Aneesh Kumar K.V.	Full-Time	Dr. Bijoy Nandan	Environmental Biology
34	Rojith G.	Full-Time	Dr. I.S. Bright Singh	Microbiology
35	Paul A.P.	Part-Time	Dr. M.V. Harindranathan Nair	Environmental Management
36	Nisha B. Chandran	Full-Time	Dr. Suguna Yesodharan	Environmental Chemistry
37	Pillai Raji K.	Full-Time	Dr. P. Natarajan	Microbiology
38	Rakesh V.B.	Full-Time	Dr. Ammini Joseph	Ecology
39	Smitha Sebastian	Full-Time	Dr. Ammini Joseph	Ecology

6. Administrative Personnel

Sl.No.	Designation	No. of posts
1	Section Officer	1
2	Assistant	2
3	Typist/Steno	1
4	Peon	1
5	Sweeper-cum-Cleaner	1

7. Technical Personnel

Laboratory Assistant – 1

8. Students enrollment

Sl.No.	Programme of study	Men	Women	Total
1	M.Sc.	4	20	24
2	M. Tech. Marine Biotechnology (conducted at National Centre for Aquatic Animal Health)	2	4	6
3	Ph.D.	19	20	39



9. Research facilities

a) Laboratory:

- (1) Environmental Chemistry Research Laboratories - 2
- (2) Environmental Engineering Laboratory-1
- (3) Environmental Management Laboratory - Centre for Remote Sensing - Environmental Resource and Disaster Management-1
- (4) Environmental Microbiology Laboratory-1
- (5) Algal Biotechnology Laboratory-1
- (6) Environmental Toxicology Laboratory-1
- (7) Environmental Virology Laboratory-1
- (8) Environmental Biotechnology Laboratory-1
- (9) Molecular Biology Laboratory-1

b) Centre:

National Centre for Aquatic Animal Health, Lakeside Campus, CUSAT, Kochi-16

c) Practical Halls

Environmental Chemistry
Environmental Biology & Toxicology

d) Library: No. of books on 31 st March 2009	:	2130
Additions during the year	:	119
Journal	:	16

10. Distinguished Visitors:

Sl. No.	Name	Affiliation	Remarks
1	Dr. Sharifah Munirah Alatas National University of Malaysia, MALAYSIA	Associate Professor Strategic and Security Studies Programme, School of History, Politics and Strategic Studies, National University of Malaysia, 43600 UKM Bangi, Selangor, MALAYSIA	Lectured on ' <i>India and Malaysia: Overcoming Environmental Crises since the end of Coldwar</i> ' On 23-06-2008 Program Co ordinator: Dr. V. Sivanandan Achari
2	Dr. T. R. Sreekrishnan IIT., New Delhi	Professor, Department of Biochemical Engineering and Biotechnology Indian Institute of Technology New Delhi	Lectured on ' <i>A Novel Anaerobic Bioreactor for Wastewater Treatment</i> ' on 09 - 07 - 2008 Program Coordinator: Dr. V. Sivanandan Achari

**11. Ph.D. awarded:**

Sl.No.	Title of thesis	Research Scholar	Supervising Guide
1	Studies on the effects of toxic heavy metal mercury on the physiology and biochemistry of an estuarine crab <i>Scylla serrata</i> . (Forskal)	Shaganas Banu.	Dr. S. Rajathy
2	Development of nitrifying and photosynthetic sulphur bacteria based bioaugmentation systems for the bioremediation of ammonia and hydrogen sulphide in shrimp culture	Manju. N.J.	Prof. I.S. Bright Singh

12. Publications:**(a) Papers****(i) In Peer Reviewed Journals (International)**

1. Manjusha K., Divya Jose, Seena Jose Priyaja .P. Sreelakshmi. , Saramma A.V. **Singh ISB** (2009) Purification and characterization of alkaline protease from a non-toxicogenic environmental isolate vibrio V26. Process biochemistry (Accepted, Online first). **Impact Factor: 2.3**
2. Manjusha M., Resmy Varghese, Rosamma Philip , A. Mohandas, **I.S. Bright Singh** Pathological changes in *Fenneropenaeus indicus* experimentally infected with white spot virus and virus morphogenesis. Journal of Invertebrate Pathology (Accepted, Online first) **Impact Factor: 1.4**
3. Manju NJ., Deepesh V, Achuthan C, Philip, R, **Singh ISB** (2009) Nitrifying bacterial consortia immobilized on wood particles for bioremediation in shrimp culture systems. Aquaculture (In Press) **Impact Factor: 1.73**
4. Abdulaziz Anas, Douglas W Lowman, David L Williams, Stewart Millen, Srinivas Somnath Pai, Thavarool Puthiyedathu Sajeewan, Rosamma Philip, **I. S. Bright Singh** (2009) Alkali insoluble glucan extracted from *Acremonium diospyri* is a more potent immunostimulant in the Indian White Shrimp, *Fenneropenaeus indicus* than alkali soluble glucan . Aquaculture Research (Accepted online) **Impact Factor:1.0**
5. Kumar VJR, Achuthan C, Manju NJ, Philip, R, **Singh ISB** (2008) Activated packed bed bioreactors (PBBR) for the rapid nitrification in brackish water hatchery systems. Journal of Industrial Microbiology and Biotechnology 36: 355-365. : **Impact Factor: 1.7**
6. Kumar VJR, Achuthan C, Manju NJ, Philip, R, **Singh ISB** (2008) A stringed bed suspended bioreactor (SBSBR) for in situ nitrification in penaeid and non-penaeid hatchery systems. Aquaculture International . **Impact Factor:1.0**
7. Kumar VJR, Achuthan C, Manju NJ, Philip, R, **Singh ISB** (2008) Mass production of nitrifying bacterial consortia for establishing instantaneous nitrification in saline recirculating aquaculture systems. World Journal of Microbiology and Biotechnology 25: 407-414. **Impact Factor:0.8**
8. Anas A, Philip R, **Singh ISB** (2008) Chitosan as a wall material for a microencapsulated delivery system for *Macrobrachium rosenbergii* (de Man) larvae. Aquaculture Research 39:885-890, **Impact Factor: 1.0**
9. Suja P. Devi Priya and **Suguna Yesodharan** (2008), Photocatalytic degradation of chemical Pollutants in water using TiO₂ and ZnO with special reference to phenol. Journal of Environmental Biology(accepted)



(ii) In Journals(National):

10. Divya,S. and **Ammini Joseph** (2008), Water quality and benthic microalgal biomass of a brackish water growth farm. *Indian hydrobiology*, 11: 247-254.
11. **Subramanian Rajalakshmi and Ambat Mohandas** (2008). Impact of mercury on the activity pattern of a marker enzyme in a freshwater bivalve. *The Environmentalist* 28: 249-252.

In Conferences/Seminars(National and International):

12. **Nisha B.chandran.Suguna Yesodharan and Rajathy, S**, 2008 - Impact of Industries on the Quality of ground water in Eloor - Manjummal - Edayar area. - presented at the National Seminar on Aquatic Chemistry held in the Department of Chemical Oceanography, School of Marine Sciences, Kochi during March 26-28, 2009
13. **V. Sivanandan Achari** and Bindia Ravindran (2009). *Phosphate uptake by black sand rich soils from Tsunami affected Lapped Coast of Karalla: A modeling approach*, Seminar Proceedings - National Conference on Aquatic Chemistry, Organized by Society of Aquatic Chemists and Department of Chemical Oceanography, Cochin University of Science and Technology, Kochi, India, p.22
14. **V. Sivanandan Achari** *Free Space in Mayonic Science: A Tradition of Free Knowledge*, Conference Souvenir- National Conference on Free Software, 15-16 November 2008, Kochi, Organised by Cochin University of Science and Technology, Cochin, India, pp 55-38.
15. **M. Anand**, In - vessel composting of food waste, Abstract: U.G.C. Sponsored National Seminar on Environmental Biotechnology: Challenges and Opportunities ENVIROTECH 2008. 17th and 18th September 2008, organized by Post Graduate Department of Zoology, Sree Narayana Colege, Nattika, Thrissur Pin 682 566. p. 2.
16. **M. Anand**, Integrated/Decentralised Solid Waste Management - An Overview, National Seminar on Decentralised Waste Management 2008 April 7-8, CRDAT, Cochin University of Science and Technology, Cochin - 682 022.
17. **M. Anand**, Integrated sustainable waste management, International workshop on The sustainable City - Technologies and Systems for Sustainable development organized by INSTEC (Network for Indian - Swedish cooperation on Technical Research and Education) in collaboration with Cochin University of Science and Technology at the School of nvironmental Studies, CUSAT, Kochi, on 10-12, December 2008.

(b) Books:

1. **V. Sivanandan Achari** and G.Santhoshkumar (2009). Editors. *Conference Souvenir- National Conference on Free Software*, 15-16 November 2008, Kochi, Organised by Cochin University of Science and Technology, Cochin, India.
2. **V. Sivanandan Achari** (2008). *Plastic: Expectations and Crises*, In **GRAMEENAM** [Collection of Articles on Environmental Science] Editor: Dr. Anilkumar Vadavathoor], Published by Cochin University of Science and Technology, Cochin, India.

(d) Any other : NIL

**13. Participation in Seminar / Conference / Refresher Courses etc. by the Faculty Students / Staff**

Participant(s)	Programme	Role
Dr.Rajalakshmi Subramanian	National Science Day Celebrations on 2 nd March 2009 sponsored by Shakthi and Central Institute of Fisheries Technology, Kochi and held at School of Environmental Studies, CUSAT, Kochi.	Co-ordinator
Dr. S. Rajathy, Dr.Suguna Yesodharan		Participated
Dr. S. Rajathy Dr. B. Sathyanathan Dr. Suguna Yesodharan	A novel anaerobic reactor for waste water treatment in collaboration with Dept. of Biochemical Engineering, Indian Institute of Technology, New Delhi at the School of Environmental Studies, CUSAT, Kochi-22	Participated
Dr. S. Rajathy Dr. B. Sathyanathan Dr. Suguna Yesodharan	International Workshop on the Sustainable City - Technologies and Systems for Sustainable development conducted by INSTEK Network for Indian - Swedish Co-operation on Technical Research Education at the School of Environmental Studies, CUSAT, Kochi-22.	Participated
Dr. S. Rajathy Dr. B. Sathyanathan Dr. Suguna Yesodharan	Photo-exhibition and Seminar on Dying Periyar, Age, Climate change conducted by Centre for Science Communication at the School of Environmental Studies, CUSAT, Kochi-22.	Participated
Dr. S. Rajathy Dr.Suguna Yesodharan & Nisha B.chandran	National Seminar on Aquatic Chemistry (Aquasim 09), organized by Department of Chemical Oceanography, CUSAT, Kochi and Society of Aquatic Chemists held during 26- 28 March 2009.	Participated & paper accepted for presentation
Dr. B. Sathyanathan Dr. V. Sivanandan Achari		Participated Participated
Dr. S. Rajathy Dr. B. Sathyanathan	National Seminar on Bioactive Compounds from marine organisms organized by the Department of Marine Biology, Microbiology and Biochemistry at the School of Marine Sciences, CUSAT, Kochi-22.	Participated
Dr. S. Rajathy Dr. B. Sathyanathan	Seminar on metal oxide nano structures, Design, Electronic Structures and applications at the School of Environmental Studies, CUSAT, Kochi-22.	Participated



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Dr. S. Rajathy, Dr.B. Sathyanathan	Seminar on Chandrayan at the Department of Atmospheric Sciences, School of Marine Sciences, CUSAT, Kochi-16.	Participated
Dr. Suguna Yesodharan Dr.B. Sathyanathan	Kerala Science Congress held at Kollam during Jan. 28-31, 2009	Participated
Dr. Suguna Yesodharan, Dr.B. Sathyanathan	International Workshop on 'The Sustainable city. Technologies and systems for sustainable development' organized by INSTEK (Network for Indo-Swedish Co-operation on Technical Research Education) held at School of Environmental Studies, CUSAT.	Participated
Dr. V. Sivanandan Achari	International Conference on Advanced Materials (ICAM- 2008), School of Chemical Sciences, MahatmaGandhi University, Kottayam February, 18- 21, 2008	Participated & Presented a paper: <i>John-Sivanandan Achari Plots for Liquid Phase Adsorption: Evaluation of Structural Parameters for Type I Isotherm.</i> [ORAL PRESENTATION
Dr. V. Sivanandan Achari	International Workshop on the Sustainable City - Technologies and Systems for Sustainable Development organized by INSTEC [Network for Indian- Swedish cooperation on Technical Research and Education] in collaboration with SES, CUSAT, Kochi, India on 10-12 December 2008.	Participated & Presented a Paper: <i>Biomedical Waste Management: Quantification & Treatment Strategy</i> [ORAL PRESENTATION
Dr. V. Sivanandan Achari	Two – Day Joint Academies Lecture Workshop on Analytical Chemistry and Environmental Sciences organized by IIITM-K and Mar Ivanios College, Thiruvananthapuram on 11 - 12 th December, 2008	Invited Lecture: <i>Modeling Concepts for Analytical Chemists and Chemical Engineers</i>



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Dr. V. Sivanandan Achari	National Conference on Free Software - 2008 Organised by Cochin University of Science and Technology, Kochi on 15-16 November 2008,	Participated & Worked as Souvenir Committee Chairman & Souvenir Editor
Dr. V. Sivanandan Achari	Seminar Lecture at School of Chemical Science, Kannur University, Payyanur Campus, Edat, Kannur On 28 th November, 2008	Invited Lecture: <i>Applied Statistics in Analytical Chemistry</i>
Dr. V. Sivanandan Achari	Seminar Lecture: Two Day Seiminar on General Awarness on Environment organized by Department of Electronics, Model Engineering College, Ernakulam under TEQIP Program on 4 th February, 2009	Invited Lecture: Solid Waste Management
Dr. B. Sathyanathan	International Conference on Sustainable agriculture, by Green Environment 2008, CMS College, Kottayam	Participated
Dr. B. Sathyanathan	Seminar on climate change by centre for Environmental Education and Technology, Kottayam	Participated
Dr.B. Sathyanathan Dr.S. Rajathy	Photoexhibition and Seminar on 'Dying Periyar, Age, Climate and Rain by Centre for Science Communication, CUSAT, Kochi	Participated
Dr. B. Sathyanathan	Swadeshi Science Congress by Rajiv Gandhi Centre for Biotechnology	Participated
Dr.Rajalakshmi Subramanian	Group Monitoring Workshop for the STARD Project 'Bioconversion of water hyacinth for sustainable livelihood' under DST organized by Gujarat Institute of Developmental Research during 24 th - 26 th November 2008	Participated
Dr.Suja P.Devi Priya	National Level Training Workshop on Trace Analysis of Pesticides and Pharmaceuticals (ENTRAPP'08) during 24 th - 26 th September 2008	Participated

14. Awards/Honours/Fellowships etc. received:

Name of Awardee	Particulars
Dr. I.S. Bright Singh	1. Regional Expert of NACA in Shrimp Diseases 2. Visiting Professor in Microbiology for the period 2001 to 2008 at University of Northumbria, New Castle upon Tyne, United Kingdom 3. Eminent Zoologist Gold Medal from Zoological Society of India
Dr. B. Sathyanathan	Elected as Fellow of the Institution of Chemists(India), Calcutta2.

**15. Sponsored Research Projects:**

Sl.No	Title	Sponsoring Agency	Amount	Investigator(s)
Implemented at School of Environmental Studies				
1	Semiconductor Oxides Mediated Photocatalytic Purification of Water Containing Chemical Pesticides and Bacterial Pollutants (June 2006 - May 2009)	OPCW	USD.14,455	Dr. Suguna Yesodharan
2	Bioconversion of water hyacinth for Sustainable livelihood	DST	Rs.4,52,220	Dr. Suguna Yesodharan (PI) & Dr. Rajalakshmi Subramanian (Co-PI)
3	Heterogeneous Photocatalytic treatment of Chemical and Bacterial pollutants from waste waters	DST	Rs.16,08,000/-	Dr. Suja P. Devipriya (PI)
4	EIA of Petroleum hydrocarbons in the Vembanad Estuary	KSCSTE, Govt. of Kerala	Rs.11,70,000/-	Dr. Ammini Joseph, Dr. Rajalakshmi Subramanian & Dr. A. Mohandas
5	Assessment of salt and nutrient uptake capacity of heavy mineral coastal sediments of tsunami affected areas of Kerala. [<i>Project Completed. Report submitted</i>]	Kerala State Council for Science, Technology and Environment	Rs.1,76,000/-	Dr. V. Sivanandan Achari
6	Development of Bioreactor Technology for Bioconversion of Coir Pith: Isolation and Screening and Identification of Appropriate Microorganisms	Dept. of Biotechnology, New Delhi	Rs.16,81,000/-	Prof. I.S. Bright Singh
Implemented at National Centre for Aquatic Animal Health				
1	Identification and removal of blocks on in vitro transformation & establishment of cell lines from <i>Penaeus monodon</i> (Oct.2007 - Sept. 210)	Dept. of Biotechnology, Government of India	Rs.31,76,000/-	Prof. I.S. Bright Singh
2	Development of anti WSSV drugs from mangrove plants endemic to Indian coastal zone (October 2006 - September 2009)	Dept. of Biotechnology, Government of India	Rs.37,45,000/-	Prof. I.S. Bright Singh
3	Metagenomic approaches to evaluation of the diversity of nitrifying bacterial community in the sediments of zero water exchange system shrimp ponds (March 2008 - February 2011)	Dept. of Science & Technology, New Delhi	Rs.13,68,000/-	Dr. Valsamma Joseph



- | | | | | |
|---|---|--|-------------------------|---|
| 4 | Nitrifying bioreactors integrated into prawn hatchery systems: Biofilm structure, population dynamics, & kinetic modeling programme support in marine biotechnology (August 2006 - July 2009) | Dept. of Science and Technology, Government of India | Rs.20,32,420/- | Prof. I.S. Bright Singh |
| 5 | Programme Support in Marine Biotechnology (April 2006 - July 2008) | Dept. of Science & Technology, New Delhi | Rs.1,39,00,000 | Prof. I.S. Bright Singh |
| 6 | Development and application of CMG family recombinant hormones, their antagonists and RNA technique for induced maturation and spawning of <i>Penaeus monodon</i> . In collaboration with Central Institute of Brackishwater Aquaculture, Chennai and Dept. of Zoology, Calicut University, Calicut (Oct. 2005 - Sept. 2008) | Dept. of Biotechnology, Govt. of India. | Rs.1,38,31,000/- | Prof. I.S. Bright Singh |
| 7 | Design modification and commercialization of nitrifying bioreactor technology for the establishment of organic recirculation prawn seed production system (Phase -1) September 2007 - August 2010) | Dept. of Biotechnology Govt. of India. | Rs.10,37,000/- | Prof. I.S. Bright Singh |
| 8 | Expression of virulence of <i>Vibrio harveyi</i> in organic recirculation prawn seed production system (ORPSPS) | University Grants Commission | Rs.9,27,000/- | Prof. I.S. Bright Singh |
| 9 | EIA and Petroleum Hydrocarbon in Vembanad Estuaries | KSCSTE | Rs.11,70,000/- | Dr. Ammini Joseph, Dr. Rajalakshmi Subramanian and Dr. Mohandas |

16. Research programmes and activities (2008-09)

Sl. No	Research Scholars Name	Guide	Area of Research
1	Rojith	Prof. I.S.Bright Singh	Microbial removal of lignin from coir pith
2	Haseeb, M.	Prof. I.S.Bright Singh	Bioremediation in zero water exchange shrimp culture system
3	Subitha Prabhakaran, O.P.	Dr. A. Mohandas	Characterization and control of algal growth in aquaria and recreational ponds
4	Renjith, K.	Dr. I.S. Bright Singh & Dr. Rob H. Reed	Development and evaluation of small scale solar treatment system for contaminated drinking water



5	Seena Jose	Dr. A. Mohandas & Dr. I.S. Bright Singh	Shrimp Cell and Tissue Culture
6	Jaison C.A.	Dr. V.Sivanandan Achari	Adsorption characterization of some activated carbon solids and process optimization studies in purification techniques
7	Deepesh V.	Dr. I.S. Bright Singh	Detritus Management in Shrimp Culture Systems
8	Dipson P.T.	Dr. M.V. Harindranathan Nair	An approach to develop a comprehensive urban waste management plan for Kochi City
9	Anil Loveson	Dr. S. Rajathy	Removal of heavy metals using water hyacinth
10	Thapanjith T.	Dr. S. Rajathy	Study on the geomorphology of sub watersheds of Periyar river
11	Surekha mol I.S.	Dr. I.S. Bright Singh	<i>Vibrio harveyi</i> phages in marine systems phylogenetic diversity and applications
12	B. Sreelakshmi	Dr. I.S. Bright Singh	Serological characterization and differentiation of <i>Vibrio alginolyticus</i> and <i>Vibrio harveyi</i> of Penaeid and Non-penaeid culture Systems
13	Charles Thomas K.	Dr. I.S. Bright Singh & Dr. K.G. George	Novel Bioplastics: Development of appropriate bioprocess technology, characterization and applications
14	Divya Jose	Dr. A. Mohandas & Dr. I.S. Bright Singh	Thermoalkalophilic proteases and liapses for detergents
15	Pradeep Kumar A.V.	Dr.MV.Harindranathan Nair	Relevance of formulating specific rules and regulations in the context of trade liberalization and globalization
16	Jose Merlin P.L.	Dr. V. Sivanandan Achari	Isolation of poisonous chemicals from Human visceral specimens and removal of fat ingredients in forensic investigations
17	Sasi T.K.	Dr. V. Sivanandan Achari	Removal of dissolved substances from ground water sources by BAC filtration
18	Sherly Thomas	Dr.M.V. Harindranathan Nair	A study on the waste management approaches in sea food processing industry and its socio-economic implications
19	Haseeb M.	Dr. I.S. Bright Singh	Bioremediation technology for zero water exchange shrimp culture system
20	Rose Mary Jose	Dr. I.S. Bright Singh	Unraveling the probiotic effect in shrimp larval rearing systems and its augmentation for enhanced larval survival and productivity
21	Sunitha Paulose	Dr. I.S. Bright Singh	Bioprocess Technology for large scale production of <i>Candida sake</i> as a single cell protein



22	Shyam Kumar R.	Dr. S. Rajathy & Dr. A. Mohandas	Toxicity of industrial effluents in biological systems to develop revised quality standards for discharge
23	Anand M.	Dr. Ammini Joseph & Dr. I.S.Bright Singh	Construction of metagenomic library from Kuttanad soil - a perturbed ecosystem and screening for pesticide degrading genes with special reference to 2,4,D herbicide and their expression in a suitable expression system
24	Anumol V.G.	Dr. S. Rajathy & Dr.M.V. Harindranathan Nair	Habitat suitability study of <i>Crossochilus periyarensis</i> (Periyar latia) in river Periyar using GIS
25	Prem Gopinath	Dr. P. Natarajan & Dr. I.S. Bright Singh	Water borne Enteric viruses in and around Cochin
26	Nisha B. Chandran	Dr. Suguna Yesodharan	Development and Testing of Photocatalysts for water treatment
27	Pragath M.	Dr. Suguna Yesodharan	Impact of CO2 increase, land use& land cover changes on Earth's climate using spatial techniques.

17. Seminar / Conference / Workshop / Refresher Course conducted by the

Department: Nil

18. Consultancy work

Sl.No.	Name of Consultancy	Name of consultant	Sponsoring Agency
1	Routine Analysis of	Dr. V. Sivanandan Achari	Individuals and Institutions environmental samples
2.	Impact Assessment of Metro rail, Kochi	All Faculty Members lead by Dr. Sivanandan Achari	Metro rail Corporation
3	Solid Waste Characterization & Quantification [Status: Completed and Report submitted] Consultancy amount: Rs. 1, 37, 000/	Dr. V. Sivanandan Achari & Dr.I.S. Bright Singh	The Cochin Waste 2 Energy Pvt Ltd.P.O. Box No.503, Bristow Road, Willington Island, Cochin 682 003
4	Environmental Expert of the advocate commission of Honourable High Court of Kerala as per the order dated 3-1-2008 in I. A. No. 16936/2007 in W. P. [C] No. 17378/ 2007 And SES . 14/2007-08/146 dated 19-02-2008. Commission: Adv. JOBY JACOBPULICKEKUDY, Advocate, High Court of Kerala.	Dr.V. Sivanandan Achari To investigate and support the Advocate commission as an Environmental Expert to study the environmental pollution caused by the Sponge Iron Factory, M/s. Kerala Sponge Iron Limited, Manthuruthy, Kanjikode P. O, Palakkad, Kerala during its trial run and submit a report	M/s. Kerala Sponge Iron Limited, Manthuruthy, Kanjikode P. O, Palakkad, Kerala Report Submitted on 17 - 03 - 2008



for the further procedures.
The trial run of the industry
has been performed on
24-02-2008 at 10.00 am in the
presence of the advocate
commission.

19. Extension Service : *Please see Annexure*

20. Departmental Publications, if any: *Nil*

21. Any other achievements:

The National Centre for Aquatic Animal Health could get the final approval of the M. Tech programme in Marine Biotechnology to be launched during the 2008 academic year from Department of Biotechnology, Government of India. The curriculum could be finalized and the programme has been notified along with the 2008 CAT for the admission. The programme is under the National Network programme of Department of Biotechnology in human resource development in Biotechnology. The entire expenditure towards the programme is borne by DBT. The programme was sanctioned by the joint task force of DBT and UGC in Human Resource Development in Biotechnology. In support to this programme, UGC sanctioned two posts of Lecturers which could be filled at the Centre. The course offered by the School of Environmental Studies at the National Centre for Aquatic Animal Health could be started from the 2008 academic year with an intake of 6 students.



SCHOOL OF INDUSTRIAL FISHERIES

The School of Industrial Fisheries was established in 1976 as the Department of Industrial Fisheries under the erstwhile University of Cochin for post-graduate teaching and research on all aspects of fishery science and technology. The Department started offering the M.Sc. course in Industrial Fisheries in 1976 and Ph.D. programme in 1979.

The Department was elevated to the status of the School since 1995 by recognizing the progress and achievements in teaching, research and outreach activities in various fields of Fisheries.

The various activities of the School are now carried out under five well defined division of (1) Aquaculture and Capture Fisheries(2) Fishing Craft and Gear Technology (3) Fish Processing Technology (4) Fisheries Economics and (5) Fisheries Management.

The M.Sc. course in Industrial Fisheries is a multi-disciplinary programme spread over four semesters designed to offer the students the needed scientific, technical and managerial skills to take up responsible positions in industry, administration and management in the fisheries sector of the country and abroad.

A new course- M.Phil Programme in Fisheries Science is approved by the University and the admission for the course will commence from the year 2008 onwards.

The Ph.D. programme of the School extends to frontier areas of fisheries science and technology, including aquaculture, seafood quality assurance, economics and management. The faculty of the School serves as experts/consultants in many national /international fisheries bodies and has organized/participated in many national/international symposia/workshops.

The School has, apart from bringing out several research reports and conference proceedings, produced a crop of outstanding research articles and books. The School has in the recent past published a catalogue of Freshwater ornamental Fishes of Kerala (India). The School is now recognized as a premier national institution for fishery science/technology education in the country attracting international student enrolment

Programmes of Study/Research

1. M.Sc. Industrial Fisheries
 2. Ph.D. programme in
 - (a) Fishery Biology and Aquaculture
 - (b) Fishing Craft and Gear Technology
 - (c) Fish Processing Technology
 - (d) Fisheries Economics
 - (e) Fisheries Management
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4. Faculty members

Sl.No.	Name	Designation	Qualification	Specialisation
1	Dr.Ramakrishnan Korakandy	Professor	M.Sc.,M.Phil, Ph.D.	Fisheries Economics and Management
2	Dr.Saleena Mathew	Professor & Director	M.Sc., Ph.D.	Biochemistry and Fish Processing Technology
3	Dr. B. Madhusoodana Kurup	Professor	M.Sc.,Ph.D.	Fishery Biology and Aquaculture
4	Dr.K.T.Thomson	Reader	M.A, Ph.D.	Fisheries Economics
5	Mr.John Mohan	Senior Lecturer	M.Sc Ph.D	Fish Processing Technology
6.	Dr. Mini Sekharan.n	Lecturer	M.Sc, Ph.D.	Fishery Management
7	Dr.M.Harikrishnan	Reader	M.Sc, Ph.D.	Industrial Fisheries and Fishery Biology

5. Visiting Faculty : NIL

6. Research Staff : NIL

7. Research Scholars

Sl.No.	Name	Funding Agency	Guide	Area of Work
1	Rajesh .K	University	Dr.Ramakrishnan Korakandy	Tourism Development in Kerala
2	Jaisingh Joseph	Self	Dr.Ramakrishnan Korakandy	Impact of globalization on production and marketing of fish.
3	Prasanth K.M	Harijan Welfare	Do	Biochemical characterization & Storage of selected species of farmed and marine prawns
4	Manjusha K.P.	University	Dr. Saleena Mathew	Isolation and characterization of GAG from various fish species for their bioactivity
5	Pearly Tony	University	Do	Species variability of phospholipids and their role in lipid oxidation
6	John Chembian	Part – time	Do	Biological and Biochemical aspects of important oceanic squids in the Indian EEZ



Sl.No.	Name	Funding Agency	Guide	Area of Work
7	Dhanya, P.R	UJRF	Do	Potential use of natural antimicrobials for the preservation of commercially important seafoods
8	Abhilash.S	DST (Young Scientist Scheme)	Do	Current status and future prospects of fish waste management in Cochin Corporation and Aroor Industrial Area.
9	Saritha Thomas	WSS, CSIR	Dr. B.Madhusoodana Kurup	Evaluation of live food organisms in the larviculture of M.rosenbergii
10	Subhasree Sankar	University	do	Larviculture of M.rosenbergii with reference to extrinsic factors
11.	Joyni M.Jacob	AquAgris	do	Environmental management reform for sustainable farming, fisheries and aquaculture
12.	Prajith K. K	AquAgris	do	Application of Biofloc Technology in aquaculture systems
13	Sahadevan,P.	Part-time	do	An assessment of fisheries situation in Kannur and Kasargod districts of Kerala for management planning for sustainable development.
14	Venu.S	Part-time	do	Systematics and Distribution of Deep sea Fishes
15	M.K Sajeevan	Part time		Systematics and stock assessment of deep sea fishes of Family Trichiuridae
16	Ancy Sebastian	Part time	Dr.A.Ramachandran	Seafood Quality Management



SI.No.	Name	Funding Agency	Guide	Area of Work
17	Anvar Ali	Part time	do	Freshwater fish
18	George M.A	University	Dr.K.T.Thomson	Management of Stake net fisheries for sustainable livelihood.
19	Antony . V.T	University	Do	Economic and social impacts of fish migration in Kerala economy .
20	Rosewine Joy	Part time	do	Institutions and sustainable development of estuarine fisheries in Kerala.
21	Renjith Kumar C.R.	KSCSTE	Dr. B. Madhusoodana Kurup	Fishery biology of <i>G. thomassi</i> .
22.	Edwin Joseph	Part-time	Prof. (Dr).C.Hridayanathan (Retd)	Marketing strategies in sea food products
23.	Jacob Thomas	Part-time	Dr. Kuruvilla Mathew	Population dynamics, stock assessment and biology of <i>Therapon jarbua</i> (Forskal, 1775) in South West Coast of India
24.	Treesa Varghese	Part time	Dr. Saleena Mathew	Role of autolytic enzymes on fish muscle protein during various processing conditions.
25.	Soumya Subhra De	University	Dr.A. Ramachandran	Quality management strategies for ornamental fish production
26.	Nabajyoti Biswas	Part time	Dr. Saleena Mathew	Effective utilization of Water Hyacinth
27.	Baiju K.K	University	Dr. K.T. Thomson	Co management of marine fisheries in Kerala

8. Administrative Personnel

SI.No.	Designation	No. of Posts
1	Section Officer	1
2	Senior Grade Assistant	1
3	Assistant	1 vacant
4	Senior Grade Typist	1



5	Typist	1 vacant
6	Peon	1
7	Sweeper-cum-Cleaner	1
8	Assistant on Daily Wages	1

9. Technical Personnel

Sl.No.	Designation	No. of Posts
1	Technical Assistant Grade III	1
2	Laboratory Assistant	1
3	Net Maker	1
4	Hatchery Asst.-cum Syrang and Driver	1
5	Hatchery Assistant	1

10. Student Enrollment

Sl.No.	Programme of Study	Men	Women	Total
1	M.Sc.	9	27	36
2	M.Phil	4	6	10
3	Ph.D	18	9	27

11. Research Facilities

(a) **Laboratories (List out Major equipments available)** Separate laboratories for Fishery biology & Aquaculture, Fish processing, Quality Control and Fishing technology. Major equipments include UV visible spectro photometers, High speed Centrifuge, Research microscope, Deep Freezers, Refrigerated Centrifuges, Camera attached microscopes, Electrophoretic units, Refractometers, Laminar flow, Micro pipette, Water still 6 ltr, Digital power pack PS 500, Refractometer & soil pH meter, TA plus food texture analyzer, Variable accupipette, microscope - students type, HPLC, Gas chromatograph, Biophotometer, Ultra pure Water Purification System - Milli Q etc.

(b) **Library:** No separate library. Books bought by the School are kept in the library of Marine Sciences

No of books and Journals as on 31 st March of the Previous Year	Additions during the current year
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Books-1914, Journals-30	Books-22, Journals 30
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12. Distinguished visitors : NIL**13. Ph.Ds Awarded**

Sl.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1	Economics of ornamental fisheries in Kerala	Shyma .J	Dr. K.T. Thomson



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|----|---|-----------------|---------------------------|
| 2 | Effect of natural anti- oxidant sources on the Quality upgradation of processed products from Indian Mackerel (<i>Rastrelliger kanagurta</i>) | Beena Sulochana | Dr. Saleena Mathew |
| 3. | Impact of bottom trawling on sea bottom with special reference to meiofauna | Sreedevi.C | Dr. B. Madhusoodana Kurup |

14. Publications

a. Papers

Name of Paper

Kurup B.M. 2009. Biofloc in shrimp aquaculture- the futuristic technology for ecological and economic sustainability. Fishing Chimes Vol.29(1) pp :23-32.

B. M. Kurup (2009) Distribution and abundance of deep sea fishes along the west coast of India International Symposium MECOS 2009- Marine Ecosystems; Challenges and Opportunities February 9-11, Cochin

R. Remya **and B. M. Kurup** (2009). Proximate composition of selected species of deep sea fishes of Indian EEZ International Symposium MECOS 2009- Marine Ecosystems; Challenges and Opportunities February 9-11, Cochin

Radhika Rajasree, M.Harikrishnan and B.M.Kurup (2009). Stock characteristics and population dynamics of heterocarpus woodmasoni International Symposium MECOS 2009- Marine Ecosystems; Challenges and Opportunities February 9-11, Cochin

B.M. Kurup and Divya V.M. (2009) Life history traits and length weight relationship of selected deep sea fishes inhabiting the continental; slop beyond 400m along the west coast of India. International Symposium MECOS 2009- Marine Ecosystems; Challenges and Opportunities February 9-11, Cochin

Sherine Sonia Cubelio and **B. M. Kurup** (2009). Temporal variation in the abundance and availability of the deep sea fishes along the Indian EEZ based on the fishery survey cruises of FORV Sagar Sampada International Symposium MECOS 2009- Marine Ecosystems; Challenges and Opportunities February 9-11, Cochin

M.Joyni Jacob and **B.M.Kurup** (2009). Distributional variability of physicochemical parameters in Azheekode estuary, Kerala International Symposium MECOS 2009- Marine Ecosystems; Challenges and Opportunities February 9-11, Cochin

Venu S. and **B. M. Kurup** (2009). Spatial and bathymetrical distribution of deep sea perciform fishes from Arabian sea International Symposium MECOS 2009- Marine Ecosystems; Challenges and Opportunities February 9-11, Cochin

Venu. S, Sherine Sonia Cubelio and **B. M. Kurup** (2009). Life history traits of deep sea fishes of the family chlorophthalmidae, with special reference to *C. nigromarginatus* from southwest coast of India International Symposium MECOS 2009- Marine Ecosystems; Challenges and Opportunities February 9-11, Cochin

Ramchandran A. (2008). Access rights for fishing in Inland water bodies in Kerala , India . Egyptian Journal of Aquatic Research . Vol.34(3).pp 251-271.



Ramchandran A. (2008). Impact of government regulations in protecting coastal zones and the present status of various coastal resources in Kerala, India. *Egyptian Journal of Aquatic Research* . Vol.34(3). pp 198-230.

Remesan, M.P. and Ramchandran, A. 2008. Fish traps in inland waters of North Kerala, *Fishery Technology*, Vol 45(2), pp. 137-146

Ramchandran A. (2008) **Acts, Legislations and Fishing Rights – Impact on the development of ornamental fishery in India**, paper presented in the International Workshop on Green Certification of Ornamental Fish (14th to 18th October) organized jointly by Marine Products Export Development Authority, India and Project Piaba, Brazil in Cochin, India.

Ramchandran A. (2008) **Scanning of Ornamental Fish Marketing Environment and Development of Strategies for expansion and diversification of markets**, paper presented in the International Workshop on Green Certification of Ornamental Fish (14th to 18th October) organized jointly by Marine Products Export Development Authority, India and Project Piaba, Brazil in Cochin, India.

Ramchandran, A. (2008) **Prospects and problems in marketing ornamental fish**, Lead paper presentation in the International Seminar on Ornamental Fish Breeding, Farming and Trade, organized at Cochin (Feb. 2008) by Department of Fisheries, Govt. of Kerala, India.

Mini Sekharan, N & Ramchandran A. (2008) **Strategies for enhancing Ornamental Fish Exports from Kerala**, India, in “ Kurup, M.B., Boopendranath, M.R., Ravindran, K., Saira Banu & Nair, A.G. (Eds.) *Ornamental Fish Breeding, Farming and Trade*, Dept of Fisheries, Govt. of Kerala, India, pp. 229-240

Mini Sekharan, N & Ramchandran A. (2008) **Bottlenecks in the Export of Ornamental Fish from India**, in “ Kurup, M.B., Boopendranath, M.R., Ravindran, K., Saira Banu & Nair, A.G. (Eds.) *Ornamental Fish Breeding, Farming and Trade*, Dept of Fisheries, Govt. of Kerala, India, pp. 248-258.

Sekharan, M.N., Ramchandran, A. A probe into the constraints in exporting ornamental fishes from India. *Proceedings, Ornamentals Kerala 2006*.

Pramod P.K., Ramchandran A., Sajeevan T.P., Thampy S. & Pai S.S. (2009). Comparative efficacy of MS-222 and benzocaine as anesthetics under simulated transport conditions of a tropical ornamental fish *Puntius filamentosus* (Valenciennes), *Aquaculture Research*, 41 (2), 309-414.

Jameela Beevi, K.S. and A. Ramchandran. 2009. Checklist of freshwater fishes collected from Ernakulam District, Kerala, India. *Journal of Threatened Taxa*, 1(9) : 493-494.

Thomson K.T. and George , M. A. (2009). Collaborative Estuarine management . A Study on Cochin Estuary . *Fishery Technology*, Vol.46.No.1 59-66.

Svein Jentoft, Maarten Bavinck, Derek Johnson and Kaleekal Thomson 2009. Fisheries Comanagement and Legal pluralism: How an Analytical problem becomes an institutional one In *Human Organisation* 68(1) Spring. Pp 27-38.

Thomson Kaleekal and Tim Gray (2009). From Community based to Co management: Improvement or deterioration in Fisheries Governance in the Cherai Poyil Fishery in the Cochin Estuary, Kerala, India. In *Marine Policy* , vol.33, No.4, pp: 537-543



Thomson Kaleekal ,2009. Development Policies, State Interventions and Struggles for livelihood rights in the coastal communities in Kerala India: A case study of the Cochin clam fishery. Ocean and coastal management . Vol. 52(11) pp: 586-592. Daisy Kappen and K.T. Thomson (2009). Extent of adoption of improved practices in brackish water shrimp farming . Journal of Extension Education. Vol.21. No.1. pp: 4143-4151.

Daisy Kappen and K.T. Thomson (2009). Constraints in adoption of recommended Technologies for improved fresh water fish farming. In Journal of Extension Education . Vol.21(2).pp: 4223-4229

Smija Maju, Reena Greeshma A.R. and **M.Harikrishnan**(2009) Allometric studies on the asymmetric claws of the snapping shrimp, *Alpheus euphrosyne* of Vembanad lake. Abstract no 208 International Symposium MECOS 2009- Marine Ecosystems; Challenges and Opportunities February 9-11, Cochin

Radhika Rajasree, M.Harikrishnan and B.Madhusoodana Kurup (2009) Stock characteristics and population dynamics of *Heterocarpus woodmasoni* International Symposium MECOS 2009- Marine Ecosystems; Challenges and Opportunities February 9-11, Cochin

Riyas, K.V and M.Harikrishnan (2009) Studies on the use of liquefied petroleum gas (LPG) as alternate fuel in motorised fishing units. Coserve Fish 2009 National seminar on Conservation and Sustainability of Coastal Living Resources of India, Dec1-3, 2009.Cochin

Harikrishnan, M and B.Madhusoodana Kurup (2008) Potential of snapping shrimps as ornamentals. Pp107-113. In: Kurup, B.M., Boopendranath, M.R., Ravindran, K., Sairabanu and Nair, A.G. (Eds.) 2008. Ornamental fish breeding, farming and Trade, Dept of Fisheries, Govt.of Kerala, India. 280p.

Kurup, B.M., Radhakrishnan, K.V. and **M.Harikrishnan** (2008) Population characteristics and stock assessment of *Puntius denisonii* (Day) in Kanjirapuzha River, Kerala (South India) pp 89-98 In: Kurup, B.M., Boopendranath, M.R., Ravindran, K., Sairabanu and Nair, A.G. (Eds.) 2008. Ornamental fish breeding, farming and Trade, Dept of Fisheries, Govt.of Kerala, India. 280p.

M.Harikrishnan, Vipin, P.M Kurup, B.M. and (2009) Exploited fishery of Azheekode Estuary, Kerala, Communicated to *Fishery technology*.

b. Books:

1. **Dr. Ramkrishnan Korakandy- Fisheries development in India –The potential Economy of Unsustainable developemt. Kalpaz Publications, Delhi.**
2. **Ornamental Fish Breeding Farming and Trade**
Edited by B. Madhusoodana Kurup, M.R Boopendranath, K Ravindran, Saira Banu, A. Gopalakrishnan Nair
3. **Dr John Mohan- Handbook on ‘ Compliance standards for seafood in EU, USA and japan” as part of a short term training programme / project under MPEDA / UNCTAD programme . Eds. Dr. John Mohan and Dr. Saleena Mathew.**
4. **Dr. A. Ramachandran - Co – Author, Report on the Task Force For Guidelines For Green Certification of Ornamental Fish, MPEDA.**

**15. Participation in Seminar/Conference/Refresher Courses etc. by Faculty/Students.**

Name of Participant	Name of Seminar/conference/ Workshop	Role
Dr. B. Madhusoodana Kurup	Aquagris meeting Leece, Italy Technology transfer workshop/Expert group meeting/Steering committee meeting/General assembly meeting	Committee member
	Aquagris staff secondment programme (Denmark)	Committee member
	Aquagris meeting Bremen Technology ransfer workshop / General assembly meeting	Do
	Ornamentals Kerala 2008	Chairman

16. Awards/ Honours/ Fellowships etc. received :

Name of Recipient	Name of Fellowship/ Honour /Award	Awarding Agency
Prof. Dr. B.Madhusoodana Kurup	Marie Curie fellowship of European Commission	European Commission
Dr. A. Ramachandran	Member, National Task Force for the development of green certification for Indian Ornamental fishes	MPEDA
	Executive committee member Secretrary General Swasraya Bharat,2009	Society For Fishery Technologists (India)

17. Sponsored Research Projects

SI.No.	Title	Sponsoring Agency	Amount	Investigator(s)
1	Partnership for sustainable shrimp aquaculture	Marie Curie fellowship of European Commission	22 lakhs	Dr. B Madhusoodana Kurup
	Assessment of fishery resources along the continental slope and central Indian Ocean	MoES Funded project	51.84 Lakhs	Dr. B Madhusoodana Kurup
2	Developments of fish gerplasm capture fisheries and biodiversity threats of the reviews of Kerala.	KSCSTE funded project	10 lakhs	Dr. B Madhusoodana Kurup



3	Environment management reform for sustainable farming, fisheries and aquaculture (AquAgris)	Commission of the European communities under the 6 th frame work program for research and technological development.	29752 Euro	Dr. B Madhusoodana Kurup
4	Developing Strategies to Network the ornamental fish breeders in India for Enhancing Exports	MPEDA- UNCTAD	9.35 Lakhs	Dr. Mini Sekharan N
5	Fish waste management and its socio-environmental impact assessment in Cochin Corporation and Aroor industrial Area	DST	Rs.7.85 Lakhs	Abhilash, S (YSS) & Saleena Mathew (Mentor)

18. Research Programmes and Activities:

Sl.No.	Topic	Investigator
1.	Studies on Anti microbial agents Fish waste management Extraction and characterization of bio active compounds from fish and discards	Dr. Saleena Mathew
2.	Low cost aquaculture production systemsMolecular taxonomy of deep sea fishes Biofloc in aquaculture systemsLarval rearing of <i>Macrobrachium rosenbergii</i> Biodiversity of deep sea fishes in the Indian EEZExploited fisheries in the rivers of Kerala Impact assessment of fish import from Asian countries Fishing boat registration in kerala with reference to computation of optimum numbers Fish germplasm resources in the rivers of Kerala	Dr. B. Madhusoodana Kurup
3.	Fisheries governance Multifunctional agriculture and brackishwater ecosystem governance	Dr. K.T. Thomson
4.	Green certification in ornamental fish Ornamental fisheries of west BengalBionomics cryopreservation of gametes and captive breeding behaviour of freshwater fish Free trade Agreement - Asean - India negative list of fish Application of HACCP in aquacultureAnesthetics and transport of ornamental fish	Dr . A. Ramachandran
5.	Study of commercially important cephalopods	Dr. John Mohan
6.	Taxonomy of snapping shrimpsCaptive rearing of ornamental crustaceansMarketing	Dr. M. Harikrishnan
7.	Market Research in Fisheries, Fisheries Management, Marketing of Ornamental fish	Dr. Mini Sekharan.N



19. Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department :

Sl.No.	Title	Duration	Coordinator	Funding Agency
1.	One day National Workshop on Global Economic Recession and Fisheries Sector- Challenges and Preparedness	6 th March 2009	Dr. M. Harikrishnan	Kerala State Council for Science and Technology. FIRMA, Mangala Sea foods

20. Consultancy Work:

Sl. No.	Name of Consultancy	Name of Consultant	Sponsoring Agency
	NIL		



SCHOOL OF LEGAL STUDIES

Established as the P.G. Department of law of the Kerala University in 1962 under the leadership of the late Prof. (Dr.) A.T. Markose, an Internationally reputed jurist who was the founder Director of the Indian Law Institute, New Delhi and the Deputy judge of International Administrative Tribunals the School of Legal Studies remains as a prestigious institution in the Campus. It's pioneering efforts in encouraging P.G. studies and research in the vital field of administrative law earned it name and fame.

Its commitment to social development has made it to develop teaching and research in socially relevant and nationally important emerging areas of law such as Constitutional Law, criminal Law, Consumer Protection Law, Environmental Law. It consistent dedication to social change has attracted the attention of the UGC and Govt. of India. Its programmes in Human Rights and Intellectual Property Rights Law are now substantially supported by these agencies. The Library of the school has rich collections of study materials and books. This priced holding and exceptional services have helped it gain global recognition as a Nodal Centre for IPR studies. Its faculty is being consulted by various agencies including the Govt. of India for law reforms. The institution takes pride in having its alumni at different levels of such as High Court Judges, District Judges, Senior Professors of leading Law Schools, Law Officers in various financial institutions and leading members of the Bar in almost all parts of India. The School has been organizing Seminars, Symposia both at national and local levels and Refresher programmes for law teachers to help the participants to update their knowledge in emerging areas of law. The Public Law Lecture series established by the School has already Produced commendable works in law. The LL.B. programmes, started in 1994 as an evening programme has now been made as Semesterised, full time day 5 year (Hons.) programme. The School has been fortunate to attract scholars having experience and education at different parts of the world to be in its vibrant teaching faculty.

Thrust Areas of Research :

Criminal Law	Jurisprudence	Constitutional Law
Environment Law	Consumer Law	Human Rights Law
Intellectual Property Rights		

1. Programmes of Study / Research :

LL.B. (hons.), LL.M. and Ph.D.

2. Faculty Members :

Sl.No.	Name	Designation	Qualification	Specialization
1.	Dr. K.N. Chandrasekharan Pillai	Dean	B.Sc. (Kerala), LL.M. (Delhi), LL.M.S.J.D. (Michigan)	Criminal Law Criminal Procedure Human Rights



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2.	Dr. G. Sadasivan Nair	Professor Emeritus	B.Sc. (Kerala) LL.B. (Delhi). LL.M., Ph.D. (Cochin)	Jurisprudence Criminal Law Criminal Law
3.	Dr. D. Rajeev	Reader & Director	M.A., LL.B. (Kerala) LL.M., Ph.D. (Cochin)	Administrative Law Constitutional Law
4.	Dr. A.M. Varkey	Reader	M.A., LL.M. (Kerala), Ph.D. (Cochin)	Maritime Law commercial Law Commercial Law
5.	Dr. N.S. Goplakrishnan	Professor	LL.M., Ph.D. (Cochin)	Commercial Law Criminal Law Intellectual Property Law
6.	Dr. V.S. Sebastian	Senior Lecturer	B.A. (Kerala), LL.B. (Raipur) LL.M. (Cochin)	Labour Law Commercial Law
7.	Dr. Valsamma Paul	Reader	M.A. (Kerala) LL.M., Ph.D. (Cochin)	Administrative Law Labour Law Environmental Law
8.	Dr. N.S. Soman	Reader	LL.M., Ph.D. (Cochin)	Human Rights
9.	Smt. P.S. Seema	Lecturer	LL.M. (Cusat)	Human Rights
10.	Smt. Vani Kesari	Lecturer	LL.M.	Administrative Law
11.	Smt. Sindhu Soman	Lecturer on contract basis	LL.M., NET	Commercial Law Constitutional Law
12.	Prof. Sathyaseelan. A.	Lecturer on contract basis	LL.M., NET	Criminal Law and Administrative Law
13.	Smt. Joby Bhasker	Lecturer on contract basis	LI.M., NET	Criminal Law and Constitutional Law
14.	Smt. Dayana. M.K.	Lecturer on contract basis	LL.M., NET	Intellectual Property Law Land Laws
15.	Smt. Lekshmi. G.R.	Lecturer on contract basis	LL.M., NET	Juvenile Justice
16.	Smt. Lina Acca Mathew	Lecturer on contract basis	LL.M., NET	Judicial Process
17.	Smt. Asha Sundaram	Lecturer on contract basis	LL.M., NET	Criminology and Penology



3. Visiting Faculty (If any)

Sl.No.	Name	Designation	Qualification	Specialization
1.	Sri. Vidyuth. K.S.	"	LI.M., NET	Law of Contract, International Law Land Laws, Insurance Law, Administrative Law, Contract II, International Law
2.	Dinesh. P.T.	"	LL.M.	Law of Contract, Civil Procedure Code and Limitation Act, Environmental Law, Interpretation of Statutes, Professional Ethics Accountancy for Lawyers and Bar Bench Relation Contract II, Legal Language & Legal Writing, (Transfer of Property) Property Law, Banking Law, Environmental Law, Professional Ethics
3.	Dr. K. Balakrishnan	LI.M., Ph.D.		Law of Crimes, Drafting, Pleading and Conveyancing, Professional Ethics Accountancy for Lawyers and Bar Bench Relation, Moot Court etc., Criminal Procedure Procedure Code, Public Interest Lawyering, Legal Aid and Para Legal Services, Professional Ethics
4.	Prof. Marcus	"	LI.M.	Law of Crimes, Law of Evidence
5.	Ambily. C.S.	"	LI.M.	Family Law I
6.	Abraham P. Meachinkara	"	LL.M.	Law of Evidence, Environmental Law, Interpretation of Statutes, International Law
7.	Sri. S. Bhaskar Iyer	"	MA., M.Phil	Labour Law, Jurisprudence, International Law, Land Laws, Human Rights Law, Legal Language & Legal Writing, Company Law, Banking Low
8.	S.M. Prasanth	"	LL.M.	Civil Procedure Code and Limitation Act, Drafting, Pleading and Conveyancing, Professional Ethics Accountancy for Lawyers and Bar Bench Relation, Public Interest Lawyering, Legal aid ad Para Legal Services, Professional Ethics
9.	Dr. N.S. Chandrasekharan	"	LL.M.	Jurisprudence, Interpretation of statutes, Interpretation of Statutes
10.	Mahesh T. Pai	"	LL.M.	Drafting, Pleading and Conveyancing, Professional Ethics Accountancy for Lawyers and Bar Bench Relation, Moot Court etc. Public Interest Lawyering, Legal Aid and Para Legal Services, Professional Ethics
11.	Dr. V.D. Sebastian	"	LL.M., Ph.D	Administrative Law, Interpretation of Statutes



4. Research Staff :

Sl.No.	Name	Designation	Qualification	Specialisation
1.	Dr. Ajitha. T.G.	Research Officer	LL.M., Ph.D	Intellectual Property Rights, Criminal Law & Commercial Law
2.	Smt. Prabha S. Nair	Research Associate	LL.M.	Intellectual Property Rights & Environmental Law
3.	Smt. Clara Vandrek	Stenographer cum Documentation Assistant	B.A. Degree with Type writing (H) & Shorthand (L)	---

5. Research Scholars :

Sl.No.	Name	Funding Agency	Guide	Area of work
1.	Pauly Mathew (P.T.)		Dr. D. Rajeev	Environmental Protection under Public Health Laws
2.	Harikumar. C. (P.T.)		Dr. N.S. Soman	Judicial Response to socio-economic offences
3.	S. Gopakumaran Nair (P.T.)		Dr. K.N. Chandrasekharan Pillai	Judicial Review of Academic Matters
4.	P.S. Seema (P.T.)		Dr. N.S. Soman	Farmers : The Victims of modernization : Challenges for Law in the third world
5.	Anil R. Nair (P.T.)		Dr. G. Sadasivan Nair	Constitution for Empowerment - Constitutional policy of Education
6.	Mini. S. (TVM) (P.T.)		Dr. D. Rajeev	Social Security of Labour in the New Indian Economy
7.	Mini S. (Palakkad) (P.T.)		Dr. D. Rajeev	Legitimate Expectation in Commercial Transaction
8.	Pradeep K.P. (P.T.)		Dr. G. Sadasivan Nair	Ambit of sale after the 46th Amendment to the Constitution of India
9.	Binumole. K. (P.T.)		Dr. A. M. Varkey	Law as Transboundary movement of Hazardous Substances
10.	Anitha O.S. (F.T.)	Uty. JRF	Dr. D. Rajeev	Tortions Liability for Violation of Human Rights
11.	Susmitha P. Mallaya (F.T.)	Uty. JRF	Dr. A.M. Varkey	Law on Letter of Credit and Bank Guarantees - An Indian Perspective (Thesis submitted)
12.	Jasmi. P.M. (P.T.)		Dr. Valsamma Paul	Recovery of advances by Financial Institutions with special reference to Bank



13. Jacob Joseph (P.T.)		Dr. N.S. Soman	A critical study of the Legal Regime on G.M.O's with special emphasis on Transgenic Plants
14. Vani Kesari. A. (P.T.)		Dr. N.S. Soman	Sanctity of Life in the context of Human Genetic Research
15. Asha R.K. (F.T.)		Dr. G. Sadasivan Nair	Victimisation of women : Causes of denied Justice (Victimology)
16. Preetha S. (F.T.)	UGC JRF	Dr. A.M. Varkey	Company Law
17. Sindhu Soman (P.T.)		Dr. N.S. Gopalakrishnan	Intellectual Property protection of Ayurvedic preparatory : A study with special reference to Ayurvedic Industry.
18. Shanmugham D. Jayan (P.T.)		Dr. N.S. Gopalakrishnan	Legal Concept of Information in Digital Technology
19. Prabha S. Nair (F.T.)		Dr. N.S. Gopalakrishnan	International initiatives for regulating access to genetic resources
20. Veena Krishnan (F.T.)		Dr. D. Rajeev	The Rights of Aboriginal a comparative study
21. Saleena K.B. (F.T.)		Dr. N.S. Gopalakrishnan	Exceptions and limitations to Intellectual Property Rights
22. Vidyuth K.S. (F.T.)	UGC JRF applied	Dr. Valsamma Paul	Environmental Jurisprudence in India with special reference to construction Industry
23. Sreeja R.L. (P.T.)		Dr. G. Sadasivan Nair	Consumer Protection in online transaction
24. Dinesh P.T. (P.T.)		Dr. Valsamma Paul	Money laundering Laws - A study with special relevance to prevention of Money laundering in India.
25. Sony Vijayan (F.T.)		Dr. A.M. Varkey	Law on control of maritime port pollution - Indian perspective
26. Somanadhan Anila (F.T.)		Dr. Valsamma Paul	Misleading advertisement and Consumer Protection
27. Anuja. S. (F.T.)		Dr. Valsamma Paul	Rights of Women in domestic Relations - Law and emerging challenges
28. Bineeshkumar B.S. (F.T.)		Dr. N.S. Soman	Legal control over experimentation on Human beings



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29. Suchitra S. (F.T.)	Dr. D. Rajeev	Immunity of Legislation from Judicial review
30. Binu Poornamodan Cholayil (PT)	Dr. V.S. Sebastian	Intellectual Property Law
31. Ambily T. (FT)	Dr. V.S. Sebastian	Labour Law - A legal and functional analysis of collective bargaining in Udyogamandal industrial Area
32. Premsy P.N. (PT)	Dr. V.S. Sebastian	State responsibility and Corporate Accountability under the Human Rights Treaties
33. Gifty Oommen (PT)	Dr. V.S. Sebastian	Right to Privacy - Human Rights
34. Regi Joseph (PT)	Dr. V.S. Sebastian	Service and Working Conditions of Employees of unaided Schools in Kerala - A study (Labour Law)
35. Lekshmi. G.R. (PT)	Dr. V.S. Sebastian	Rights of minority under Indian Constitution
36. Pai Yogesh Anand (PT)	Dr. N.S. Gopalakrishnan	
37. Dayana M.K. (PT)	Dr. A.M. Varkey	
38. Remya V. (PT)	Dr. A.M. Varkey	
39. Dhnanalakshmy C.N. (PT)	Dr. V.S. Sebastian	

6. Administrative Personnel :

Sl.No.	Designation	No. of Posts
Office		
1.	Section Officer (Hr. Grade)	1
2.	Selection Grade Assistants	2
3.	Office Superintendent	1
4.	Assistant Grade II	2
5.	LD Typist	1
6.	Peons	3
7.	Sweeper Cum Cleaner	1
Library		
1.	Assistant Librarian (Sr. Grade)	1
2.	Junior Librarian	1
3.	Professional Asst. Gr. I	2
4.	Library Assistants Gr. II	2



7. Technical Personnel

Sl.No.	Designation	No. of Posts
NIL		

8. Student Enrolment :

Sl.No.	Course	Men	Women	Total
1.	LL.M.	8	28	36
2.	LL.B.	4	20	24
3.	Ph.D.	12	27	39

9. Research Facilities

- (a) Laboratories (List out Major Equipments available) : NIL
(b) Library

No. of books and Journals as on 31st March of the Previous Year	Additions during the current year
27134	390

- (c) Others : NIL

10. Distinguished Visitors

Sl.No.	Name	Affiliation	Remarks
NIL			

11. Ph.D Awarded : 1

12. Publications :

(a) Papers :

Sl.No.	Name of Faculty	Name of Paper
1.	Dr. N.S. Gopalakrishnan	1. Indian Patent Systems : The road ahead, the future of patent system, Institute of Intellectual Property Japan, 2009 (Co-author - Dr. T.G. Agitha)
		2. TRIPS agreement and Public Health : An overview of International issues, Journal of IPR Vol. 13 September 2008.
		3. Intellectual Property Laws, Annual Survey of Indian laws vol. LXIII 2008 (forth issue)
2.	Dr. A.M. Varkey	1. Company Law by Avtar Singh - CULR '08
		2. Problem is popularizing Maritime Arbitration - Arbitration Law Journal 2008.
3.	Dr. V.S. Sebastian	1. Medical Profession and the Consumer - CULR 2008



4. Dr. Valsamma Paul	1. Cyber Crimes - some publications
5. Dr. N.S. Soman	1. Criminal Negligence and Doctors Liability 2. Emergency and Protection of Human Rights
6. Smt. P.S. Seema	1. Human Reproductive cloning, concerns of the Human Rights Law Religious and Moral Mindset in context with published in Religion and Law Review, Institute of objective studies, New Delhi (2007 - 2008) 2. Relationship between International Humanitarian Law, Human Rights Law & Public International Law - published as a chapter in the Book, titled, International Humanitarian Law an Ankology, (2009 - 1 Edn.) Lexisnexis Publications, Nagpur.
7. Smt. Vani Keasri. A.	1. The Legal Status of Human Genetic Material in Biomedical Research, Kerala Sociologist, Vol. XXXVI, June 2008. 2. Community Oriented Policing : A Novel Approaches Journal of Indian Legal Thought 2008.

Books :

Sl.No.	Name of faculty	Name of Book
1.	Dr. N.S. Gopalakrishnan	Principles of Intellectual Property (Co-author - Dr. T.G. Agitha) Eastern Book Co. Lucknow, 2009 January

13. Participation in Seminar / Conference / Refresher Courses etc. by Faculty / Students :

Name of Participant	Name of Seminar / Conference / Workshop	Role
1. Dr. N.S. Gopalakrishnan	1. Role of Enforcement of Copy Right Law, Indian Law Institute, New Delhi, April 2008	Speaker
	2. SCCR, Meeting Geneva, Switzerland November 2008	Member, Indian Delegation
	3. WIPO Regional Colloquium on IPR Education, Colombo, Sri Lanka, Nov. 2008	Speaker
	4. Judicial Seminar on IPR and Cyber Law National Judicial Academy, Bhopal, Dec. 2008	Speaker
	5. National Seminar on IPR, Govt. Law College, Kozhikode, March 2009.	Speaker
	6. Meeting of the Heligendum Group, Paris, France, November 2009	Speaker



2. Dr. A.M. Varkey	1. National Seminar on HR and Criminal Justice Administration	Participant
	2. National seminar on Self Financing Professional Education Institutions : Role of State	Presented paper
	3. National seminar on Maritime Arbitration	Presented paper
	4. National Workshop on Police and Criminal Justice Administration	Participated
3. Dr. V.S. Sebastian	1. National seminar on Human Rights and Criminal Justice Administration	Participant
	2. National conference on Self Financing Professional self financing institutions : Roll of state.	Participant
	3. National workshops on Human Rights and Police	Participant
4. Dr. Valsamma Paul	1. National seminar on Human Rights and Criminal Justice Administration	Paper presenter
	2. National conferences on Self Financing Professional Educational Institutions : Role of State.	Paper Presenter
	3. Workshop on Human Rights and the Police.	
	4. Workshop on Kerala Laws	Participant
	5. National Seminar on Science, Technology and law	Paper presenter
	6. Workshop on Sustainable City Technologies	Participant
	7. National Seminar on Legal Education Reforms	Paper Presenter
5. Dr. N.S. Soman	1. National Seminar on Human Rights & Criminal Justice Administration, Kottayam	Participant
	2. National Seminar on Inter Disciplinary National Seminar on Law Science and Technology, Trivandrum	Participant
	3. National Seminar on Cyber Crimes and Human Rights, Thrissur	Participant
	4. National Consultation on Domestic Violence, Ernakulam	Participant
	5. National Seminar on Legal Education Reform, Trivandrum	Participant



6.	Smt. P.S. Seema	1. National Conference on Limitations and Exceptions to Copy Right Law” at Kochi on 14th and 15th May 2009.	Report of the sessions
7.	Smt. Vani Kesari. A.	1. National Seminar on Human Rights and Criminal Justice System in India, School of Indian Legal Thought, MG University in 2008 2. National seminar on Legal Reforms organized by University of Kerala in 2008 3. National seminar on Copyright and Neighbouring Rights, MG University 4. National conference on Free Software Cusat 5. International Conference on Democratic and Secular Education, Govt. of Kerala 6. Acted as Resource person in the workshop on Public health Bill organized by department of Law, University of Kerala.	Paper presented Paper presented Participant Participant Participant

14. Awards / Honours / Fellowships etc. received :

Name of Recipient	Name of Fellowship / Honour / Award	Awarding Agency
NIL		

15. Sponsored Research Projects :

Sl.No.	Title	Sponsoring Agency	Amount	Investigators
1.	Setting up of IPR chair in the University under the scheme of Intellectual Property Education Research and Public outreach	MHRD Govt. of India	Rs. 20,00,000/- (Full Amount not yet received)	Dr. N.S. Gopalakrishnan Professor & Coordinator, School of Legal Studies

16. Research Programmes and Activities :

Sl.No.	Problem/Topic	Investigator(s)
NIL		

17. Seminar / Conference / Workshop / Refresher courses conducted by the department

Sl.No.	Title	Duration	Co-ordinator	Funding Agency
NIL				

18. Consultancy Work :

Sl.No.	Name of consultancy	Name of consultant	Sponsoring Agency
NIL			



SCHOOL OF MANAGEMENT STUDIES

The School of Management Studies was established in 1964 as part of an all India scheme of promoting management studies throughout the country. It is the major institution of its kind in Kerala offering post-graduate studies and research programmes in Business Administration, Commerce and related areas.

The School is located twelve kilometers north east of the city of Kochi. It is in the main campus of the University at Thrikkakkara, right in the heart of the industrial belt of the State. The campus is about two kilometers east of South Kalamassery on NH 47 between Ernakulam and Alwaye.

The School started functioning in October 1964 as part of the University of Kerala. With the formation of the University of Cochin in July, 1971 the School became a Department of the University.

1. Programmes of Study/Research

At present the School offers Master of Business Administration (MBA - Full-Time and Part-Time) Master of International Business (MIB), MBA (Travel & Tourism), M.Phil (Commerce) and Ph.D. programme.

Management Development programmes

Besides academic programmes, the School conducts Management Development Programmes and undertakes Management Consultancy. The management development programmes in general are aimed at inducting personnel into more recent developments in their own specialized or allied areas, so that they would be able to develop a wider perspective.

- | | | |
|----------------------|---|----------------|
| 1) MBA (FT) 2 years | – | Four semesters |
| 2) MBA (PT) 3 years | – | Six semesters |
| 3) MIB 2 years | – | Four semesters |
| 4) MBA (TT) 2 years | – | Four semesters |
| 5) M.Phil (Commerce) | – | Two semesters |
| 6) Ph.D. | | |

Master of Business Administration (Full Time – 2 Years – Four semesters)

This is a two-year full time post-graduate programme leading to the Degree of Master of Business Administration. Its aim is to provide the young aspirants with the opportunity to pursue a career in business, to acquire adequate knowledge, skills and attitudes which would constitute a foundation for their growth into competent and responsible business executives. The course has been so designed, as to enable the students to develop a thorough grasp of the basic concepts and techniques of management as well as the ability to practice them under Indian conditions. Further, it aims at developing their analytical decision making and communication skills.



Master of Business Administration (Part Time – 3 Years – Six semesters)

The part - time programme leading to the degree of Master of Business Administration is a three - year evening programme. Its objective is to give an opportunity to executives working in Government and business organizations to improve their managerial ability and performance.

Master of International Business (Full Time – 2 Years – Four semester)

The post graduate programme in International Business is a 4 semester full time course. It gives emphasis to export policies, procedures & techniques.

MBA (Travel & Tourism) Full Time 2 years – four semesters

MBA Travel & Tourism is the first academic program in India which offers a post graduate management degree in Travel & Tourism. Set apart from normal management programmes, the course is designed with a view to create tailor made professionals suiting the high-end hospitality industry.

The academic program imparts learning from class room sessions as well as industry. Each semester comprises of one month in house training programme to be undergone in renowned travel & tourism companies. The students also undertake market research challenges as a part of the curriculum.

The strenuous academic sessions are coupled with tours and visit to various tourists' destinations in India, completely designed and scheduled by the students themselves.

MBA Travel & Tourism lays equal importance to both the sectors. That's why the specialization offered to the students in the second year comes with the diverse choices to excel in both travel and tourism areas. The faculties chosen to guide represent talents from the industries. Senior managers and professionals are sought to guide the students with insights from their own experiences.

M.Phil. (Commerce)

One year (2-semester) Full time course in Master of Philosophy in Commerce for College Teachers and general category students.

Methods of instruction

The School employs different methods of instruction viz, lectures, case studies, seminars, role-plays, syndicates, field work etc. At the end of the third semester the students (F.T) are required to attach themselves to an organization for a period of eight weeks and prepare a project report on a problem related to the working of the organisation.

The unique programmes offered by the School aim at developing the personality of students and sharpening their oral and written communication skills.

Consultancy programmes

The School undertakes consultancy assignments to provide managerial and technical - services to various organizations. The School has been recognised by the Government of Kerala as an authorised centre to provide consultancy services to small scale industries in the State.



2. Faculty Members

Sl.No	Name	Designation	Qualification	Specialization
1	Dr. K.B. Pavithran	Professor & Director	M.Com, PGDBA, Ph. D.	Finance/Accounting/ Strategic Management
2	Dr. P.R. Wilson	Professor	M.Com., Ph.D.	Financial Management
3	Dr. P. Sudarsanan Pillai	Professor	M.Com., M.A., LL.B., Ph.D.	Business Law, Business & Government, Management of Public Sector
4	Dr. C.A. Francis	Professor	M.A., M.B.A., D.D.P., Ph.D.	Marketing Management
5	Dr. C.V. Jayamani	Professor	M.Com., Ph.D.	General Management, Finance
6	Dr. M. Bhasi	Professor	M.Tech., Ph.D.	Operations Management, IS, Materials Management
7	Dr. James Manalel	Professor	M.B.M., Ph.D.	Finance Management, Banking, Management of Small Business
8	Dr. Sebastian Rupert Mampilly	Professor	M.S.W., M.B.A., Ph.D.	HRM, Organisational Behaviour and Industrial Relations, Research Methodology
9	Dr. G. Antony	Reader	M.A., M.B.A., Ph.D.	Marketing / Sales / Advertising
10	Dr. K. Krishnan Nampoothiri	Reader	M.Com., Ph.D.	Accounting, Banking, Co-operation, Business Communication, Finance
11	Dr. Sarada S.	Reader	M.A., M.B.A., M.S., Ph.D.	Organisational Behaviour, HRM
12	Dr. Jagathy Raj V. P.	Reader	M.Tech., M.B.A., DSADP, Ph.D.	Systems and Operations Management - Logistics, Supply Chain Management, IT Applications in Business and Management, ERP,MIS, Engineering and Technology Management.
13	Dr. Moli P. Koshy	Reader	M.Sc., M.B.A., Ph.D.	Marketing Management, Marketing Research, Consumer Behaviour, Strategic Marketing Entrepreneurship



14	Dr. Rajitha Kumar S.	Reader	M.Com., M.Phil., Ph.D. Management in Bank	Financial Service/Security Analysis Funds
15	Dr. D. Mavoothu	Reader	M.B.A., D.L.L., Ph.D.	HRM ,Industrial Relations and Business Ethics
16	Dr. Mohammed Aslam M. K.	Lecturer	M.Com., M.Phil.	Finance Management and Accounting
17	Dr. Sam Thomas	Lecturer	B.Tech., M.B.A.	Systems and Finance
18	Dr. Zakkariya K. A	Lecturer	M.A., M.B.A., P.G.D.I.B., Ph.D.	Organisational Behaviour, Marketing, & Sales Management, Managerial Skills Development
19	Dr. Manoj Edward	Lecturer	B.Tech, M.B.A., Ph.D.	Operations and Service Management

3. Visiting Faculty

Sl.No.	Name	Designation	Qualification	Specialisation
NIL				

4. Research Staff

Sl.No.	Name	Designation	Qualification	Specialisation
NIL				

5. Research Scholars

Sl.No	Name	Funding agency	Guide	Area of work
1	Manesh N.A.		Dr. S. Rajitha Kumar	Role of Leisure Tourism for the Economic Development of Kerala
2	Prince C.P.		Dr. C.A. Francis	A study on occupational stress and martial schism
3	Sreekumar K		Dr. K.B. Pavithran	Impact of Cost Accounting Record rules & statutory cost audit on the performance of the selected business enterprises
4	Shelly Jose		Dr. S.R. Mampilly	Industry mindset and organizational performance
5	Krishnan M.		Dr. K.B. Pavithran	A study on the strategic financial management practices in small and medium enterprises in Kerala
6	Peter Thenankal		Dr. P. Sudarsanan Pillai	A study on futures trading in commodities with special reference to rubber
7	Mohamed Ismail Mujahid Hilal		Dr. G. Antony	A study on International marketing strategy for SriLankan tea.

**6. Administrative personnel**

Sl.No	Designation	No. of posts
1	Professor & Director	1
2	Section Officer	1
3	Sel.Gr. Assistants	2
4	Sr. Gr. Assistant	1
5	Section Officer (Typist)	1
6	Office Supdt.	1
7	Typists	1
8	Duplicator Operator	1
9	Computer Operator	1
10	Assistant Librarian	1
11	Junior Librarian	1
12	Professional Assistants	1
13	Library Assistant	1
14	Peons	3
15	Sweeper/Cleaner	2
16	Gardener	1

7. Technical personnel

Sl.No.	Designation	No. of Posts
NIL		

8. Students enrollment

Sl.No	Programme of study	Men	Women	Total
1	MBA	27	25	52
2	MIB	20	11	31
3	MBA (Part Time)	16	1	17
4	MBA (Travel & Tourism)	17	9	26
4	M. Phil (Commerce)	Nil	7	7
5	Ph.D.	6	1	7

9. Research Facilities:

a) Laboratory:			
Computers	:		34
Printers	:		6
UPS	:		18
b) Library:			
No. of books/journals on 31 st March 2009		Additions during the year 2008-09	
Books	38525		288
Journals	48		4
c) Others: N I L			

**10. Distinguished Visitors:**

NIL

11. Ph.D. awarded

Sl.No	Title of the thesis	Name of Research Scholar	Supervising Guide
1	Studies on using computer simulation models to solve problems related to logistics terminals	K.C. James	Dr. M. Bhasi
2	Intelligent use of emotions in personal selling: A study into the effect of emotional intelligence on the performance of sales executives.	Zakkariya K.A.	Dr. C.A. Francis
3	A study on human resource management practices in private hospitals in Kerala	Radha Karunakaran	Dr. P. Sudarsanan Pillai
4	E-marketing motivators, inhibitors & critical success factors: A study of small & medium tourism enterprises (SMTEs) in Mauritius & Andaman Islands, India	Victor Anandkumar	Dr. C.A. Francis
5	Career Advancement of MBA's: A study on the effect of personal, profession, organization and environmental variables	D. Mavoothu	Dr. P.R. Poduval
6	Effect of Gender Role Orientation and Communication style on executive performance	Vincent Varghese	Dr. S.R. Mampilly

12. Publications

Sl.No	Author	Title	Journals	Vol. Page, year
1	Joshua A.J. & Dr. Moly P. Koshy	Beliefs, Attitudes and Behavioural Intentions towards a technology based self-service banking delivery channel the case of Automated Teller Machines (ATMs)	Erudition	January 2009
2	Joshua A.J. & Dr. Moly P. Koshy	Provisioning of services using technology: the customer acceptance of technology based service delivery in the banking sector	Research on Compendium Services Management	February 15-16, 2009
3	Dr. Moly P Koshy & Dr. Mary Joseph	Thos who have the will, Find the Way... Those who don't, will find the Wayside	Technical Education in Kerala-emerging Trends	Pp85-89, 2009
4	Dr. C.V. Jayamani	Knowledge Management: The Indian Perspective, Taxmann's Corporate Professionals		June 1-15, 2009



5	Dr. C.V. Jayamani	IT Work Culture: Its Impact on young Executives,	Pragathi Quarterly, Bharatiya Vichar Kendram Research Centre	Thiruvananthapuram,
6	Dr. D. Mavoothu	Recession and trends in marketing strategies,	International Journal of Marketing, Trade policy & economics	Vol.1, No.1-2
7	Dr. D. Mavoothu	Business Opportunities from adaptation and mitigation of climate change	Southern Economist	Vol.47, No.7, pp34-36
8	Dr. D. Mavoothu	Minority Entrepreneurship: Problems and prospects In Bhumi (2008) minorities in India	Serial Publications	New Delhi
9	Dr. D. Mavoothu	"Global Recession and New Trends in HR in IT Industry" in Arunachalam (2009) Global Financial Crisis: Its impact on Indian Economy	Serial Publications	New Delhi
10	Dr. Zakkariya K.A. & Dr. Jagathy Raj V.P.	An Introspection to the Problems and Issues of Engineering Education in Kerala in Meera Bai M. (Edt) Technical Education in Kerala	Serials Publications	New Delhi p.217-233
11	Dr. Manoj Edward & Dr. Zakkariya K.A.	Relevance of Social Marketing in Kudumbashree. In Inasu N.D. (Edtr), Shasthrapadham: A Blueprint for the sustainable development of the State of Kerala	Directorate of Public Relations,	CUSAT
12	Dr. P. Sudarsanan Pillai	Service Led Growth: Myths and Realities - A study specific to Life Insurance in India Part III	Witness Monthly, Trivandrum	April 2008
13	Dr. P. Sudarsanan Pillai	Service Led Growth: Myths and Realities - A study specific to Life Insurance in India Part IV	Witness Monthly, Trivandrum	May 2008
14	Dr. P. Sudarsanan Pillai	SEZs should not be a CESS	Witness Monthly, Trivandrum	January 2009
15	Dr. P. Sudarsanan Pillai	SEZs should not be a CESS Part II	Witness Monthly, Trivandrum	February 2000



b. Seminar/Conference Presentations:

Dr. Moly P Koshy & Dr. Mary Joseph

What Price is the right Price/ The pricing Dilemma, paper presented in the International Conference on Harnessing Entrepreneurial Potential of War for Economic Growth held at Manipal Institute of Management, January 22-24, 2009.

Dr. Moly P. Koshy

Harnessing Distribution to Enhance Inclusive Growth of Women Entrepreneurship, paper presented in the National Seminar on inclusive Growth; Role of corporate, SMEs, Government, NGOs and SHGs, organized by Albertian Institute of Management, Cochin, January 30-31, 2009.

Dr. Moly P. Koshy & Joshua A.J.

Technology-Enabled Differentiation in Banking Services Delivery: Strategic Initiatives and Best Practices, paper presented in the National Seminar on Strategic Marketing for the Emerging Environment, organized by School of Management Studies, CUSAT, February 20-21, 2009.

Dr. Moly P. Koshy & Amit Mishra, Veeva Mathew

Service Quality and Repurchase Behaviour: A field study among the retail apparel shopper in Cochin, paper presented in the National Seminar on Creating and Delivery Value for Customers, organized by School of Management Studies, CUSAT, March 27-28, 2009, pp 213-224.

Moli P. Koshy and Dhanya Babu V.

Village Tourism in Kerala-The Role of Marketing, paper presented in the National Seminar on Creating and Delivery Value for Customers, March 27-28, 2009 pp 56-54

Dr. C.V. Jayamani

1. National Seminar on Creating and Delivering Value for Customers, 27 & 28 March 2009, School of Management Studies, CUSAT
2. National Seminar on Hundred years of Hind Swaraj, School of Gandhian thoughts and Development Studies, MG University, Kottayam
3. Programme for Skill Development of Technical Teachers, Institute of Management in Government, Kakkanad.

Dr. P. Sudarsanan Pillai

1. Attended the 61st All India Commerce Conference held at Nagpur, 27-29th December 2008, and presented a Research Paper entitled "SEZs SHOULD NOT BE A CESS" Adjudged as one of the best papers of the seminar session.
2. Seminar on "Privatisation of Public Enterprises in India" held at Vivekananda College, Madurai, Tamil Nadu, 30th January 2009. Chairman of the session and delivered Key Note Address.

c. Books : NIL



13. Participation in Seminar/Conference/Refresher courses etc. by the Faculty/Students.

Name of Participant	Name of Seminar/Conference/Workshop	Role
Dr. Rajitha Kumar S.	Participated in the SPSS 16.0 Training Programme organized by SPSS South Asia and GOA Institute of Management, GOA, during 11-13 April 2008	Participation
Dr. Rajitha Kumar S.	Participated in the National Seminar on Relevance of Co-operatives in the Services Sector of Kerala, organized by Dept. of Commerce, University of Kerala, on 1 st Nov 2008	Participation
Dr. Sebastian Rupert Mampilly	UGC Course on Research Methodology for Doctoral Research Supervisors, Academic Staff College, University of Kerala, Trivandrum, March 23-27, 2009	Resource Person
Dr. Zakkariya K.A.	Summer Workshop on "Research Methodology and Application of SPSS for Data Analysis conducted by Albertian Institute of Management, Cochin, 11 th , 12 th & 13 th April 2008	Participant
Dr. Zakkariya K.A.	National Seminar on "Strategic Marketing for Emerging Environment, held at School of Management Studies, CUSAT, Feb. 20-21, 2009	Participant
Dr. Zakkariya K.A.	National Seminar on "Creating and Delivering Values for Customers" held at School of Management Studies, CUSAT, March 27-28, 2009	Participant

14. Awards/Honours/Fellowship etc. received. : NIL

Name of Recipient	Name of Fellowship/Honours/Award	Awarding Agency
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15. Sponsored Research Projects : NIL

Sl. No.	Title	Sponsoring Agency	Amount	Investigator(s)
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16. Research Programmes and Activities : NIL

Sl. No.	Problem/Topic	Investigator(s)
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17. Seminar/Conference/Workshop/Refresher Course conducted by the Department.

Sl. No.	Title and Duration	Duration	Co-ordinator	Funding Agency
1	National Seminar on Strategic Marketing for the Emerging Environment	Feb. 20-21, 2009	Dr. Moli P. Koshy	UGC Unassigned Plan Grants
2	National Seminar on Creating & Delivering Value for Customers	March 27-28, 2009	Dr. Moli P. Koshy	UGC Unassigned Plan Grants

18. Consultancy work : NIL

Sl. No.	Name of Consultancy	Name of Consultant	Sponsoring Agency
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KUNJALI MARAKKAR SCHOOL OF MARINE ENGINEERING

1. Marine Engineering Division was started under the School of Engineering of Cochin University in September 2003.
2. It was upgraded to an independent Department called Kunjali Marakkar School of Marine Engineering in July 2007.
3. Shifted to the new marine Engineering building complex on 7th July, 2007.
4. Got ISO-9001:2000 Certificate in March, 2007.
5. Official inauguration of the building complex by the Hon.Chief Minister of Kerala Sri V.S Achuthanandan, done on 28th November 2007.
6. Placement of 1st Batch (2003) cadets.
7. 50% of succeeding batch (2005) already placed.
8. Approval from DGS obtained for all faculty members.
9. Control System Lab work completed.
10. 2nd surveillance audit of Quality Management System of KMSME carried out successfully

1. Programmes of Study/Research:

Pre-sea Engineering – 4 year B.Tech in Marine Engineering.

2. Faculty Members

Sl.No.	Name	Designation	Qualification	Specilisation
1	Prof. K. A. Simon	Director	B.Sc (Engg.), MBA, MS (Sweden), Extra First Class Marine Engineer.	Safe Watch Keeping Marpol
2	Prof.P.V.Sasikumar	Professor	B.Sc (Engg), L.L.B, M.L.M. Phil, M.E.O. Class I (M)	Refrigeration Marine Machinery Design
3	Prof. N. G. Nair	Course in - Charge	B.Sc (Engg.), M.E.O. Class I (M)	Marine Auxiliary Machinery, Gas turbines
4	Mr.R.Venugopal	Marine Engineer	B.Tech, M.E.O. Class I (M)	Marine Control Engineering & Automation
5	Mr.Roy.V.Paul	Reader	M.Tech	Thermodynamics Machine Drawing
6	Ms.Nisha Rani. G.S.	Lecturer	B.Tech	Marine Electrical Technology, Marine Electronics



7	Mr. K. Vidyadharan	Lecturer	M.Tech. & Ocean Engineering	Mechanical Engineering
8	Mrs. Joanseey Varghese	Lecturer	B.E. Engineering	Electrical & Electronic

3. Visiting Faculty (If any)

SI.No.	Name	Designation	Qualification	Specilisation
1	Mr. Raman Menon	Guest Faculty	MSc.Chemistry	Chemistry
2	Mrs. Betsy Kurian	Guest Faculty	M.A.Economics	Economics & Commercial Geology
3	Prof. P.G.Nair	Guest Faculty	MSc.Physics	Physics
4	Mrs. Simily Joseph	Guest Faculty	B.Sc., MCA	Physics
5	Prof. V.M.Rockey	Guest Faculty	M.Sc.Mathematics	Mathematics
6	Mr. Girish Chandra	Guest Faculty	MSc.Mathematics	Mathematics
7	Mrs.Santhamma P.S.	Guest Faculty	M.Sc., M.Phil., B.Ed.	Mathematics
8	Mr. Pushpangathan	Guest Faculty	B.Sc. (Eng.), DPM	Mechanical Engineering
9	Mr. Shiju.S.	Guest Faculty	M.Tech.	Mechanical Engineering
10	Capt. John Ephraim	Guest Faculty	Master F.G.	Maritime Service
11	P.A. Natarajan	Guest Faculty	B.Sc. Engineering	Electrical Engineering
12	Mr. Ramachandran	Guest Faculty	Master Marine F.G.	Maritime Service
13	Mrs. Neenu Sugunan	Guest Faculty	M.Sc. Computer Science	Computer Science
14	Mr. K.Neelambaran	Guest Faculty	BSc (Engg.), M.E.O. Class I	Marine Engineering
15	Dr. K.P.Narayanan	Guest Faculty	M.Tech, Ph.D.	Ship Technology, Naval Architecture
16	Dr. Dileep Krishnan	Guest Faculty	M.Tech, Ph.D.	Ship Technology, Naval Architecture

4. Research Staff

SI.No.	Name	Designation	Qualification	Specilisation
NIL				

5. Research Scholars

SI.No.	Name	Funding Agency	Guide	Area of Work
NIL				



6. Administrative Personnel

SI.No.	Designation	No. of Posts
1	Section Officer	1
2	Asst. Librarian.	1
3	Assistant	3 (One Temporary Post)
4	Typist	2
5	Peon	2

7. Technical Personnel : NIL

SI.No.	Designation	No. of Posts
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8. Student Enrollment

SI.No.	Programme of Study	Men	Women	Total
1	B.Tech Marine Engineering	30	----	30

9. Research Facilities

a. Laboratories (List out Major equipments available)

1. Mechanical Lab (Kinematic lab)
 2. Instrumentation & Control Lab
 3. Engine Simulator Lab
 4. Ship -in- Campus (under construction)
 5. Machine overhauling Lab
 6. Cut section Models Lab
-

Major equipments available

- (1) Morris single Girder ,EOT Crane.
 - (2) Incinerator Make Volcano -
 - (3) Steam Turbine
 - (4) Marine Auxiliary Water Tube, Boiler Clintone Make -
 - (5) Fresh Water Generator, Atlas Sasakura AFG04 -
 - (6) Stearing Gear
 - (7) Cargo Oil Pump -
 - (8) Refrigerator -
 - (9) Life boat (46 Persons)with complete kit. - 1 set
 - (10) PLC Scada Training kit-
 - (11) Hydraulic Circuit -
 - (12) Gas Turbine Model
 - (13) Diesel Engine Model
 - (14) Petrol Engine Model
 - (15) Full Mission Engine Room Simulator
 - (16) APL UPS for Engine Room Simulator
-

**b. Library**

No of books and Journals as on
31st March of the Previous Year
2967

Additions during the current year
1110

c. Others**10. Distinguished visitors**

SI.No.	Name	Affiliation	Remarks
1	Mrs. Lakshmi Venkatachalam IAS	Director General of Shipping, Mumbai	
2	Mr. K. Chidambaram	National President Institute of Marine Engineering (India)	
3	Mr. Kezahira Osaka	Oshime Ship technology, Nagasaki, Japan	
4	Capt. M.M. Saggi	Nautical Advisor to Govt of India D.G. Shipping, Mumbai	

11. Ph.Ds Awarded : Nil

SI.No.	Title of Thesis	Name of Research Scholar	Supervising Guide

12. Publications - Nil**a. Papers**

SI.No. Name of Paper

b. Books

SI.No. Name of Book

13. Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.

SI.No	Name of Participant	Name of Seminar / Conference/ Workshop	Role
1	Prof. K.A. Simon	Attended Seminar of World Maritime Day Attended Seminar of Merchant Navy Officers Welfare Association	Moderator Moderator
2	Prof. P.V. Sasikumar	1. Attended Seminar of World Maritime Day "IMO :60 years in the service of Shipping on 25.09.08 2. All India Seminar on "legal and technical aspects of valuation of properties" on 15-16 November 2008 3. Training Programme on "welding" on 21-23 March 2009.	Participant Participant Chief Co - ordinator for the Institute of Marine Engineers, India, Cochin Branch



14. Awards / Honours / Fellowships etc. received : Nil

Name of Recipient	Name of Fellowship/ Honour /Award	Awarding Agency
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15. Sponsored Research Projects : Nil

Sl.No.	Title	Sponsoring Agency	Amount	Investigator(s)
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16. Research Programmes and Activities: Nil

Sl.No.	Problem / Topic	Investigator (s)
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17. Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department : NIL

Sl.No.	Title	Duration	Coordinator	Funding Agency
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18. Consultancy Work : NIL

Sl. No.	Name of Consultancy	Name of Consultant	Sponsoring Agency
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SCHOOL OF MARINE SCIENCES

The School of Ocean Science & Technology was renamed as the present School of Marine Science vide U.O.No. Ac. A1/6145/99/111 PF dated 21.11.2006. The School of Marine Sciences is one of the oldest institutions in India imparting postgraduate teaching, training and research in all branches of Ocean Science & Technology. The School comprises five departments and is involved in several coordinated teaching and research programmes. It has an excellent library and a research vessel for coastal water studies and has earned the special recognition of the University Grants Commission under its DRS, COSIST and SAP Programmes. Currently, the School is in Phase - III of the DSA programme.

The Centre for Integrated Management of Coastal Zones (C-IMCOZ) was recently set up in the School to offer a P.G. Diploma Programme in Coastal Zone Management and to conduct research in frontier areas of Coastal Zone Management.

Recently, the Ministry of Earth Sciences, Government of India, restructured the discipline specific Ocean Science & Technology Cells (OSTCs) all over the Country to location specific Ocean and Atmospheric Science and Technology Cells (OASTCs). Accordingly, the OSTC in Marine Benthos at Cusat has been renamed as OASTC - CUSAT with a view to encourage research activities in frontier areas of Marine Science & Technology.

Trust Areas of Research

The research areas are described under the sections on individual departments.

The School has academic interaction with the Universities in the Netherlands under the MHO programme of collaboration between Cusat and the Dutch Government. Also, the School has signed MoU the Bremen University, Germany and the Kochi University, Japan for academic interactions in the field of Marine Science Teaching and Research.

1. Programmes of Study / Research :

2. Faculty Members

Sl. No.	Name	Designation	Qualification	Specialization
1.	Prof. H.S. Ram Mohan	Professor & Director	Ph.D	Mineral Resources
2.	Ignatius Kunjumon	Lecturer	-	Computer applications

3. Visiting Faculty (If any) : NIL

Sl. No.	Name	Designation	Qualification	Specialization
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4. Research Staff : NIL

Sl. No.	Name	Designation	Qualification	Specialization
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5. Research Scholars : 5 under the UGC - RFMS

Sl. No.	Name	Funding Agency	Guide	Area of Work
1				
2				
3				
4				
5				

6. Administrative Personnel

Sl.No.	Designation	No. of Posts
(a) 1	Section Officer	1
2	Assistant	1
3	Typist / Steno	1
4	Peon	2
5	Sweeper - cum - Cleaner	3
6	Security Guard	5
(b)	Library Staff	
7	Asst. Librarian	1
8	Junior Librarian	1
9	Library Asst.	1

7. Technical Personnel

Sl.No.	Designation	No. of Posts
1.	Mechanic	1
2.	L.D. Driver	1
3.	Boatman	1
4.	Lascar	1

8. Student Enrollment : NIL

Sl.No.	Programme of Study	Men	Women	Total
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9. Research Facilities

a. Laboratories (List out Major equipments available) :

- i) Research Vessel R.V. Aneveshika
- ii) Personal computers for on-line library facility
- iii) Lap top - 2
- iv) On line Library facility



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b. Library

No. of books and Journal as on 31st March of the Previous Year	Additions during the current year
20525	371

c. Others : N.A.

10. Distinguished visitors :

Sl.No.	Name	Affiliation	Remarks
1			
2			
3			

11. Ph.Ds awarded : N.A.

Sl.No.	Title of Thesis	Scholar	Supervising Guide
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12. Publications :

a. Papers

Sl.No.	Name of paper
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b. Books

Sl.No.	Name of Book
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1. Revised the 'Journal of the Marine & atmospheric Research' Editor-in-Chief : Prof. H.S. Ram Mohan
2. Published OASTC Bulletin : Editor K.T. Damodaran

13. Participation in Seminar / Conference / Refresher Course etc by Faculty / Students :

Name of Participant	Name of Seminar / Conference / Workshop	Role
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14. Awards / Honours / Fellowships etc. received : NIL

Name of Recipient	Name of Fellowship / Honour / Award	Awarding Agency
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15. Sponsored Research Projects : NIL

Sl.No.	Title	Sponsoring Agency	Amount	Investigator(s)
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16. Research Programmes and Activities :

Sl. No.	Problem / Topic	Investigator(s)
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17. Seminar / Conference / Workshop / Refresher Courses conducted by the Department :

Sl.No.	Title	Duration	Coordinator	Funding Agency
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18. Consultancy Work : NIL

Sl.No.	Name of Consultancy	Name of Consultant	Sponsoring Agency
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INTERNATIONAL SCHOOL OF PHOTONICS

The International School of Photonics (ISP) at Cochin University of Science & Technology was inaugurated on the National Science Day, February 28th 1995. The nucleus of the ISP was formed by delinking the laser laboratories along with faculty members of the laser group from the Department of Physics of CUSAT. ISP has been carrying out pioneering work by way of Research and Development in lasers and their applications as well as in Fiber Optical Technology. ISP offers a Four Semester M.Tech degree course in Optoelectronics and Laser Technology, a two Semester M.Phil degree in Photonics and Ph.D programme in all branches of Photonics/Optoelectronics. Research and Development work in frontline areas are being pursued and these include topics like laser induced plasmas, photo thermal and photo acoustic phenomena, nonlinear optics, nonlinear dynamics, photonic materials, laser material processing and fibre optic sensors as well as some defense related applications of lasers. Most of the research projects are being funded by the national funding agencies like Department of Science and Technology (Govt. of India as well as Govt. of Kerala) UGC, AICTE, DRDO, etc. ISP had an International collaboration with the Technical University of Eindhoven (TU/e) under the MHO programme funded by the Netherlands Organization for International co-operation in higher education during 1999-2004. A subpicosecond laser facility is now available in the laboratory under the CELOS programme which is being used as a national facility.

1. Programmes of Study/Research:

1. M.Tech (Opto-electronics and Laser Technology)
2. Ph.D (Photonics and related areas)

2. Faculty Members

SI.No	Name	Designation	Qualification	Specialisation
1.	Dr. VPN Nampoori	Professor	M.Sc, Ph.D	Non-linear Dynamics & Laser Spectroscopy
2.	Dr.V M Nandakumaran	Professor	M.Sc, Ph.D	Non-linear Dynamics & Chaos (On deputation to IIESER)
3.	Dr.P Radhakrishnan	Professor	M.Sc, Ph.D	Laser Technology & Fibre Optics
4.	Sri.M Kailasnath	Lecturer	M.Sc, M.Phil, M.Tech	Polymer optical fibres & Laser Technology
5.	Dr.S Rajesh	Lecturer on Contract basis	M.Sc, Ph.D	Non-linear Dynamics
6.	Dr. A Santhi	Lecturer on Contract basis	M.Sc, Ph.D	Non-linear Optics

3. Visiting faculty (If any):

SI.No	Name	Designation	Qualification	Specialisation
1.	Prof.V Unnikrishan Nayar	Visiting Faculty	M.Sc, Ph.D	Raman Spectroscopy and Laser Physics



4. Research Staff : Nil

5. Research Scholars:

Sl.No	Name	Funding Agency	Guide	Area of Work
a) Full time Research Scholars				
1.	Lijo K Joseph	UGC	Dr. P. Radhakrishnan Dr.VPN Nampoori	Laser Matter
2.	Thomas K J	CSIR	Dr. P. Radhakrishnan	Fiber Optics
3.	Parvathy M R	UGC	Dr.V M Nandakumaran	Laser in Chaos Systems
4.	Manu Punnen John	CSIR	Dr.V M Nandakumaran	Study of Chaos in Non-linear Dynamical system
5.	Linesh J	UGC	Dr.VPN Nampoori	Fiber Optics Sensors
6.	Sony George	UGC	Dr.VPN Nampoori	Biophotonics
7.	Nithyaja B	UGC	Dr.VPN Nampoori	Optical Signals & Image Processing

b) Part time Research Scholars

1.	M Kailasnath	Nil	Dr. P. Radhakrishnan Dr.VPN Nampoori	Fabrication of dye dipped Polymer Optical Fibres
2.	Saritha M	Nil	Dr.V M Nandakumaran Dr.VPN Nampoori	Neural Networks
3.	P M Radhakrishnan	Nil	Dr.VPN Nampoori	Speech Analysis - Non - linear Dynamics

6. Administrative Personnels:

Sl.No	Designation	No. of Posts
1.	Section Officer	1
2.	Assistant	2
3.	Typist /Steno	1
4.	Store keeper	1
5.	Peon	1
6.	Sweeper cum Cleaner	1

7. Technical Personnel:

Sl.No	Designation	No. of Posts
1.	Instrument Technician	1

8. Student Enrollment

Sl.No	Programme of Study	Men	Women	Total
1.	M.Tech (OE & LT)	4	6	10
2.	Ph.D	1	3	4



9. Research Facilities:

a) Laboratories (List out Major equipments available)

Major facilities available are:

- 12 W Argon ion Laser (Spectra Physics 171)
 - Argon ion laser(Liconix 5000)
 - Pulsed Nd:YAG lasers (Quanta Ray DCR – 11 and Quanta Ray GCR – 170)
 - Optical Parametric Oscillator (Spectra Physics MOPO – 700)
 - Ring Dye Laser (Spectra Physics 380)
 - Pulsed Dye Laser (Quanta Ray PDL 2)
 - Diode Pumped Solid State Lasers
 - Low temperature solution growth unit
 - UV–VIS–NIR Spectrophotometer (Jasco V-750)
 - Optical time domain reflectometer (Anritsu MW 920 A)
 - Photon counting system (Stanford research systems SR 400).
 - High resolution CCD camera and accessories (Panasonic KR222).
 - Boxcar Averager System.
 - Fiber Drawing System
 - High Vacuum Systems and accessories
 - Optical Spectrum Analyser
 - Optical Multi-channel Analyser
 - Quadrant Detector
 - Lock-in Amplifiers, Digital storage oscilloscopes
 - Femtosecond Laser system (80 fs -100fs, 80 MHz, Spectra Physics, TSUNAMI)
 - Splitfire Pro Ultrafast Ti:Sapphire Amplifier (2 mJ, 1 KHz)
 - 100 ns, 1KHz, 30 W, 527 nm Q-switched DPSS(EMPOWER, Spectra Physics)
 - 5W,532 nm DPSS (MILLENIUM, Spectra Physics)
 - Fluorescence Spectrophotometer (CARY Eclipse, VARIAN)
 - Fiber Optical Fusion Splicer (FUJIGAWA, JAPAN)
 - High Resolution Fiber Optic Spectrometer (HR 4000 Ocean Optics)
 - Optical Spectrum Analyzer (AQ 6319 YOKOGAWA)
 - Broad band white light source (AQ 4305 YOKOGAWA)
 - 1J, 8 ns, 10 Hz, Nd:YAG laser (quanta Ray, Spectra Physics)
 - Tunable Semi Conductor laser (Sacher Lasertechnik Marburg)
 - 1 GHz Digital Phosphor Oscilloscope (Techtronix)
 - 15 W CO₂ laser
 - Research Centrifuge
 - SPIN 150 (Spin coater unit)
 - Vacuum Oven (KEMI)
-



b) Library

No. of books and Journals as on 31 st March of the Previous Year	Additions during the current year
1496 Books and 15 Journals	173 Books till March 2008

c) Others

10. Distinguished visitors:

Sl. No	Name	Affiliation	Remarks
1.	Dr. Pramod R Pratap	University of North Carolina	Attended Seminar on 12.06.2008
2.	Dr. Jayan Thomas	Arizona University, USA.	Attended Seminar on 24.06.2008
3.	Dr. Jagthap	Bhaba Atomic Research Centre	Attended Seminar on 24.10.2008
4.	Dr. Sajeev Kumar	SKKU South Korea	Attended Seminar on 24.10.2008
5.	Dr. Vijayan C	IIT Madras	Attended Seminar on 07.11.2008
6.	Prof. Porsexian	Pondichery University	Attended Seminar on 07.11.2008
7.	Prof. C Unnikrishnan	Tata Institute of Fundamental Research Sciences	Attended Seminar on 14.11.2008
8.	Ms. Priya Rose	Research Scholar, University of Naples, Italy	Attended Seminar on 27.11.2008
9.	Prof. A K Asundi	NTU Singapore	Attended Seminar on 05.12.2008
10.	Jithin Jose	Ph.D Student, University of Twente, Netherland	Attended Seminar on 08.01.2009
11.	Mr. Bijoy Varghese	University of Camerino, Italy	Attended Seminar on 12.02.2009

11. Ph.Ds Awarded:

Sl. No	Name of Research Scholar	Title of Thesis	Supervising Guide
1.	Litty Mathew Irimpan	Spectral & Non-linear Optical Characterisation of ZnO nanocomposites	Dr. P. Radhakrishnan & Dr.VPN Nampoori

12. Publications:

a) Papers:

Sl.No Name of Paper

Publications-2009

- 1 **Fast imaging of laser blow off plume: lateral confinement in ambient environment**, Sony George, Ajai Kumar, R.K.Singh, V.P.N.Nampoori, APPLIED PHYSICS LETTERS 94, 141501 (2009)

Publications-2008

- 2 **Visible luminescence mechanism in nano ZnO under weak confinement regime**, Litty Irimpan, V P N Nampoori and P Radhakrishnan, Journal of Applied Physics, Volume 104, December 2008, Page 113112



- 3 Enhanced luminescence and nonlinear optical properties of nanocomposites of ZnO-Cu**, Litty Irimpan, V P N Nampoori and P Radhakrishnan, Journal of Materials Research, Volume 23, Issue 11, November 2008, pp 2836-2845
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- 7 Excitation wavelength dependence of energy transfer in dye mixture doped polymer optical fibre preforms**, M.Kailasnath, Nishant Kumar, V.P.N.Nampoori, C.P.G. Vallabhan, P.Radhakrishnan Journal of photochemistry and Photobiology A: Chemistry 199(2008) 236-241
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- 13 Luminescence tuning and enhanced nonlinear optical properties of nanocomposites of ZnO-TiO₂**, Litty Irimpan, Bindu Krishnan, V P N Nampoori and P Radhakrishnan, Journal of Colloid and interface Science, Volume 324, Issues 1-2, August 2008, pp 99-104
- 14 Backscattering of laser light from colloidal silica**, Litty Irimpan, V J Dann, Bindu Krishnan, A Deepthy, V P N Nampoori and P Radhakrishnan, Laser Physics, Volume 18, Issue 7, July 2008, pp 882-885



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- 16 **Side illumination fluorescence emission characteristics from a dye doped polymer optical fiber under two photon excitation**, M Sheeba, M Rajesh, S Mathew, VPN Nampoori, CPG Vallabhan and P Radhakrishnan, Appl. Opt, 2008 – OSA
- 17 **Photoluminescence studies on rare earth titanates prepared by self propagating high temperature synthesis method**, Lyjo K Joseph, K R Dayas, Bindu Krishnan, Soniya Damodar, K Krishnankutty, V P N Nampoori and P Radhakrishnan, Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy, DOI information: 10.1016/j.saa.2008.03.030.
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- 19 **Fabrication and characterization of dye mixture doped polymer optical fiber as a broad wavelength optical amplifier**, M. Sheeba, M. Rajesh, V. P. N. Nampoori, and P. Radhakrishnan, Applied Optics, Vol. 47, Issue 11, 2008, pp. 1907-1912.
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- 22 **Spectral and nonlinear optical characteristics of nanocomposites of ZnO–Ag**, Litty Irimpan, V.P.N. Nampoori and P. Radhakrishnan, Chemical Physics Letters Vol 445, 10 april 2008 ,pp 265-269.
- 23 **Effect of self assembly on the nonlinear optical characteristics of ZnO thin films**, Litty Irimpan, A. Deepthy, Bindu Krishnan, L.M. Kukreja, V.P.N. Nampoori and P. Radhakrishnan , Optics Communications Vol 281, 15 may 2008, pages 2938- 2943.
- 24 **An Optoelectronic Sensor Configuration for the Determination of Age Related Indices Using Blood Volume Pulse**, Jayasree V.K, Shaija P.J, Manu P. John, P. Radhakrishnan, Sensors & Transducers, vol.87, Jan.2008, pp 39-45.
- 25 **Size dependent enhancement of nonlinear optical properties in nano colloids of ZnO**, Litty Irimpan, Bindu Krishnan, A. Deepthy, V.P.N Nampoori and P. Radhakrishnan, Journal of applied physics, 103, 033105 (2008).

b) Books:

Sl.No Name of Book

1. **Harnessing Light**, Dr. P. Radhakrishnan, Dr.VPN Nampoori, Dr.V M Nandakumaran and Dr. Suresh Nair.
-

**13. Participation in Seminar/Conference/Workshop/Refresher Courses etc by Faculty / Students**

Sl.No	Name of Participant	Name of Seminar/ Conference/ Workshop	Role
1.	Dr. P. Radhakrishnan	Photonics-2008(international Conference),Delhi December 2008	Invited Speaker,
2.	Mr.Linesh J	Photonics-2008(international Conference),Delhi	Participant
3.	Mr.Sudheesh P	Photonics-2008(international Conference),Delhi	Participant
4.	Mr.Mathew S	Photonics-2008(international Conference),Delhi	Participant
5.	Mr.Sony George	Photonics-2008(international Conference),Delhi	Participant
6.	Mr.Thomas K J	Photonics-2008(international Conference),Delhi	Participant
7.	Ms.Sithara S P	Photonics-2008(international Conference),Delhi	Participant
8.	Ms.Vasuja R V	Photonics-2008(international Conference),Delhi	Participant
9.	Dr.VPN Nampoori	Photonics-2008(international Conference),Delhi & Session Chair	Invited Speaker
10.	Dr.VPN Nampoori	National conference as Lasers and Photonics, February -2009, Santhiniketan, Calcutta.	Invited Speaker & Session Chair
11.	Mr.Sony George	Workshop on Digital Image and Video Processing at NIT, Tiruchirappalli-November-08	Participant
12.	Mr.Mathew S	National Conference on Nanophotonic Materials -October-2008, Department of Physics, CUSAT	Participant

14. Awards/ Honours/Fellowships etc. received

Sl.No.	Name of Recipient	Name of Fellowship / Honour / Award	Awarding Agency
1.	Mr.Rajeshkumar	National Research Prize, ANVESHAN,2008	Association of Indian Universities (AIU)
2.	Ms.Sandhya T.V	1 st Rank in M.Tech (OE & LT)	Dr.C.P. Girjavallabhan, former director of CELOS
3.	Ms. Anusha Keloth	Nalanda Endowment Prize	Prof.N G Devaki, Dept. of Hindi, CUAT
4.	Mr.Jemy James	Received 2 nd Prize for Web Designing in ISP-SPIE Student Chapter meeting, 2008 in San Diego	ISP-SPIE Student Chapter

15. Sponsored Research Projects

Sl. No	Title	Sponsoring Agency	Amount	Investigator(s)
1.	Center for Adult Continuing Education & Extension (CACEE)	UGC	2 Lakh	Dr.VPN Nampoori



16. Research Programmes and Activities

SI.No.	Problem/ Topic	Investigator(s)
1.	Fiber Sensors & Laser Applications	Dr. P. Radhakrishnan

17. Seminar/ Conference / Workshop/Refresher Courses conducted by the Department

SI.No	Title	Duration	Coordinator	Funding Agency
1.	Indo - UK Workshop	3 days	Dr.VPN Nampoori	Royal Society, UK & Dept. of Science and Technology, Govt of India
2.	Annual Photonics Workshop	2 days	Dr.VPN Nampoori	CELOS, ISP-SPIE
3.	Raman Day Symposia	1 day	Dr.VPN Nampoori	Cochin University of Science and Technology

18.Consultancy Work:

SI.No	Name of Consultancy	Name of consultant	Sponsoring Agency
1.	Sterlite Technologies Pvt.Ltd	Dr. P. Radhakrishnan	Sterlite Technologies Pvt.Ltd



COCHIN UNIVERSITY COLLEGE OF ENGINEERING KUTTANAD

Cochin University College of Engineering Kuttanad is a self-finance college, which was instituted in 1999. It is the only campus of CUSAT functioning outside Ernakulam District. Five branches of B.Tech 4 year course students and three batches of MCA students are continuing their studies.

All India Council for Technical Education had sent inspection teams on various occasions for assuring the infrastructure facilities and is satisfied with the facilities provided. Now the AICTE approval is for a yearly intake of 240 students.

1. Programmes of Study/Research

1. B.Tech courses in Information Technology, Computer Science & Engineering, Electronics & Communication Engineering, Electrical & Electronics Engineering and Mechanical Engineering.
2. MCA course.

2. Faculty Members

Sl.No.	Name	Designation	Qualification	Specialization (Branch)
1	P.A. Job	Reader & Principal (I/c)	M.Tech (Mech)	
2	Anilkumar.KK	Lecturer	B.Tech (Electronics & Communication)	
3	Augustine.J.Kattady	"	M.Tech (Mechanical)	
4	Harikrishnan. D	"	M.Tech	
5	Jabir. KVT	"	B.Tech (Comp.Science)	
6	Jayaprabha. P	Reader	M.Tech	
7	Jesslette Sam	Lecturer	B.Tech (Comp.Science)	
8	Kunhamu. K	"	M.Tech (Control System)	
9	Manoj Kumar. P	"	B.Tech (Comp.Science)	
10	Mathew Cherian	Reader	M.Tech (Management)	
11	Meera. A R	Lecturer	M.Tech (Comp.Science)	
12	Minimole. A	"	B.Tech (Civil)	
13	Dr. A. Mujeeb	Reader	M.Sc (Physics)	
14	Preetha Mathew. K	"	M.Tech (Comp.Science)	
15	Priya. R. Krishnan	Lecturer	B.Tech (Ele.&Electronics)	
16	Sajan Joseph	Lecturer	B.Tech (Ele.&Electronics)	



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17	Salaji. S	Reader	B.Tech (ME)
18	Senthil Prakash. MN	Reader	M.Tech (Mech)
19	Shiny Paul	Sr. Lecturer	B.Tech (Ele.&Electronics)
20	Shiyas. C R	"	M.Tech (Mech)
21	Sunilkumar. N	"	B.Tech (Civil)
22	Thomas. T	"	M.Tech (Mech)
23	Dr. R. Asaletha	"	Ph.D (Chemistry)
24	Dr. Josephkutty Jacob	Reader	M.Tech (Ele.&Electronics)
25	Manoj. V J	Lecturer	M.Tech (Electronics)
26	Bindu. P K	"	B.Tech (Comp.Science)

3. Visiting Faculty (If any)

Sl.No.	Name	Designation	Qualification	Specilisation
NIL				

4. Research Staff

Sl.No.	Name	Designation	Qualification	Specilisation
NIL				

5. Research Scholars

Sl.No.	Name	Funding Agency	Guide	Area of Work
NIL				

6. Administrative Personnel

Sl.No.	Designation	No. of Posts
1	Section Officer	1
2	Asst. Librarian	1
3	Jr. Librarian	1
4	Professional Assistants	2
5	Assistants	5
6	Seln. Gr. Typist	1
7	L.D. Driver	1
8	Peon	2
9	Security Guard	1

7. Technical Personnel

Sl.No.	Designation	No. of Posts
1	Technician Gr.II	1
2	Lab Assistant	1
3	Lab Attendant	1

**8. Student Enrollment**

Sl.No.	Programme of Study	Men	Women	Total
1	B.Tech - CS	33	23	56
	EC	46	25	71
	EE	30	12	42
	IT	26	29	55
	ME	58	1	59
2	MCA	27	18	45

9. Research Facilities

a. Laboratories (List out Major equipments available)	
b. Library	
No of books and Journals as on 31st March of the Previous Year	Additions during the current year
Books: 10592	200
c. Others	

10. Distinguished visitors

Sl.No.	Name	Affiliation	Remarks
NIL			

11. Ph.Ds Awarded

Sl.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
NIL			

12. Publications

a. Papers	
Sl.No.	Name of Paper
NIL	
b. Books	
Sl.No.	Name of Book
NIL	

13. Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students

Name of Participant	Name of Seminar / Conference/ Workshop	Role
NIL		

14. Awards/ Honours/ Fellowships etc. received

Name of Recipient	Name of Fellowship/ Honour /Award	Awarding Agency
NIL		



15. Sponsored Research Projects

SI.No.	Title	Sponsoring Agency	Amount	Investigator(s)
NIL				

16. Research Programmes and Activities:

SI.No.	Problem / Topic	Investigator (s)
NIL		

17. Seminar/ Conference/ Workshp/ Refresher Courses conducted by the Department

SI.No.	Title	Duration	Coordinator	Funding Agency
NIL				

18. Consultancy Work

SI. No.	Name of Consultancy	Name of Consultant	Sponsoring Agency
NIL			



CENTRAL OFFICE FOR UNIVERSITY HOSTELS

Of the 12 students' hostels of the University, 8 were working under the supervision of the Central Office for University Hostels. They were :

-
- (i) Hostel No. I Sanathana (for boys)
 - (ii) Hostel No. III Aiswarya (for girls)
 - (iii) Hostel No. IV Siberia (for boys)
 - (iv) Hostel No. V Sarovar (for boys)
 - (v) Hostel No. VI Athulya (for girls)
 - (vi) Hostel No. VII Anaswara (for girls)
 - (vii) Post Matric Hostel for Boys
 - (viii) Post Matric Hostel for Girls
-

In October 2008 a new Post Matric Hostel was also opened for accommodating OBC Girls.

The other three hostels are under the supervision of various Departments as mentioned below:

CUMS Hostel	-	School of Marine Sciences
B.Tech. Hostel (Boys)	-	School of Engineering
Marine Engg. Hostel	-	Kunjali Marakkar School of Marine Engineering

Of the 9 hostels working under the Central Office for University Hostels, the three Post Matric Hostels were constructed by the SC/ST Welfare Department, Government of Kerala. The above 9 hostels can accommodate 712 boys and 764 girls totally, i.e.,

(i) Hostel No. I Sanathana	-	162
(ii) Hostel No. III Aiswarya	-	164
(iii) Hostel No. IV Siberia	-	106
(iv) Hostel No. V Sarovar	-	256
(v) Hostel No. VI Athulya	-	114
(vi) Hostel No. VII Anaswara	-	300
(vii) Post Matric Hostel for Boys	-	88
(viii) Post Matric Hostel for Girls	-	96
(ix) Post Matric Hostel for OBC Girls	-	88

100% seats of Athulya girls hostel and 60 seats of Sarovar boys hostel are earmarked for M.Phil. and Ph.D. students. Students of the School of Engineering belonging to SC/ST/OEC and OBC communities are given admission in the three Post Matric Hostels.

In the 2008-09 academic year, admission to the above 9 hostels had been as given below:



Sl. No.	Hostel	No. of inmates prior to 2008-09	Allotment during 2008-09	Current status
1	Hostel No. I Sanathana	171	77	146
2	Hostel No. III Aiswarya	164	130	163
3	Hostel No. IV Siberia	157	57	101
4	Hostel No. V Sarovar	165	79	181
	Sarovar (Research Scholars)	27	24	45
5	Hostel No. VI Athulya	113	62	112
6	Hostel No. VII Anaswara	202	125	232
7	Post Matric Hostel for Boys	102	54	76
8	Post Matric Hostel for Girls	96	40	78
9	Post Matric Hostel for OBC Girls	-	85	79

Application forms for admission to University hostels are available online at the University web site <http://www.cusat.ac.in/hostel/index.php>. Print out of the completely filled in application form is to be submitted to the respective Department where the student is studying. The Head of the Department will forward all the applications together to the Hostel office after verification and giving priority number based on the distance of home town from the University.

Allotment of seats in the hostels is given on the basis of date of admission and distance of the home town of the students from the University. Priority in allotment is given for SC/ST/OEC students. Moreover, 60% of the seats are exclusively reserved for SC/ST/OEC students in the Post Matric Hostels for Boys and Girls. If there are SC/ST/OEC students in the waiting list they are given priority in the remaining 40% seats.

A Hostel Advisory Committee with the following members had been constituted:

- | | | |
|-------|-------------------------------|------------|
| (i) | The Registrar | (Convener) |
| (ii) | The Chief Warden | |
| (iii) | Assistant Wardens | |
| (iv) | The University Engineer | |
| (v) | The University Union Chairman | (Members) |

The current staff position is as follows:

Chief Warden : Dr. Sunil K. Narayanankutty, Professor,
Department of Polymer Science and Rubber Technology

- Assistant Wardens:
1. Dr. V. Sivanandan Achari, Lecturer,
School of Environmental Studies - Sanathana
 2. Dr. Asha Gopalakrishnan, Reader,
Department of Statistics - Aiswarya
 3. Dr. P. Arunachalam, Reader,
Department of Applied Economics - Sarovar



4. Sri Sasi Gopalan, Lecturer in Mathematics,
School of Engineering - Post Matric Boys Hostel

The other hostels do not have Assistant Wardens.

Among the five girls hostels, three have Matrons. The Post Matric Hostel for OBC Girls does not have either an Assistant Warden or a Matron.

The Hostel Office is working with a staff strength of one Section Officer, one Assistant on daily wages and one Peon. 2 permanent Sweeper-cum-Cleaners are also working under the Hostel Office. 12 Nos. of Sweeper-cum-Cleaners on daily wages have been engaged against the vacant posts.



CENTRE FOR INFORMATION RESOURCE MANAGEMENT

The Center for Information Resource Management (CIRM) was established in 1998 with the help of the MHO-INFOCUS project of the Netherlands Government. In 2006, CIRM has been established as an Independent Centre with full fledged Office.

The main objective of CIRM is to act as the nodal centre for all the information technology resources of the university. It involves design, installation and maintenance of the IT infrastructure including the network, software resources and IT enabled services and facilities. CIRM also provide staff training, user support and specialized consulting services to user departments and external clients on demand.

CUSAT is one of the few institutions of higher learning in India that possess a state of the art, reliable and scaleable campus wide network which support the information needs of the user community. All the departments in the main campus are interlinked with a fiber optic backbone. Also the Lakeside Campus 15 Km away from the main campus is connected to the main network. The campus network is seamlessly integrated to the internet through broad band connectivity available to the user community on 24x7 basis. The internet connectivity in the Main as well as the Lake side Campus has been upgraded to 10 Mbps during the year 2008-09. With this new connectivity the users in the main campus and lake side campus can experience much higher band width.

The domain name cusat.ac.in is registered with the National Centre for Software Technology (NCST) India. The portal www.cusat.ac.in serves as the single window access point to all the information resources and IT enabled services of CUSAT which is managed by CIRM.

The knowledge advantage

The CIRM staffs are trained by the network specialists from the Delft University of Technology, The Netherlands, for maintaining the Mail server, Web server, DNS server, Proxy Servers and all other related servers for the internet in the main campus itself. CIRM uses robust technologies and software customized to work together to provide an uninterrupted and superlative service experience to the user community.

Continuously being on the bleeding edge of technology, CIRM has developed considerable expertise in many areas, technologies and platforms. CIRM is able to integrate various hardware architectures and also ensure interoperability among various and even conflicting software platforms. Facing the enviable task of being the IT backbone of the premier Science and Technology University in the country, is no easy job, but the enterprising staff of CIRM has proved their mettle.

The Facilities

The CUSAT portal acts as the single point access to all the information resource services offered by CIRM. Some of them are:



Internet

The web server is hosted in house and internet facility is extended to all CUSAT community on 24x7 basis.

Email

The mail server is hosted in house and email facility is extended to all teachers, staff, research fellows and post graduate students of the campus.

E-Learning

There is support for E-learning to the CUSAT community through both the proprietary system of Blackboard and the open source platform Moodle, both maintained by CIRM.

CIRM is planning to establish an online learning system with full functionality of Video Conferencing, online discussions and online interactive classes.

Voice Communication system

The voice communication system is installed with 600 lines both in the main and lakeside campuses.

Edusat

Edusat transmission is made available by CIRM providing the facility to view the programmes in the Computer center as well as the Library. The same can also be made available for any department on demand.

Projects completed

- Upgradation of Computer Lab and internet browsing Lab has been completed with new systems with the help of UGC funding.
- Connectivity up gradation from the existing bandwidth of 1 Mbps to 8 Mbps at the main campus and from 512 Kbps to 8 Mbps at the Lake side campus with dedicated fiber cable connectivity between the campuses. The process of connectivity up gradation is completed during the year 2008-09.
- Up-gradation of the intercom facility in the main and lakeside campus with DID have also been accomplished during 2007-08. This includes the increase of lines from 600 to 1000. Plans are also there to integrate the voice network of main campus with that of the lakeside campus.
- The Data network inside the university campus has been strengthened with the installation of new Edge switches and by replacing the damaged ones.
- The old mail servers at CIRM have been replaced by new servers to ensure smooth functioning and to increase data storage capacity.
- Extension works of the data and voice network to the new faculty /staff rooms of various departments/Centers/Sections of the University are undertaken by the Centre. Apart from this, rectification of complaints of computer systems of various sections and the routine maintenance of the data and Voice network inside the entire Main campus and the Lakeside campus are also done by the Centre.



- Network cabling and Telephone cabling works to the newly constructed Kunjali Marakkar School of Marine Engineering.
- Network cabling work to the University Guest house and Athidi Bhavan.
- Telephone cabling work to the Post metric hostel and O.B.C Hostel for girls.
- Network cabling and Telephone cabling works at the Department of Atmospheric Sciences, Lakeside Campus, CUSAT.

Proposals for Immediate Implementation

Up gradation of Data & Voice communication facilities to all the Ladies Hostels, CUSAT.

Proposals have been submitted for providing networking facility (both wired and wireless), advanced Computer systems and additional intercom facilities to all the Ladies Hostels and the working women's hostel of the University. Also, a proposal has been submitted for upgrading the Common Facility Centre (Ladies hostels) with Network and Intercom facilities, Computer systems, Multimedia Projector and Digital photocopier. The above submitted proposals will be financed by the UGC XI Plan Fund-Merged Schemes under General Development Assistance.

Network security systems

As the complexity of the network and the available services are growing daily, issues of network safety and privacy are to be addressed seriously. Attacks from hackers, software bots and viruses are increasing rapidly. To provide resistance against these attacks the centre has installed a UTM box in the gateway.

New Web Server

A new high end web server with massive data storage capability has been purchased for content generation, enhanced mail functionality and other high end applications.

Proposals for the coming years

e-Governance

ICT center will provide a platform for the governing and administrative functions of the University. The various facilities of the center would facilitate effective and efficient management of day-to-day administration of the university, besides providing an opportunity to remain connected with national level agencies of higher education like UGC and AICTE and other regulatory, funding agencies. The center's role will assume greater significance against the back drop of UGCs plan to go on e-Governance mode during 11th plan period and the University will also become under a continuous connectivity with the state government agencies like KSCSTE, DTE etc.

Video-Conferencing

ICT center will provide all necessary infrastructures to facilitate video conferencing.

Content digitization services

A team at ICT center will act as e-content creators. All the digitization work including course materials and other knowledge generated from the university, orders, circulars, bulletins etc. will be done through the team.



E-Content Repository

ICT center will host a central server for gathering and disseminating e-Content. The repository will include e-books, course materials created by teachers, short learning objects, research papers, thesis generated from universities all over Kerala.

Information Kiosks

Under the common university act, every transactions of the university must be available to the common public. To facilitate this ICT center will design and implement information kiosks in key places with the university

“All under one roof” Counter

ICT center will provide any information required to the student community related to their exams, certificates, course details etc.

Fast Track Facility

ICT center can provide infrastructure to facilitate a fast track mechanism to obtain certificates and related things in very short span of time.

FM Station

ICT center can take initiatives to start an FM station.

Short Courses to the Public Community

As part of commitment to the society ICT center can take initiates with the help of teaching departments to give out short courses to the school teachers, entrepreneurs etc.

CUSAT Alumni Database

ICT center will take initiatives to correlate all the departments to have their alumna's database.

Software Repository

To encourage use of licensed software; a repository of commonly used software with campus license is required. Any department can install software from this repository on request.

High Performance Computing Facility

The entire high end computing requirements of various departments could be met from this facility. ICT can take initiatives to set up one.

Advanced Networking Lab

An advanced networking lab is another priority. This is required for conducting advanced research in the area of networking.

Wi-Fi Campus

CIRM is moving towards having a full fledged e-campus ensuring access to the network to the user community irrespective of their location.

Call Centre

CIRM is also planning to establish a call centre facility for providing required information to the public.



1. Programmes of Study/Research	: N.A
2. Faculty Members	: N.A
3. Visiting Faculty (If any)	: N.A
4. Research Staff	: N.A
5. Research Scholars	: N.A

6. Administrative Personnel

Sl.No.	Designation	No. of Posts
01	Hon. Director	01
02	Office Superintendent	01(Vacant)
03	Assistant	01
04	Peon	01
05	Sweeper /Cleaner	01

7. Technical Personnel

Sl.No.	Designation	No. of Posts
01	Technical Officer	01
02	Technical Assistant Grade III	02

8. Student Enrollment : N.A

9. Research Facilities

Computing Labs (Major equipments available)

i). Computers, Servers ,Printers & Network Components.

S/N	Item		Qty
01	Infinity Global Line 2700 HN	Server	2
02	HP Netserver LH4	"	1
03	HP Netserver LC3	"	1
04	HP Kayak PIII	PC	1
05	Acer PIV	"	2
06	IBM PIV	"	3
07	Infinity Pro P IV	"	21
08	IBM Thinkcentre	"	30
09	Wipro LQ-1050+DX	Printer	1
10	HP Laser Jet 1150	"	1
11	Tally T2245	"	1
12	HP Laser Jet 1020	"	1
13	HP Laser Jet 1022	"	1



14	3Com switch 4060	Core switch	4
15	3Com super stack III switch 4228G	Edge switch	27
16	Edge switches Foundry	Edge switch	11
17	IBM Server	Mail Server	2
18	HP server DL	Server	1
19	Keltron PC Intel core 2 Quad	PC	10

ii) UPS Systems

No	Item	Qty
01	40KVA Merlin Gerin UPS	2
02	40 KVA Tata Liebert UPS	1
03	1 KVA UPS system - APC	5

iii) Voice Communication Systems (Upgraded)

EPABX System - Hipath 4000 (1000 Lines at the Main Campus And 96 Lines at the Lake side Campus)

10. Distinguished visitors	: Nil
11. Ph. Ds Awarded	: N.A.
12. Publications	: N.A
13. Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.	: Nil
14. Awards/ Honours/ Fellowships etc. received	: Nil
15. Sponsored Research Projects	: N.A.
16. Research Programmes and Activities	: N.A
17. Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department	

Sl.No.	Title	Duration
01	Training programme to school teachers on IT@School-GNU/Linux	4 days w.e.f. 22 nd May to 25 th 2007)
02	Departmental LAN Managers training Programme	5days (9 th July-13 th July 2007)
03	Training programme on Linux, to Students, V.H.S.E, Thevakkal	3 days
04	Computer Training to University staff in association with Department of Computer Applications	Conducted in batches
05	Orientation programme on 'Koha' library automation software in association with the University library	1 day on 18.10.2007
06	Training programme on D Space digital repository system conducted in association with University Library	2 days, 15 & 16 , Jan.2008



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- | | | |
|----|--|---|
| 07 | Training programme for professional assistants
Conducted in association with the University library | I st batch 5 days, Feb 2008
II nd batch 5 days, March 2008 |
| 08 | Training programme for Industrial Extension Officers,
conducted in association with Kerala Institute for
Entrepreneurship Development, Kalamassery | 7 days, January 2008 |
| 09 | Training programme on Digital Library(D Space)
conducted in association with School of Engineering
Library | 2 days,24 th &25 th March2008 |
| 10 | National Conference on Free Software | November 15 th to 16 th 2008 |
| 11 | National Workshop on Dspace conducted in
association with University Library | 20 th to 25 th April 2008 |

18. Consultancy Work : **N.A.**



ENGINEERING DEPARTMENT

Administrative Personnel

Sl. No.	Designation	No. of posts
1.	Section Officer	2
2.	Assistant	2
3.	Sr. Gr. Assistant	1
4.	Sel.Gr. T/Steno	1
5.	Sr.Gr.T/Steno	1
6.	Peon	2
7.	Sweeper cum cleaner	1
8.	LD Driver	1
9.	Assistant (Daily wages)	2
	Total	13

Technical personnel

1.	University Engineer	1
2.	Executive Engineer/T.O.	1
3.	Asst. Exe.Engineer (Civil)	4
4.	Asst. Exe. Engineer (Ele.)	1
5.	Asst. Engineer (Civil)	7
6.	Asst. Engineer (Ele)	2
7.	Overseer /Gr. I(Civil)	3
8.	Overseer GR. I (ele.)	2
9.	Overseer Gr. II (Civil)	2
10.	Overseer Gr. III (contract)	3
11.	Electrician Gr. II	8
12.	Line Helper	9
13.	Plumbing Supervisor	1
14.	Plumber	2
15.	Plumber (on Deputation)	1
	Total	47



COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY
ENGINEERING DEPARTMENT

ANNUAL REPORT 2008 2009

1. Name of the University Engineer in charge

Smt. P. J. Sheela	01/01/2008	to	19/09/2008
Sri. Gangadharan C.	20/09/2008	to	14/10/2008
Sri. C. K. Georgekutty	15/10/2008	to	31/03/2009

(on Contract basis)

Budget amount for

a) Major work Plan	3,58,59,000
b) Major work non-plan	5,00,000
c) Centre for School of Engineering (Marine Engg.)	92,00,000
d) Centre for School of Engineering	1,77,30,000
e) Centre for Kuttanadu	4,53,00,000

Major works started during this year

Sl.	Name of work	Name of contractor	Estimated amount Rs.	Actual amount of bill Rs.	Remarks
1.	Construction of 1st floor to ladies common room	Sri. Cheriyan Varghese	5,00,000	8,05,807	Work completed
2	" " to Gymnasium	Sri. Joji Jacob	5,00,000	8,00,313	" "
3.	Rewiring of Applied Chemistry	M/s.Techno Craft	5,90,000	7,57,369	" "

**94-2 Centre for Engineering Studies University College of Engineering, Kuttanad**

T-1 Depts	350	Engineering College cross bldg complex	3,58,00,000	11369600
	351	Construction of workshop building	30,00,000	2421372
24 others	900	Construction of roads	8,00,000	492769
	901	compound wall around campus	30,00,000	—
	902	Development of land & earth filling	20,00,000	—
	905	Bore well & Treatment plant	5,00,000	—
	999	Minor works	10,00,000	3,96,557
Total			4,61,00,000	1,46,80,298

19-2 CUSAT upgradation to IEST (MHRD)

T-1 works	209	Ship-in-campus	52,22,763	52,22,763
	383	Construction of Software Engg block	32,76,526	32,76,526
4 others	621	Augmentation of Substation	15,74,022	9,48,500
			1,00,73,311	94,47,789

94-4 Centre for Engineering Studies - Marine Engineering campus

T works	300	Marine Engineering campus	25,00,000	13,49,867
4 others	601	Construction of compound wall & gate	25,00,000	10,00,400
	951	Providing 160KVA standby DG set for Marine Engineering campus	11,00,000	
	952	Sewage Treatment Plant	26,00,000	
	999	Minor works	5,00,000	
			92,00,000	23,59,267

94-1 Centre for Engineering Studies

T-1-Depts	381	Construction of Lecture hall complex block No. II	25,00,000	
	387	Fire & Safety Engineering lab	15,00,000	
	389	Electrical Engineering block	14,30,000	14,23,820
	390	CES vertical extension to the existing lecture hall	25,00,000	
Total				
2 Hostels	476	Construction of men's hostel	28,30,000	19,42,590
4 Others	600	Construction of roads	10,00,000	
	601	Construction of compound wall	19,00,000	
	615	Extension to CES canteen	25,00,000	
	999	Minor works	25,00,000	12,60,005
			1,86,60,000	46,26,415



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97-0- T-Works

2-Hostels	403	New men's hostel	6,86,609	6,80,821
	600	Major repairs/con. of roads	20,00,000	14,58,091
	601	compound wall around TKA campus	25,00,000	6,67,257
	627	Basic facilities for women	50,00,000	11,50,045
4 Others	624	Construction of women's common room	6,71,331	6,20,826
	625	Construction of Gym. building	7,02,184	7,02,184
	999	Minor works	5,00,000	4,99,990
		Total	1,20,59,137	57,79,214

Expenditure spent for the completed works

1.	Marine Engineering campus	13,49,867
2.	Construction of men's hostel	6,80,821
	Total	20,30,688

**1-97-0-T-4-999 Minor works - budget amount 1,00,00,000/-**

Sl.	Name of work	Name of contractor	Amount Rs.
1.	Rectification works in Photonics lab	Dept.	2,64,622
2.	Construction of 2Nos. guard room for hostel No. V	S.S. Suresh Kumar	1,26,012
3.	Engaging casual labourers for waste disposal at Thrikkakara campus	M/s.Kudumba Sree Vattekkunnam	3,00,000
4.	Supply, installation and testing 1.5T split Air Conditions with stabilizers	M/s. Cool Care Aluva	1,26,900
5.	Renovation of toilet in 1st floor of Hindi Dept.	S.S. Suresh Kumar	79,925
6.	Purchase of kitchen utensils for B.Tech Men's hostel	M/s. Oscar Industries	2,22,000
7.	Providing Bio gas treatment plant - balance amount	M/s. ANERT	58,475
8.	Providing aluminium sheet roofing over the kitchen area of Aiswarya hostel	P.A. Abdulla	2,14,279
9.	Construction of mushroom cultivation unit and vermin compost unit for Rajiv Gandhi Chair	S.S. Suresh Kumar	1,18,000
10.	Annual maintenance contract for passengers elevation installed at multistoreyed building at Lakeside campus	M/s. ThyssenKrupp Elevator India	91,075
11.	Maintenance of students union office and music club in CFC building at Thrikkakara	S.S. Suresh Kumar	45,300
12.	Electrification to the building for housing boundary layer LIDAR facility at Atmospheric Science in Thrikkakara	M/s. Techno Craft	81,364
13.	Cutting and removing thick and thorny jungle in connection with the UGC visit	Dept.	38,797
14.	Replacing doors and windows on the Office of the Dept. of Physical Education	Dept.	25,380
15.	Providing protection wall in three pole structure in connection with augmentation of Substation	Dept.	23,400
16.	Maintenance of substation No. I	Dept.	55,000
17.	Providing furniture in the auditorium of PS&RT	Dept.	4,92,000
18.	Providing grill to the air holes to prevent theft B-Tech Men's hostel	Dept.	1,45,000
19.	Rectification in ceiling and painting work in the Office of Nodal Centre	Cheriyar Varghese	96,583
20.	Renovation of room in basement floor of SMS Dept.	Pradeep K.S.	98,959
21.	Providing Office cabin for matron near the entrance of Anaswara ladies hostel	Vinod O.T.	35,000



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22	Providing aluminium sheet roofing over the roof slab of kitchen & work area in Aiswarya hostel	P.A. Abdulla	7,80,053
23	Electrical work for installing 5 KVA UPS in the Central Library	M/s. Dinu Electricals	25,289
24	Providing 400w MH lamp in plug ground electrical work in Computer Research lab	Dept	49,014
25	Cutting and removing of overgrowth and thick thorny jungles	A.I. Supran	93,239
26	Providing gas connection and cabin for gas cylinders in the OBC hostel for girls	M/s. Indian Oil Corporation	64,743
27	Providing grills to windows and ventilators to the rooms in Physical Oceanography in M.S. campus	Polly Mathew	27,300
28	Laying new 3 1/2x240 sqmm GG cable for Substation No. I to 3 pole structure	M/s. Dinu Electricals	2,91,917
29	Rewiring B type quarters unit 1 to 8	M/s. S.S. Electricals	3,63,135
30	Rewiring type II quarters	" "	3,16,179
31	Urgent maintenance work in connection with the National Conference on free Software Engg.	S.S. Suresh Kumar	4,39,710
32	Concreting the internal roads of Biotechnology dept.	S.S. Suresh Kumar	1,76,327
33	Cleaning & painting of compound wall of Bio technology Dept.	Dept.	9,155
34	Urgent maintenance and modification works to main canteen	C. M. Kasim	6,81,272
35	Urgent repairs to the toilet and renovation works in the building for PS&RT	Polly Mathew	1,84,568
36	Renovation works to the room in FF - Dept. Instrumentation	Joji Jacob	1,73,659
37	Construction of kitchen shed work area and renovation work in the pantry to main canteen in Thrikkakara campus	Cheriyar Varghese	7,01,818
38	Purchase of tables for student room America College of Dubai in Adhithi Bhavan	M/s. Godrej & Boyce Mfg Co.	68,838
39	Rewiring of Type I quarters	M/s. S. S.Electricals	4,04,545
40	Renovation works to the class room in SIF for M.Phil programme in fisheries Science in Marine Science campus	B.A. Shayas	43,806
41	Purchase of cement	Dept.	1,51,030
42	Renovation of toilets in the anteroom of VC's office	S.S. Suresh Kumar	94,204



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43	Providing wall fan and electrical works in the Dept. of Applied Economics	Dept.	13,079
44	Maintenance to the control air conditioning installed in the Computer Centre	Dept.	11,080
45	Electrification to the mushroom cultivation unit	Dept	13,400
46	Barbed wire fencing around the vermin compost unit	Cheriyam Varghese	14,108
47	Amount incurred for purchase of water supply, electrical fittings, labour charges of civil & electrical works, Petty maintenance charges & Advertisement charges of various works	Dept.	17,94,216
<hr/>			
	Total		97,23,755
<hr/>			



CENTRE FOR SCIENCE IN SOCIETY

The Centre for Science in Society was established in 1991 under the UGC VIIIth plan Development Assistance with financial aid from Cochin Refineries Limited. It is instituted as endowment CRL Chair in the University. The centre conducts various programmes about science with the view to popularize Science and Technology among children. The centre has its own facilities like library, Workshop, Computer lab, Science labs, and toy labs, Science - Park, Herbal Garden, and Science Pavilion etc. Some of the programmes offered by C-SiS are as follows: One Day Attachment Programme (ODAP) is for batches of students from a school. Young Scientists Forum (YSF) is a programme for which children directly seek admission to C-SiS. The programme is conducted on Saturday/Sunday every month for one full year. Science Talent Development Programme is an intensive programme meant for children with special attitude for science. This programme starts on first week of April every year and will continue for 7 weeks till the end of May. In addition to these C-SiS undertake various training programmes with financial aid from Government bodies.

1. Programmes of Study/Research

NIL

2. Faculty Members

Sl.No.	Name	Designation	Qualification	Specilisation
1.	Dr. K.G. NAIR	Honorary Director	M.Sc. Ph.D.	Electronics, Microwave Antennas.

3. Visiting Faculty (If any)

Sl.No.	Name	Designation	Qualification	Specilisation
NIL				

4. Research Staff

Sl.No.	Name	Designation	Qualification	Specilisation
NIL				

5. Research Scholars

Sl.No.	Name	Funding Agency	Guide	Area of Work
NIL				

6. Administrative Personnel

Sl.No.	Designation	No. of Posts
1.	Assistant	1
2.	Typist	1 (Vacant)
3.	Peon	1
4.	Sweeper-cum-Cleaner	1 (Vacant)



7. Technical Personnel

SI.No.	Designation	No. of Posts
NIL		

8. Student Enrollment

SI.No.	Programme of Study	Men	Women	Total
NIL				

9. Research Facilities - NIL

a. Laboratories (List out Major equipments available)

b. Library

No of books and Journals as on 31 st March of the Previous Year	Additions during the current year
Books - 6666, Journals - 11	Books - 523

c. Others

10. Distinguished visitors

SI.No.	Name	Affiliation	Remarks
1.	Prof. Martin Kamela	Assistant Professor, Dept. of Physics, Elon University, North Carolina, USA.	
2.	Prof. Crista Coles-Arangala	Associate Professor, Dept. of Mathematics, Elon University, North Carolina, USA.	
3.	Dr. Sebastian Paul	Member of Parliament, Ernakulam.	28-9-2007
4.	Dr. G. Gopakumar	Prathibha Poshini, ISRO, Thiruvananthapuram.	26-5-2007
5.	Dr. Luis Miguel Romero	Rector Chancellor, Technical University of Losa, Ecuador, South America.	23-9-2008

11. Ph.Ds Awarded -

SI.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
NIL			

12. Publications - NIL

a. Papers

SI.No.	Name of Paper
NIL	

b. Books

SI.No.	Name of Book
NIL	



13. Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.

Name of Participant	Name of Seminar / Conference/ Workshop	Role
NIL		

14. Awards/ Honours/ Fellowships etc. received -

Name of Recipient	Name of Fellowship/ Honour /Award	Awarding Agency
NIL		

15. Sponsored Research Projects

SI.No.	Title	Sponsoring Agency	Amount	Investigator(s)
NIL				

16. Research Programmes and Activities: -

SI.No.	Problem / Topic	Investigator (s)
NIL		

17. Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department

SI.No.	Title	Duration	Coordinator	Funding Agency
1.	Sastraposhini Follow up Training Programme for Secondary School Teachers	3 days	Dr. K.G. NAIR	KSCSTE, Thiruvananthapuram.

18. Consultancy Work

SI. No.	Name of Consultancy	Name of Consultant	Sponsoring Agency
NIL			



NODAL CENTRE FOR KERALA

NATIONAL TECHNICAL MANPOWER INFORMATION SYSTEM (NTMIS)

A. INTRODUCTION

NTMIS has been set up by the Ministry of Human Resource Development, Govt. of India in 1984 to provide upto date and meaningful manpower information on a continuing basis to enable the concerned authorities to anticipate areas of growth in the field of Science and Technology and consequently plan for technical manpower development on a scientific basis.

The NTMIS comprises of a Lead centre in the Institute of Applied Manpower Research, New Delhi and 20 nodal centres are located at different parts of the country. The Kerala Centre is functioning in CUSAT from 1984 and is attached to the School of Engineering. This scheme is funded by the All India Council for Technical Education (A.I.C.T.E.). The A.I.C.T.E. is strengthening NTMIS with adequate infrastructure making it an upto date and dynamic national database. The NTMIS is becoming a unique, reliable and comprehensive information system.

B. OBJECTIVES

1. Estimation of short-term and long-term requirements of different categories of engineering and technical manpower in different fields with branches of specialization.
2. Estimation of supply of different categories of engineering and technical manpower on the basis of existing intake and out-turn figures.
3. Assessment of anticipated gaps in demand and supply position in the present and in the future years.
4. Collection and analysis of data to match the job requirements with facilities for education and training.
5. Provide forecasts about adequacy or shortage of manpower requirements in the future years.
6. Undertake study of assessment of future needs and for giving indications about the specialized areas requiring urgent attention for expansion of facilities for education and training

C. DATA COLLECTION

The data collection work mainly consist of the following

1. Graduate follow up survey - The details of candidates of diploma holders, degree holders and postgraduates are collected in a prescribed format.
2. Institutional survey - This consists of details of facilities from diploma level and degree level institutions in a prescribed format.
3. Establishment survey - This consists of data collection from different establishments regarding the details of engineering and technical manpower employed. This work is done by the Board of Apprenticeship Training (BOAT), Chennai.



The details of institutions and the number of students covered in the survey are given in Appendix 1. Annual report is prepared based on the above three surveys in the Nodal Centre. This report gives comprehensive information and projections at the State Level.

D. WORK DONE

The graduate follow up survey for years 1983 to 2008 have been completed and the work for the year 2009 is in progress. Institute survey has been completed till the year 2008-09.

E. FACILITIES

The office is equipped with a fax, a photocopier, a franking machine, four computers and four printers.

F. ADVISORY COMMITTEE

For ensuring co-ordination and for developing the state modules an Advisory Committee for each state has been formed with the following composition

1. Vice Chancellor, CUSAT - Chairman
2. The Director of Technical Education of the State
3. The Director of Industries and Commerce of the State
4. The Regional Officer of Ministry of Education
5. The Director of Regional Apprenticeship Board
6. Head of the State Manpower Unit / Dept.
7. A representative from the Lead Centre
8. A representative from AICTE New Delhi
9. Head of Nodal Centre

The Advisory committee provides guidance and support to the Nodal Centre and will ensure that work in each state becomes comprehensive enough to constitute a complete information system at the state level.

G. ORGANIZATIONAL SET UP

The organizational set up is as follows:

- | | | |
|--------------------------|---|-----------------------------------|
| 1. Sri. Joseph Alexander | - | Project Officer and Head |
| 2. Dr. Sabu Thomas | - | Research Associate |
| 3. Smt.Preetha Thomas | - | Computer Operator Cum Programmer |
| 4. Smt. Sajeena Mohamad | - | Personal Assistant / Stenographer |

Four Adhoc Investigators are also working for this project on temporary basis for the scheme.

H. FUNDING

An amount of Rs.1.90 crores have been received from the M.H.R.D. and A.I.C.T.E. till 31.03.2009. The annual budget proposed for 2009-10 is Rs.24,25,000/-

-
- 1. Programmes of Study / Research : N.A.**
-



2. Faculty Members

Sl. No.	Name	Designation	Qualification	Specialisation
1	Sri. Joseph Alexander	Project Officer	M.Sc (Engg)	Mechanical Production

3. Visiting Faculty (If any) : N.A

4. Research Staff : 1

Sl. No.	Name	Designation	Qualification	Specialisation
1	Dr. Sabu Thomas	Research Associate	M.A., M.Com, MBA, L.L.B, M.L.M., Ph.D	Economics (Labour Economics and Manpower Planning)

5. Research Scholars : N.A.

6. Administrative Personnel

Sl. No.	Designation	No. of Posts
1	Personal Assistant/ Stenographer	1

7. Technical Personnel

Sl. No.	Designation	No. of Posts
1	Computer Operator Cum Programmer	1

8. Student Enrollment : N.A.

9. Research Facilities

a. Laboratories (List out Major equipments available)

Details of Major Equipments in the Nodal Centre

Sl.No.	Items & Specifications
Computers	
1	HCL Server Intel P-III 866 MHz
2	HCL Node Intel P – III850 MHz
3	PCL Server 486 66 MHz
4	PCL Node 486 50 MHz (Upgraded Intel Celeron 730 MHz)
Printers	
1	HP Laser Jet 1000 Series
2	Dot Matrix Printer Epson LQ 1050 24 Pin
3	Epson Lx – 300 Printer
4	HP DeskJet 3940 Printer
5	HP Deskjet F4185 – All – in – one



UPS

- 1 UPS 1.0 KV
- 2 UPS 1.5 KV

Others

- 1 Photo Copier – Modi Xerox - not working
- 2 Photo Copier – Brother Express Support Team (DCP 7010)
- 2 Fax Machine F2100
- 3 Fax Machine – FC 335
- 4 Franking Machine
- 5 Air Conditioner – Window type

b. Library : N.A.

c. Others : N.A.

10. Distinguished visitors : N.A.

11. Ph.Ds Awarded : N.A.

12. Publications : Nil

13. Participation in Seminar / Conference / Refresher Courses etc by Faculty.

Sl. No.	Name of Participant	Name of Seminar / Conference / Workshop	Role
1	Joseph Alexander	Civil Engineering Education and Profession - Problems and Prospects, National Conference Organized by IAMR Delhi, 25-26 April 2008	Member

14. Awards / Honours / Fellowships etc. received : N.A.

15. Sponsored Research Projects : N.A.

16. Research Programmes and Activities

Sl. No.	Problem / Topic	Investigator (s)
1	Technical Manpower Planning	Joseph Alexander

17. Seminar / Conference / Workshop / Refresher Courses conducted by the Department : Nil

18. Consultancy Work : N.A.

19. Any other

The Website <http://nodalcentre.cusat.ac.in> provides a lot of information about Technical Education in the State.



NODAL CENTRE FOR KERALA

Details of Institutions and Number of Students covered in the Survey during 2008-09

Sl. No	Category	No. of Institutions in 2008		No. of Students (2008 Survey)	
1	Engineering Colleges	90		Degree	8740
				P.G	548
				Total	9288
2	Polytechnics	58		5502	
3	MBA	41		550	
4	Pharmacy	Diploma	23	Diploma	792
		Degree	28	Degree	60
		P.G	2	P.G	13
		Total	53	Total	865
5	HMCT	Diploma	2	Diploma	55
		Degree	4		
		Total	6	Total	55
	TOTAL	248		16260	

**UNIVERSITY EMPLOYMENT INFORMATION & GUIDANCE BUREAU.**

Joint Venture of Cochin University of Science and Technology & National Employment Department, Kerala State. From January 10, 1973.

1. Programmes of Study/Research

Vocational Guidance, Collection of Occupational Information, Organizing Refresher Courses / Training

2. Faculty Members

SI.No.	Name	Designation	Qualification	Specilisation
1.	Dr.M.Bhasi	Chief of the bureau & Reader, SMS, CUSAT.	M.Tech, MBA, PhD.	Operations Research

3. Visiting Faculty (If any)

SI.No.	Name	Designation	Qualification	Specilisation
1.	Dr.Ravi Divakaran	Professor	M.Sc Chemistry	Theoretical Chemistry
2.	Dr.P.Baburaj	Professor		
3.	Edwin Thomson	Lecturer	M.Sc Mathematics	Calculus
4.	Anandakrishnan	Professor (Retd)	M.Sc. Physics	Mechanic
5.	Dr.S.Sreekumar	Reader		Geology

4. Research Staff

SI.No.	Name	Designation	Qualification	Specilisation
--------	------	-------------	---------------	---------------

5. Research Scholars

SI.No.	Name	Funding Agency	Guide	Area of Work
--------	------	----------------	-------	--------------

6. Administrative Personnel

SI.No.	Designation	No. of Posts
1	Chief	1
2	Deputy Chief	1

7. Technical Personnel

SI.No.	Designation	No. of Posts
--------	-------------	--------------

8. Student Enrollment

SI.No.	Programme of Study	Men	Women	Total
--------	--------------------	-----	-------	-------

9. Research Facilities**a. Laboratories (List out Major equipments available)**



b. Library

No of books and Journals as on 31 st March of the Previous Year	Additions during the current year
859	54

c. Others

10. Distinguished visitors

Sl.No.	Name	Affiliation	Remarks
--------	------	-------------	---------

11. Ph.Ds Awarded

Sl.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
--------	-----------------	--------------------------	-------------------

12. Publications

a. Papers

Sl.No.	Name of Paper
--------	---------------

b. Books

Sl.No.	Name of Book
--------	--------------

13. Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.

Name of Participant	Name of Seminar / Conference/ Workshop	Role
M.K.Soya, Deputy Chief	One day Career Guidance Seminar	Participant

14. Awards/ Honours/ Fellowships etc. received

Name of Recipient	Name of Fellowship/ Honour /Award	Awarding Agency
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15. Sponsored Research Projects

Sl.No.	Title	Sponsoring Agency	Amount	Investigator(s)
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16. Research Programmes and Activities:

Sl.No.	Problem / Topic	Investigator (s)
--------	-----------------	------------------

17. Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department

Sl.No.	Title	Duration	Coordinator	Funding Agency
1.	UGC/CSIR Paper I Coaching	15 Day	U E I & G B	U E I & G B
2.	Bank Clerical Coaching	15 Day	U E I & G B	U E I & G B
3.	UGC/CSIR Paper I Coaching	15 Day	U E I & G B	U E I & G B
4.	UGC NET Paper I Coaching	15 Day	U E I & G B	U E I & G B
5.	Bank Clerical Coaching	15 Day	U E I & G B	U E I & G B

18. Consultancy Work

Sl. No.	Name of Consultancy	Name of Consultant	Sponsoring Agency
---------	---------------------	--------------------	-------------------

**UNIVERSITY LIBRARY**

Cochin University Library was established in 1975, with the objective to meet the information requirements of the academic community of the Cochin University of Science and Technology. It has built up a balanced and rich collection on all branches of Sciences and Technology. At the same time, books of general interest having high intellectual standard in various subject fields were not neglected. At present, the collection includes several valuable reference books, doctoral theses and back volumes of periodicals, patents, CD-ROM's, Online Journals etc.

1. Programmes of Study/Research**2. Faculty Members**

Sl.No.	Name	Designation	Qualification	Specialization
NIL				

3. Visiting Faculty (If any)

Sl.No.	Name	Designation	Qualification	Specilisation
NIL				

4. Research Staff

Sl.No.	Name	Designation	Qualification	Specilisation
NIL				

5. Research Scholars

Sl.No.	Name	Funding Agency	Guide	Area of Work
NIL				

6. Administrative Personnel

Sl.No.	Designation	No. of Posts
1	Section Officer	1
2	Assistant	2
3	Typist	2
4	Peon	4
5	Sweeper / Cleaner	2
6	Photocopier / duplicating operator	1

LIBRARY STAFF

1	University Librarian -in charge	1
2	Assistant Librarian (Sel.Gr.)	1
3	Assistant Librarian	6
4	Junior Librarian	2
5	Professional Assistant Gr.II	10



7. Technical/Professional Personnel

SI.No.	Designation	No. of Posts
1	Information Scientist	1

8. Student Enrollment

SI.No.	Programme of Study	Men	Women	Total
				3608

9. Research Facilities

a. Laboratories (List out Major equipments available)

b. Library

No of books and Journals as on 31 st March of the Previous Year		Additions during the current year	
a. Books	: 76611	a) Books	: 4711
b. Journals	: 176	b) Journals	: 5
c. Databases	: 5	c) Databases	: Nil

c. Others

10. Distinguished visitors

SI.No.	Name	Affiliation	Remarks
NIL			

11. Ph.Ds Awarded

SI.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
NIL			

12. Publications

a. Papers

SI.No.	Name of Paper
NIL	

b. Books

SI.No.	Name of Book
NIL	

13. Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.

Name of Participant	Name of Seminar / Conference/ Workshop	Role
Ms.Liny Varghese	National Workshop on Software Engineering, 2008	Organizing Team member



14. Awards/ Honours/ Fellowships etc. received

Name of Recipient	Name of Fellowship/ Honour /Award	Awarding Agency
NIL		

15. Sponsored Research Projects

SI.No.	Title	Sponsoring Agency	Amount	Investigator(s)
NIL				

16. Research Programmes and Activities:

SI.No.	Problem / Topic	Investigator (s)
NIL		

17. Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department

SI.No.	Title	Duration	Coordinator	Funding Agency
NIL				

18. Consultancy Work

SI. No.	Name of Consultancy	Name of Consultant	Sponsoring Agency
NIL			



INTERNATIONAL RELATIONS AND ACADEMIC ADMISSIONS

Annual Report of 2008-09

The notification for Academic Admissions 2009 was published in January 2009. An amount of Rs. 2.99 crores was received towards the cost of application/registration fee. The Common Admission Test 2009 was held on May 23rd and 24th at 26 Centres all over India in 76 venues and the results were announced in the first week of June. The centralized Counselling / admission for PG and UG courses started in the month of July. Admissions to the MCA programmes offered in ER & DC, Trivandrum and KVM College, Cherthala were also from CAT rank list.

Under the auspices of the Indian Council for Culture Relations, a corporate body under Ministry of External Affairs GOI, the International students Day was held at School of Management Studies Auditorium on 11th November 2008.

**ANNUAL ACCOUNTS****STATEMENT SHOWING THE RECEIPTS & EXPENDITURE FOR 2008-09**

Sl. No.	Items	Plan	Non-Plan	Total
	Opening fund balance as 01.04.2008	208,709,830	113,222,745	321,932,575
I.	RECEIPTS FOR 2008-09			
1	Internal Revenue (including fee receipts)		167,416,805	167,416,805
2	Grant from State Govt.	40,000,000	192,700,000	232,700,000
3	Grant from UGC	89,422,496		89,422,496
4	Grant from other GOI Sources	97,492,614		97,492,614
5	Grant from other Agencies	8,500,711		8,500,711
6	NSS Grant from State Govt.	713,000		713,000
7	Other grants from State Govt.	3,000,000		3,000,000
8	Scholarships/Prizes		150,624	150,624
9	Net Debt Head Receipts (Excluding PF)			
	Debt Head Receipts	50,794,457		
	(Less) Debt Head Expenditure	51,172,152		
	Net Debt Head Receipts (Excluding PF)		-377,695	-377,695
	Total Receipts for 2008-09	239,128,821	359,889,734	599,018,555
II.	EXPENDITURE FOR 2008-09			
10	Administrative Expenses			
a)	Salaries and other allowances		58,173,027	58,173,027
b)	Other revenue expenses	3,207,414	111,029,332	114,236,746
11	Examination Expenses			
a)	Salaries and other allowances		43,597,294	43,597,294
b)	Other revenue expenses	180,404	4,580,877	4,761,281
12	Academic Expenses			
a)	Salaries and other allowances	1,993,589	141,622,744	143,616,333
b)	Other revenue expenses	3,234,809	8,435,024	11,669,833



CUSAT Annual Report 2008-2009

Sl. No.	Items	Plan	Non-Plan	Total
13	Other Auxiliary Expenses			
a)	Salaries and other allowances	968,741	22,159,342	23,128,083
b)	Other revenue expenses	5,885,270	24,259,951	30,145,221
14	Capital Expenses			
a)	Vehicles			
b)	Computer & other Expenses	16,212,009		16,212,009
c)	Furniture	675,953		675,953
d)	Books & Journals	14,564,083		14,564,083
e)	Works	23,291,479	486,390	15,050,473
15	State Govt. Kerala Schemes	400,043		400,043
16	UGC-Bulk Grants & Schemes	20,522,272		20,522,272
17	Other GOI Sources	54,781,665		54,781,665
18	Scholarships/Fellowships/Prizes	23940315	7497387	31,437,702
19	Others (Bulk Grants & Schemes)	5,329,066		5,329,066
	Total Expenditure for 2008-09	175,187,112	421,841,368	597,028,480
	Closing fund balance as on 31.03.2009	272,651,539	51,271,111	323,922,650
	PF receipts for 2008-09	83,403,057		
	PF expenditure for 2008-09	69,075,222		

Non plan fund balance also includes endowments.



ACADEMIC PROGRAMMES

Programme Name and Duration	Eligibility Criteria for Admission	Nature of Programme	Intake
COCHIN UNIVERSITY COLLEGE OF ENGINEERING, KUTTANAD			
B.Tech Civil Engg. (8 Semesters)	Pass in the Plus Two Examination of the State of Kerala with Mathematics, Physics and Chemistry as optional subjects or any other examination accepted as equivalent thereto securing a minimum of 50% marks in Mathematics and 50% marks in Mathematics, Physics and Chemistry put together.	Full-time (Self-financing)	40
B.Tech. Computer Sci. & Engg. (8 Semesters)		Full-time (Self-financing)	60
B. Tech. Electrical & Electronics Engg. (8 Semesters)		Full-time (Self-financing)	60
B.Tech. Electronics & Comm. Engg. (8 Semesters)		Full-time (Self-financing)	60
B. Tech. Information Technology (8 Semesters)		Full-time (Self-financing)	60
B.Tech. Mechanical Engg. (8 Semesters)		Full-time (Self-financing)	60
M.C.A. (6 Semesters)	Any graduate with Mathematics as one of the main or subsidiary subjects or graduate in Electronics / Computer Science / Computer Applications / Engineering / Technology with aggregate 55% marks in all subjects other than languages and humanities.	Full-time (Cost-sharing)	



Programme Name and Duration	Eligibility Criteria for Admission	Nature of Programme	Intake
SCHOOL OF ENGINEERING, THRIKKAKARA			
5 year Integrated M.Sc., Software Engg. (10 Semesters) (No admission in the current year)		Full-time (Self-financing)	40
B. Tech. Civil Engg. (8 Semesters)	Pass in Plus Two examination of the State of Kerala with Mathematics, Physics and Chemistry as optional subjects or any other examination accepted as equivalent thereto securing a minimum of 50% marks in Mathematics and 50% marks in Mathematics, Physics and Chemistry put together.	Full-time (Self-financing)	90
B. Tech. Computer Sci. & Engg. (8 Semesters)		Full-time (Self-financing)	90
B. Tech. Electrical & Electronics Engg. (8 Semesters)		Full-time (Self-financing)	60
B. Tech. Electronics & Commn. Engg. (8 Semesters)		Full-time (Self-financing)	90
B. Tech. Information Tech. (8 Semesters)		Full-time (Self-financing)	90
B. Tech. Mechanical Engg. (8 Semesters)		Full-time (Self-financing)	90
B. Tech. Safety & Fire Engg. (8 Semesters)		Full-time (Self-financing)	30
B. Tech. Marine Engg. (Residential Programme) (8 Semesters)*	Pass in the Plus Two Examination of the State of Kerala with Mathematics, Physics and Chemistry as optional subjects or any other Examination accepted as equivalent thereto securing a minimum of 50% marks in Mathematics and 50% marks in Mathematics, Physics and Chemistry	Full-time (Self-financing)	30

* One semester will be afloat training with a fee of Rs. 50,000/-



M. Tech. Civil Engg. (5 Semesters) (No admission in the current year)	B.Tech / B.Sc. (Engg.) or equivalent degree in the respective branch (candidates who have taken GRADE/IETE/AMIE Chem. Engg. Or AMII with a pass in section A & B are also eligible for admission). (a) Should have a basic degree in Science or Diploma in Engg. Such candidates shall be required to undergo a make-up course in laboratory work before being admitted to the M.Tech Degree. This shall consist of two practical courses & only those candidates who secure not less than 50% marks in the examination conducted by the department for each of the two practical courses shall be eligible for the M.Tech. Programmes. (b) Should have two years experience after obtaining the basic degree. GRADE/IETE/AMII/AMIE Chem. Engg. should have seven years experience. (c) Open seats will be allotted on the basis of GATE Score and marks obtained in the qualifying examination.	Part-time (Cost sharing)	15
M. Tech Chem. Engg. (5 Semesters) (No admission in the current year)		Part-time (Cost-sharing)	15
M. Tech Mechanical Engg. (5 Semesters)		Part-time (Cost-sharing)	15
P.G. Diploma in Coir Technology (2 Semesters) (No admission in the current year)	A pass in B.Sc., Degree with Physics or Chemistry as main with a minimum of 50% marks. The eligibility for SEBC candidates is 45% and pass for SC / ST.	Full-time (Cost-sharing)	20
M.E. by Research (5 Semesters) (Admission only for Civil, Chemical, Mechanical and Electronics Engg.)	Bachelor's Degree in appropriate branch of engineering from a recognized university with 60% marks in the qualifying examination. Candidates belonging to SC/ST communities shall be eligible for concession upto 5% in the minimum marks. Candidates shall have passed the Departmental Admission Test conducted by the School with 50% marks. Admission shall be based on the marks in the qualifying examination, Departmental Admission Test, interview and experience. Application for admission shall be submitted along with the consent of the Supervising Guide.	Part-time (Cost-sharing)	Variable
M.E. by Research (4 Semesters)		Full-time (Cost-sharing)	''
Ph.D			



Note: The minimum eligibility for socially and educationally backward community candidates for admission to Programmes noted at Serial Numbers 1-8 and 11-15 is 45% for Mathematics and 45% for Mathematics, Physics and Chemistry put together in the qualifying examination. 50% of the total seats for B.Tech. (after excluding the 10% reservation of N.R.I.) are free seats. Candidates under SEBC category, whose family income is more than Rs. 2,50,000/- are not eligible for free seats under the respective community quota. Seats reserved under Sports quota will come under payment seats of B.Tech Programmes. 50% concession in fees will be granted to Physically Handicapped candidates admitted against the seats reserved for Physically Handicapped to the payment seats of B.Tech. Programmes, however they are not exempted from payment of refundable deposit of Rs. 1,00,000/-. Fees for the entire programme will be charged from students leaving the B.Tech. Programmes midway.

Programme Name and Duration	Eligibility Criteria for Admission	Nature of Programme	Intake
SCHOOL OF ENVIRONMENTAL STUDIES			
M.Sc. Environmental Tech. Stream 1. Env. Engg. (4 Semesters)	Graduate in Chemistry with Physics and Mathematics as subsidiaries or graduate in Engg. (Civil / Public Health / Environmental or Chemical) with 55% marks.	Regular-Day	6
Stream 2. Env. Biotech, (4 Semesters) Ph.D.	Graduates in Life Sciences/ Environmental Sciences/Zoology/ Botany/ Microbiology with 55% marks.	Regular-Day	6
DEPARTMENT OF CULTURE AND HERITAGE			
Certificate Programmes in French/German/Japanese/Russian (1 year)	Pass in Plus Two or equivalent. Previous knowledge of the language is not essential.	Part-time	25
Diploma in Communicative English (1 year)	Bachelor's Degree in any discipline or any other examination recognized as equivalent thereto with English as one of the subjects of study from a University.	Part-time	25
Diploma Programmes in French/German/Japanese / Russian (1 year)	Pass in Plus Two or equivalent and Certificate level knowledge in the language concerned.	Part-time	10
Diploma in Functional Arabic (1 year)	Pass in Plus Two or equivalent. Previous knowledge in the language is not essential.	Part-time	20
Integrated Diploma in French/German/Japanese / Russian (1 year)	Pass in Plus Two or equivalent. Previous knowledge in the language concerned is not essential.	Part-time	20
M.A. Translation–German / Russian (4 Semesters) Ph. D.	Bachelor's Degree of any University recognized by CUSAT & Diploma level knowledge in the language concerned.	Full-time	5



Programme Name and Duration	Eligibility Criteria for Admission	Nature of Programme	Intake
DEPARTMENT OF HINDI			
M.A. Hindi Language and Literature (4 Semesters)	B.A. / B.Sc. Degree Hindi as a subject of study with atleast 45% marks in Hindi.	Regular-Day	28
M.Phil. Hindi (2 Semesters)	Master's Degree in Hindi with atleast 50% marks.	Regular-Day	10
P.G. Diploma in Translation, Functional Hindi (1 year)	Bachelor's Degree with Hindi as one of the Subjects.	Part-time	28
Ph.D.			
SCHOOL OF LEGAL STUDIES			
L.L.B. (6 Semesters)	Bachelor's Degree in any discipline with 40% marks of the total marks of the qualifying degree.	Regular-Day (Cost-sharing)	60
L.L.M. (4 Semesters)	Bachelor's Degree in Law with atleast 45% marks.	Regular-Day	36
Ph.D.			
SCHOOL OF MARINE SCIENCES			
P.G.Diploma in Coastal Zone Management (4 Semesters)	Bachelor's degree in Engineering/ Masters degree in science from CUSAT or any other university by the CUSAT with atleast 55% marks.	Regular-Day	16



Programme Name and Duration	Eligibility Criteria for Admission	Nature of Programme	Intake
SCHOOL OF INDUSTRIAL FISHERIES			
M.Sc., Industrial Fisheries (4 Semesters) Ph.D.	Bachelor's Degree with Zoology, Botany, Chemistry or Fisheries main, with Zoology & Botany as subsidiaries with atleast 55% marks in the optional subjects. Bachelor's Degree in Fisheries includes Bachelor's Degree in Industrial Fisheries in Aquaculture and in Fishery Science.	Regular-Day	16
DEPARTMENT OF ATMOSPHERIC SCIENCES			
M.Sc. Meterology (4 Semesters) M.Tech. Atmospheric Science (4 Semesters) Ph.D.	B.Sc. Degree with Physics/Mathematics as the main subject with 55% marks. Those with Mathematics as the main subject should have studied Physics as one of the subsidiaries and vice-versa. i) M.Sc. Degree or its equivalent in Meteorology, Ocean-ography, Mathematics/ Physics/Space Physics with a first class (60%) marks from any recognized University or Institution. ii) A valid GATE score or pass in the joint UGC - CSIR test (NET) for JRF	Regular-Day Regular-Day	12 10
DEPARTMENT OF CHEMICAL OCEANOGRAPHY			
M.Sc. Hydrochemistry (4 Semesters) M.Phil. Chemical Oceanography (2 Semesters) Ph.D.	B.Sc. Degree in Chemistry with Mathematics and Physics as subsidiaries or B.Sc. Degree of any University in Kerala with Polymer Chemistry / Industrial Chemistry /Petrochemicals /Environment and Water Management as the main subject and Mathematics and Physics / Computer Science as Subsidiaries, with a minimum of 55% marks in the respective main subject. Masters Degree in Chemistry with 50% marks.	Regular-Day Regular-Day	12 6



Programme Name and Duration	Eligibility Criteria for Admission	Nature of Programme	Intake
DEPARTMENT OF MARINE BIOLOGY, MICROBIOLOGY & BIOCHEMISTRY			
M.Sc., Marine Biology (4 Semesters)	B.Sc. Degree with any branch of Life Sciences such as Aqua culture, Biochemistry, Biotechnology, Botany, Microbiology, Zoology etc. as a main subject or B.Sc. degree in Fishery Science with atleast 55% marks in the optional subjects.	Regular-Day	19
M.Phil. Life Science (2 Semesters)	Master's Degree in Marine Biology / Zoology / any branch of Life Science such as Aquatic Biology and Fisheries, Biochemistry, Biotechnology, Botany, Fishery Science with 60% marks.	Regular-Day	6
Ph.D.			
DEPARTMENT OF MARINE GEOLOGY AND GEOPHYSICS			
M.Sc. Marine Geology (4 Semesters)	Bachelor's Degree in Geology with atleast 55% aggregate marks in optionals. (i) B.Sc. Degree with atleast 55% aggregate marks with (a) Geology main with Mathematics and Physics or Chemistry as subsidiaries; (b) Physics main with Mathematics and Geology or Chemistry or Electronics as subsidiaries; (c) Mathematics main with Physics and Geology or Chemistry as subsidiaries. (ii) Should not have completed 22 years of age on 1 st October of the year of admission except in the case of SC / ST candidates.	Regular-Day	10
M.Sc. Marine Geophysics (2 years)		Regular-Day	10
Ph.D.			
DEPARTMENT OF PHYSICAL OCEANOGRAPHY			
M.Sc. Oceanography (4 Semesters)	B.Sc. Degree with Physics/Mathematics main with 55% marks. Those with Mathematics as the main subject should have studied Physics as one of the subsidiaries and vice-versa. (i) M.Sc. Degree in Oceanography / Physics/ Marine Geology/Meteorology/Marine Geophysics/Environmental Sciences or M.Sc (Tech.) Degree in Marine Geophysics or B.Tech or equivalent degree/AMIE in Civil Engineering/Environmental Sciences with 60% marks from any recognized University or Institution. (ii) A valid GATE score with any of the subjects mentioned above as the second paper.	Regular-Day	12
M.Tech. Ocean Technology (4 Semesters)		Regular-Day	8
Ph.D.			



Programme Name and Duration	Eligibility Criteria for Admission	Nature of Programme	Intake
DEPARTMENT OF APPLIED CHEMISTRY			
M.Sc. Applied Chemistry (4 Semesters)	B.Sc. Degree with Chemistry / Polymer Chemistry / Environmental Chemistry / Industrial Chemistry / Petrochemicals (main) with Mathematics as one of the subsidiary subjects with atleast 55% marks in the main subject.	Regular-Day	12
M.Phil. Chemistry (2 Semesters)	M.Sc. Degree in Chemistry with atleast 50% marks.	Regular-Day	9
M.Tech Industrial Catalysis (4 Semesters)	M.Sc. Degree in (Chemistry / Applied Chemistry) or any other degree recognized as equivalent with at least first class (60%) mark from any recognised University or Institution with a valid GATE score.	Regular-Day	10
Ph.D.			
DEPARTMENT OF BIOTECHNOLOGY			
M.Sc. Biotechnology (4 Semesters)	Bachelor's Degree in any branch of Life Sciences including Agricultural and Medical Sciences / Chemical Sciences / Chemical Engineering with minimum of 55% marks in aggregate.	Regular-Day	10
Ph.D.			
DEPARTMENT OF MATHEMATICS			
M.Sc., Mathematics (4 Semesters)	B.Sc. Degree with Mathematics main with atleast 55% marks for optional subjects taken together.	Regular-Day	20
M.Sc. (Operations Res. & Computer Applns.) (4 Semesters)	B.Sc. Degree in Mathematics or Physics or Statistics with Mathematics as subsidiary with not less than 55% marks in the main or subsidiary subjects or B.Sc. Engineering with atleast 55% marks.	Regular-Day	15
Ph.D.			



Programme Name and Duration	Eligibility Criteria for Admission	Nature of Programme	Intake
DEPARTMENT OF PHYSICS			
M.Sc. Physics (4 Semesters)	B.Sc. Degree with Physics main and Mathematics subsidiary with atleast 55% marks in Physics.	Regular-Day	25
M.Phil. Physics (2 Semesters)	M.Sc. Degree in Physics with atleast 50% marks.	Regular-Day	8
Ph.D.			
DEPARTMENT OF STATISTICS			
M.Sc. Statistics (4 Semesters)	B.Sc. Degree in Mathematics or Statistics main with atleast 55% marks for optional subjects taken together.	Regular-Day	15
M.Tech. Engineering Statistics (4 Semesters) (No admission in the current year)	B.Tech. or equivalent degree or AMIE in discipline with a first class (60%) from any recognised University or Institution with valid GATE score.	Regular-Day	8
Ph.D.			
DEPARTMENT OF APPLIED ECONOMICS			
M.Phil. Applied Economics (2 Semesters)	Master's Degree in Economics with atleast 50% aggregate marks.	Regular-Day	10
M.B.E. Master of Business Economics) (4 Semesters)	Bachelor's Degree or Equivalent in any subject including Engineering, Technology, Agriculture and Medicine of the Universities in Kerala or any other Universities in India or abroad (accepted by the University as equivalent thereto) with a minimum of 55% aggregate marks.	Regular-Day	15
Ph.D.			



Programme Name and Duration	Eligibility Criteria for Admission	Nature of Programme	Intake
SCHOOL OF MANAGEMENT STUDIES			
M.B.A (Full-time) (4 Semesters)	Bachelor's Degree in any subject with 50% marks in aggregate.	Regular-Day	50
M.B.A. (Part-time) (6 Semesters)	(i) Bachelor's Degree in any subject with 50% marks in aggregate. (ii) 50% of the seats are reserved for candidates having 3 years of supervisory / executive experience after taking the degree. (iii) In the absence of such candidates as mentioned in (ii) vacancies will be offered to any other candidates satisfying eligibility as per (i).	Part-time (Evening)	30
M.I.B. (Master of International Business) (4 Semesters)	Bachelor's Degree in any discipline recognized by the University with 50% marks in aggregate.	Regular-Day	30
M.Phil. (Commerce) (2 Semesters)	Master's Degree in Commerce with atleast 50% marks.	Regular-Day	6
Ph.D.			
CENTRE OF EXCELLENCE IN LASER AND OPTOELECTRONIC SCIENCES			
5 years integrated M.Sc. in Photonics (10 Semesters)	Pass in + 2 examination of the State of Kerala with Mathematics, Physics and Chemistry as optional subjects or any other examination accepted as equivalent there to securing a minimum of 50% marks in Mathematics and 50% marks in Mathematics, Physics and Chemistry put together.*	Full Time	20
DEPARTMENT OF ELECTRONICS			
M.Tech Electronics (with specialization in Digital Electronics, Microwave & Radar Electronics) (4 Semesters)	i) B.Tech or equivalent degree/AIME/AMIETE in Electronics and Communication Engineering/Electrical Engineering/Electronics and Instrumentation or M.Sc. Degree in Electronics/Physics (with Electronics as specialization) with a First Class (60%) marks from any recognized University or Institution. ii) A valid GATE score in Electronics	Regular-Day	20

* The minimum eligibility for SCBC is 45% for Mathematics and 45% Mathematics, Physics and Chemistry put together



Programme Name and Duration	Eligibility Criteria for Admission	Nature of Programme	Intake
M.Sc. Electronic Science (with specialization in Artificial Intelligence, Robotic Microwave Electronics & Computer Technology) (4 Semesters) Ph.D.	<p>/ Electronic and Communication Engg.</p> <p>iii) If sufficient number of candidates are not available in category (ii) above, candidates with GATE score in instrumentation, Electronics Engg., Electrical Engg. or Physics will be considered. (Sponsored and Sc/ST candidates may have relaxation to this requirement, but they have to appear for DAT).</p> <p>i) First Class B.Sc. / B.Sc. (Hons.) Degree with not less than 60% aggregate marks in Electronics, Computer Science or Physics (with Electronics).</p> <p>ii) SC/ST candidates need only have pass minimum for the qualifying degree. Candidates with higher degrees are not eligible for admission.</p>	Regular-Day	25
DEPARTMENT OF INSTRUMENTATION			
B.Tech Instrumentation* (8 Semesters) Ph.D.	Pass in Plus Two examination of the State of Kerala with Mathematics, Physics and Chemistry as optional subjects or any other examination accepted as equivalent thereto securing a minimum of 60% marks in Mathematics, Physics and Chemistry put together with atleast 55% in Mathematics separately.	Regular-Day	28
DEPARTMENT OF POLYMER SCIENCE & RUBBER TECHNOLOGY			
B.Tech Polymer Science & Rubber Technology (8 Semesters)	Pass in Plus Two examination of the State of Kerala with Mathematics, Physics and Chemistry as optional subjects or any other examination accepted as equivalent thereto securing a minimum of 50% marks in Mathematics and 50% marks in Mathematics, Physics and Chemistry put together.	Regular-Day	20

* The minimum eligibility for SEBC is 55% for Mathematics, Physics and Chemistry put together with atleast 50% for Mathematics and the minimum eligibility for SC/ST is 50% for Mathematics, Physics and Chemistry put together with atleast 45% for Mathematics.



Programme Name and Duration	Eligibility Criteria for Admission	Nature of Programme	Intake
M.Tech. Polymer Technology (4 Semesters)	i) B.Tech equivalent degree/AMIE in Polymer Science and Rubber Technology / Chemical Engg./ Technology / M.Sc. Polymer Chemistry / M.Sc. Chemistry with polymer Chemistry specialization with a first class (60%) marks from recognized University or Institution. ii) A valid GATE score.	Regular-Day	10
Ph.D.			
DEPARTMENT OF SHIP TECHNOLOGY			
B.Tech. Naval Arch. & Ship Building (8 Semesters)	Should have passed Plus Two (10+2) / Pre-Degree examination conducted in Kerala in First Class or the examination of any other University / Board accepted by the Syndicate of the University as equivalent thereto with Mathematics, Physics and Chemistry as subjects of study. The candidate shall have secured a minimum of 50% marks in Mathematics as well as for Mathematics, Physics & Chemistry put together.	Regular-Day	24
M.Tech. Comp. Aided Structural Analysis & Design (4 Semesters)	i) B. Tech. or equivalent degree in Naval Architecture and Ship Building / Civil Engineering / Mechanical Engineering with a first class (60%) marks from any recognized University or Institution. ii) A valid GATE score.	Cost-Sharing	15
Ph.D.			

**Exam Results**

Sl.No	Name of the College	No. of Candidates Registered	No. of Candidates Appeared	First Class with Distinction	First Class	Second Class	Total No. of Candidates Passed	Pass Percentage
1	School of Engineering, Cochin	597	597	98	189	0	287	48.07
2	Cochin University College of Engineering	326	326	31	72	0	103	31.60
3	College of Engineering, Chengannur	194	194	36	85	0	121	62.37
4	Model Engineering College, Cochin	240	240	89	73	0	162	67.50
5	College of Engineering, Adoor	258	258	22	80	0	102	39.53
6	College of Engineering, Kalllooppara	173	173	18	65	0	83	47.98
7	College of Engineering, Poonjar	128	128	11	45	0	56	43.75
8	College of Engineering, Kidangoor	254	254	25	73	0	98	38.58
9	College of Engineering, Perumon	303	303	44	99	0	143	47.19
10	College of Engineering, Karunagapally	98	98	10	25	1	36	36.73
11	College of Engineering, Trikaripur	196	196	26	71	0	97	49.49
12	College of Engineering, Thalassery	320	320	16	79	0	95	29.69
13	Co-operative Institute of Technology, Vadakara	244	244	12	36	0	48	19.67
14	College of Engineering, Munnar	189	189	17	51	0	68	35.98
15	Toc H 276	276	25	95	0	120	43.48	
16	Tkm Institute of Technology	155	155	14	25	0	39	25.16



Sl.No	Name of the College	No. of Candidates Registered	No. of Candidates Appeared	First Class with Distinction	First Class	Second Class	Total No. of Candidates Passed	Pass Percentage
17	College of Engineering - Attingal	120	120	13	33	0	46	38.33
18	Sarabhai Institute of Science and Technology	205	205	7	27	0	34	16.59
19	College of Engineering - Cherthala	129	129	13	50	0	63	48.84
20	College of Engineering - Kottarakara	121	121	5	29	0	34	28.10
21	M.G. College of Engineering	163	163	5	26	0	31	19.02
22	Dept. of Polymer Science & Rubber Technology	21	21	2	9	0	11	52.38
23	Dept. of Instrumentation	28	28	0	18	0	18	64.29
24	Dept. of Ship Technology (NA&SB)	39	39	5	16	0	21	53.85
Total		4777	4777	544	1371	1	1916	40.11



P.G and other courses (Final Semester) Examination results for the year 2008-2009

Name of Course	Date of Publication of Results	No. of Candidates Registered	No. of Candidates Appeared	First Class With Distinction	First Class	Second Class	% Passed
M.Sc.-Applied Chemistry	6.6.2009	9	9	3	5		88.9
MBE	6.6.2009	13	13	2	11		100
MBA	24.10.2009	51	51	1	47		94
M.Sc. Bio Technology	6.6.2009	42	42	26	12		90.47
M.Sc. Hydrochemistry	6.6.2009	12	12	10	1		91.6
MCA	6.6.2009	223	223	49	110		71.3
M.Sc. Electronics	6.6.2009	23	23	11	10		91.3
M.A. Hindi Language & Literature	6.6.2009	25	25	7	16		92
MSc. Marine Geology	6.6.2009	5	5	1	4		100
M.Sc. Marine Geophysics	6.6.2009	8	8	3	3		75
M.Sc. Photonics	6.6.2009	20	20	1	10	1	60
LL.M	6.6.2009	36	36		23	3	85.71
L.L.B.	13.8.2009	15	15			14	93.33
M.Sc. Physics	6.6.2009	25	22	6	15	1	88
M.Sc. Oceanography	6.6.2009	10	10	3	6		90
M.Sc. Statistics	6.6.2009	20	20	4	12	1	85
M.Sc. Mathematics	5.6.2009	25	25	7	17	1	100
M.Sc. Marine Biology	5.6.2009	15	15	7	8		100
M.Sc. Meteorology	29.7.2009	13	13		11		84.61
M.Sc. Industrial Fisheries	17.11.2009	19	19	1	18		100



Name of Course	Date of Publication of Results	No. of Candidates Registered	No. of Candidates Appeared	First Class With Distinction	First Class	Second Class	% Passed
M.Sc. Environmental Technology	8.7.2009	12	12	7	5		100
M.Tech-VLSI & Embedded System	20.5.2009	18	18	11	7		100
M.Tech - CASAD	2.7.2009	16	16	3	13		100
M.Tech - Polymer Technology	30.5.2009	10	9	4	5		90
M.Tech Atmospheric Science	27.8.2009	5	5	1	4		100
M.Tech Industrial Catalysis	29.6.2009	6	6	4	2		100
M.Tech Electronics	19.2.2009	23	23	22	1		100
M.Tech Computer and Information Science	25.6.2009	20	20	15	4	1	100
M.Tech Software Engineering	25.6.2009	17	17	11	6		100
M.Tech - Opto Electronics & Laser Technology	9.7.2009	9	9	6	3		100



DETAILS OF PH.D DEGREE AWARDEES FROM 01.04.2008 TO 31.03.2009

Faculty of Technology

Sl. No.	Name of the Candidate & Title of the Thesis	Department/Centre of Research	Name & Designation of the Guides
1	Dr. K.S. Maya "Studies on in Site Precipitated Silica filled rubber Composites with Special Reference to NR, NBR and SBR".	Department of Polymer Science and Rubber Technology, CUSAT, Kochi - 22.	Dr. Rani Joseph Professor, Department of Polymer Science and Rubber Technology, CUSAT, Kochi - 22.
2	Dr. Aswathy K.V. "Nano - Zinc Oxide A Novel Modifier For Thermoplastics".	Department of Polymer Science and Rubber Technology, CUSAT, Kochi - 22.	Dr. Rani Joseph Professor Department of Polymer Science and Rubber Technology, CUSAT, Kochi - 22.
3	Dr. Supriya M.H "Realisation of largest classified For Noise Source in the Ocean".	Department of Electronics CUSAT, Kochi -22.	Dr. P.R. Saseendran Pillai Professor, Department of Electronics CUSAT, Kochi -22.
4	Dr. Joshy M.K. "Some Fibre Reinforced Polyester and Epoxy Composites".	Department of Polymer Science and Rubber Technology, CUSAT, Kochi - 22.	Dr. Rani Joseph Professor, Department of Polymer Science and Rubber Technology, CUSAT, Kochi - 22.
5	Dr. Priya Viswanath "Development of Polymer Cement Composites."	Department of Polymer Science and Rubber Technology, CUSAT, Kochi - 22.	Dr. Eby Thomas Thachil Reader, Department of Polymer Science and Rubber Technology CUSAT, Kochi - 22.



Sl. No.	Name of the Candidate & Title of the Thesis	Department/Centre of Research	Name & Designation of the Guides
6	Dr. Prema K.H. "Magnetic, Dielectric and Physico, Mechanical Properties of Rubber Ferrite Babocomposites".	Department of Polymer Science and Rubber Technology, CUSAT, Kochi - 22.	Dr. Philip Kurian Professor Department of Polymer Science and Technology CUSAT, Kochi -22.
7	Dr. Srinivasan P.V. "Compatibilisation of Powdered Nitrile Rubber Toughened Polystyrene".	Department of Polymer Science and Rubber Technology, CUSAT, Kochi - 22.	Dr. Philip Kurian Professor Department of Polymer Science and Technology CUSAT, Kochi -22.
8	Dr. Lakshmi K "Development of Thermoplastic conducting polymer composites Based on Polyaniline and Polythiophenes for Microwaves and Electrical Application".	Department of Polymer Science and Rubber Technology, CUSAT, Kochi - 22.	Dr. K.E. George Professor Department of Polymer Science and Rubber Technology CUSAT, Kochi - 22.
9	Dr. Litty Mathew Irimpen "Spectral And Non Linear Optical Characterization of Zn O Nanocompossites"	International School of Photonics CUSAT, Kochi -22.	Dr. P. Radhakrishnan Professor International School of Photonics CUSAT, Kochi -22.
10	Dr. Ansu Jacob "Rubber Layered Clay Nanocomposites".	Department of Polymer Science and Rubber Technology, CUSAT, Kochi - 22.	Dr. Philip Kurian Professor Department of Polymer Science and Technology CUSAT, Kochi -22.
11	Dr. Srinivasan A "Influence of Si, Sb and Sr Additions on the Microstructures, Mechanical Properties and Carosion. Behaviour of AZ 91 Magnesium Alloy".	National Institute for Interdisciplinary Science and Technology Trivandrum - 19.	Dr. U.T.S. Pillai Scientist National Institute for Interdisciplinary Science and Technology Trivandrum - 19.



Sl. No.	Name of the Candidate & Title of the Thesis	Department/Centre of Research	Name & Designation of the Guides
12	Dr. Praveen Kumar A.V. "Development of a Novel wideband cylindrical Dielectric Resonator Antenna".	Department of Electronics CUSAT, Kochi - 22.	Dr. K.T. Mathew Professor Department of Electronics CUSAT, Kochi - 22.
13	Dr. Manjusha M.V. "Thermal Transport Properties of Selected Ferroelectrics, Mixed valence Perovskites And Dielectric Ceramics Photopyroelectric Technologies".	Department of Instrumentation CUSAT, Kochi - 22.	Dr. Jacob Philip Director STIC CUSAT, Kochi - 22.
14	Dr. Mary Alexander "Applications of Cardanol in Rubber Processing".	Department of Polymer Science and Rubber Technology, CUSAT, Kochi - 22.	Dr. Eby Thomas Thachil Reader Department of Polymer Science and Rubber Technology CUSAT, Kochi - 22.
15	Dr. Dineesh Kumar V.P. "Development of Shape Descriptors Based on Legendre Polynomials and content Based Retrieval of Scoliosis Images".	Department of Electronics CUSAT, Kochi - 22.	Dr. Thresiamma Thomas Reader Department of Electronics CUSAT, Kochi - 22.
16	Dr. Suma M.N. "Investigations on Broad Band Plasma Monopole Antennas with Truncated Ground Plane".	Department of Electronics CUSAT, Kochi - 22.	Dr. P. Mohanan Professor Department of Electronics CUSAT, Kochi - 22.
17	Dr. Francis A.T. "Re-Engineering and Re-defining University Libraries in the context of Modern Information and communication Technologies".	Department of Computer Applications CUSAT, Kochi - 22.	Dr. Humayoon Kabir S Department of Computer Applications CUSAT, Kochi - 22.
18	Dr. Sweety Issac "Internal Utilization and Academic Activities of Faculty Members in the Universities of Kerala: An Analytical Study".	Department of Computer Applications CUSAT, Kochi - 22.	Dr. Humayoon Kabir S Department of Computer Applications CUSAT, Kochi - 22.



Sl. No.	Name of the Candidate & Title of the Thesis	Department/Centre of Research	Name & Designation of the Guides
19.	Dr. Saritha Chandran A "Polyaniline Coated Shorted Short Nylon Fibre Elastoiners Composites: Electrical And Microwave Characterisation".	Polyaniline Coated Short Nylon Fibre Elastoiners Composites: Electrical And Microwave Characterisation.	Dr. Sunil K Narayanan Kutty Reader Department of PS & RT CUSAT, Kochi - 22.
Faculty of Science			
20	Dr. Madhu K.M. "Extracellular B-glucosidase Production By Marine Aspergillus Sydowii BT MFS 55".	Department of Biotechnology CUSAT, Kochi - 22.	Dr. M. Chandrasekharan Professor Department of Biotechnology CUSAT, Kochi - 22.
21	Dr. Baiju K.V. "Aqueous Sol-Gel Process Nanocrystalline Photocatalytic Titanium Transparent functioned Coating and Ceramic Membrane".	National Institute of Interdisciplinary Science and Technology Trivandrum -19.	Dr. K.G.K. Warriar Deputy Director NIIST Trivandrum - 19.
22	Dr. Remya P.N. "Vanadophelic Heterocyclic B-Diketones Synthesis, Characterization and Complexation".	National Institute of Interdisciplinary Science and Technology Trivandrum - 19.	Dr. M.L.P. Reddy Scientist NIIST Trivandrum - 19.
23	Dr. Maya S.S. "Some Properties of Weighted distributions for Truncaled Random Variables".	Department of Statistics CUSAT, Kochi - 22.	Dr. S.M. Sunoj Lecturer Department of Statistics CUSAT, Kochi - 22.
24	Dr. Manujusha S "Studies on Isolation and Molecular characterization of Plasmeds from vibrios".	Department of Biotechnology CUSAT, Kochi - 22	Dr. Sarita G Bhat Lecturer Department of Biotechnology CUSAT, Kochi - 22



Sl. No.	Name of the Candidate & Title of the Thesis	Department/Centre of Research	Name & Designation of the Guides
25	Dr. Roshini K Thumpakara "2 (3M) - Funanones And Related Substrates synthesis Strategies and Selectivity Profile in their Reactivity".	Department of Applied Chemistry CUSAT, Kochi - 22.	Dr. S. Prathapan Reader Department of Applied Chemistry CUSAT, Kochi -22.
26	Dr. Savitha Balakrishnan "Muscarinic M ₁ and M ₃ Receptors IP ₃ and c GMP functional Regulation ion Streptozotocin Induced Diabetic Rats Insulin and Somatotropin Induced Rejuvenation as Function of Age".	Department of Biotechnology CUSAT, Kochi - 22	Dr. C.S. Paulose Professor Department of Biotechnology CUSAT, Kochi - 22.
27	Dr. Sareena John "Fabrication of Electrochemical Sensors for Pharmaceutical analysis"	Department of Applied Chemistry CUSAT, Kochi -22.	Dr. K. Girish Kumar Reader Department of Applied Chemistry, CUSAT, Kochi -22.
28	Dr. Lailaja V.P. "Alkaline Lipase Production By Marine Bacillus Smithi BTMS".	Department of Biotechnology CUSAT, Kochi - 22	Dr. M. Chandrasekharan Professor Department of Biotechnology CUSAT, Kochi - 22
29	Dr. Haritha N Haridas "Income Modelling using Quantity Functions".	Department of Statistics CUSAT, Kochi - 22.	Dr. K.R. Muraleedharan Professor Department of Statistics CUSAT, Kochi - 22.
30	Dr. Manoj E "Self Assembled Transition Metal Co-ordination Framecoats of Carbohydrazone And Biocarbohydrazone Ligand: Structural Spectral Masnelie Aanticancer Properties".	Department of Applied Chemistry CUSAT, Kochi - 22	Dr. M.R. Prathapachandra Kurup Professor Department of Applied Chemistry, CUSAT, Kochi - 22.



Sl. No.	Name of the Candidate & Title of the Thesis	Department/Centre of Research	Name & Designation of the Guides
31	Dr. Rekha R Mallika "Studies on the Solvent Dependence in the Reaction of a Fero (Anthracene -S-YL) Methylamines And Sulfanes with Reactive Acety lines".	Department of Applied Chemistry CUSAT, Kochi - 22	Dr. S. Prathapan Reader Department of Applied Chemistry, CUSAT, Kochi - 22
32	Dr. Bloomy Joseph "A Study of closure and fuzzy Closure space with reference to H-closed new And Convexity".	Department of Mathematics CUSAT, Kochi - 22	Dr. T. Thrivikraman Professor Department of Mathematics CUSAT, Kochi - 22
33	Dr. Rahana Yoosuf "Optimization of Two slag process for the growth of In_2S_3 CuIn Se ₂ and CuIn (Sei-x Sx) ₂ Thin film for Solar Cell Applications".	Department of Physics CUSAT, Kochi - 22.	Dr. M.K. Jayaraj Reader Department of Physics CUSAT, Kochi - 22.
34	Dr. Ambily Mary Jacob "Synthesis and Photochemistry of a few Olefin Appended Dibenzzo harreleness and Bisdibenzo Barrelenes".	Department of Applied Chemistry CUSAT, Kochi - 22	Dr. S. Prathapan Reader Department of Applied Chemistry, CUSAT, Kochi - 22.
35	Dr. Subha P.A. "Studies on Spatial and Temporal solution with Varyins Dispersion Diffraction and Nonlinearety".	Department of Physics CUSAT, Kochi - 22	Dr. V.C. Kuriakose Professor Department of Physics CUSAT, Kochi -22.
36	Dr. A Sreekumar "Development of Solar Air Heatess and Thermal Energy Storage systems For dying Applications in Food Processing"	Department of Physics CUSAT, Kochi - 22	Dr. K.P. Vijayakumar Professor Department of Physics CUSAT, Kochi - 22
37	Dr. Jissa G Krishna "Pigment Production By Marine Serralia Sp BTWJS".	Department of Biotechnology CUSAT, Kochi - 22	Dr. M. Chandrasekharan Professor Department of Biotechnology CUSAT, Kochi - 22.



Sl. No.	Name of the Candidate & Title of the Thesis	Department/Centre of Research	Name & Designation of the Guides
38	Dr. Asha A.S. "RF Magnetron Sputtered Perovskite Oxide Electrodes for Ferroelectric RAM".	Department of Physics CUSAT, Kochi - 22.	Dr. M.K. Jayaraj Reader Department of Physics CUSAT, Kochi - 22.
39	Dr. Beena Mary John "Fabrication And characterization of Dye Sensitized Polymer Films for Holographic Applications".	Department of Physics CUSAT, Kochi - 22.	Dr. C. Sudha Kartha Reader Department of Physics CUSAT, Kochi - 22.
40	Dr. Mini Kuriakose "Tridentate Schiff Bases of some Aroyl Hydrazides And their Metal Complexes Spectral And Structural Studies".	Department of Applied Chemistry CUSAT, Kochi - 22	Dr. M.R. Prathapachandra Kurup Professor Department of Applied Chemistry, CUSAT, Kochi - 22.
41	Dr. Pramod P "Optical Properties of Nanoparlecles Decoraed Gold Nanorods And Carbon Nanotubes".	National Institute of Interdisciplinary Science and Technology Trivandrum - 19.	Dr. K. George Thomas Scientist NIIST Trivandrum - 19.
42	Dr. Ajimsha R.S. "Growth and characterization of ZnO Based Heterojunction Diodes and ZnO Nanostructures by Pulsed lases Ablation".	Department of Physics CUSAT, Kochi - 22.	Dr. M.K. Jayaraj Reader Department of Physics CUSAT, Kochi - 22.
43	Dr. Anita E I "Luminiscence Studies of Strontium Sulphide Based Phosphorus for Display Applications".	Department of Physics CUSAT, Kochi - 22.	Dr. M.K. Jayaraj Reader Department of Physics CUSAT, Kochi - 22.
44	Dr. S. Ramaswamy "Study of Ferruginous and Titano ferrous Impcerily Minerals in Chine Clay".	National Institute of Interdisciplinary Science and Technology Trivandrum - 19.	Dr. Sathy Chandrasekhar Scientist FNIIST Trivandrum - 19.



Sl. No.	Name of the Candidate & Title of the Thesis	Department/Centre of Research	Name & Designation of the Guides
45	Dr. Gleeja V.L. "Modelling And Analysis of Bivariate Lifetime Data using Reversed Hazard Rates".	Department of Statistics CUSAT, Kochi - 22.	Dr. P.G. Sankaran Reader Department of Statistics CUSAT, Kochi - 22.
46	Dr. Sudhishkumar Kattumannil "Characterization of Probability Distributions by Variance Bounds And its Application".	Department of Statistics CUSAT, Kochi - 22.	Dr. N. Unnikrishnan Nair P Emeritus Professor Department of Statistics CUSAT, Kochi - 22.
47	Dr. Sreeja V.N. "Regression Models for Bivariate Survival Data".	Department of Statistics CUSAT, Kochi - 22.	Dr. P.G. Sankaran Reader Department of Statistics CUSAT, Kochi - 22.
48	Dr. Anisha G.S. "A Galactosidase from Streptomyces Griseoloalbus: An Enzyme with Versable Applications".	National Institute of Interdisciplinary Science and Technology Trivandrum - 19	Dr. P. Prema Scientist F NIIST Trivandrum - 19.
49	Dr. Pearl Augustine "Development of Electro Chemical Sensors for the Determination of Certain Pharmaceuticals".	Department of Applied Chemistry CUSAT, Kochi -22.	Dr. K. Girish Kumar Reader Department of Applied Chemistry, CUSAT, Kochi -22.
50	Dr. Thomas P Zacharia "Studies on Heat Diffusion In selected conducting Polymer using probe Beam Deflection and Photoacoustic Techniques".	Department of Physics CUSAT, Kochi - 22.	Dr. T. M. Abdul Rasheed Reader Department of Physics CUSAT, Kochi - 22
51	Dr. Aravind P.R. "Mixed Oxide Silica Aerogets Synthesised through Non Supercritical Route for Functional Applications".	National Institute of Interdisciplinary Science and Technology Trivandrum - 19	Dr. K.G.K. Warriar Scientist G NIIST Trivandrum - 19.



Sl. No.	Name of the Candidate & Title of the Thesis	Department/Centre of Research	Name & Designation of the Guides
52	Dr. Aparna Lakshmanan "Studies on Some Graph Classes".	Department of Mathematics CUSAT, Kochi - 22	Dr. A Vijayakumar Reader Department of Mathematics CUSAT, Kochi - 22.
<u>Faculty of Marine Sciences</u>			
53	Dr. Smitha Nair "Market Orientation in Indian Seafood Processing Firms".	School of Industrial Fisheries CUSAT, Kochi - 16.	Dr. A Ramachandran Registrar CUSAT, Kochi - 22.
54	Dr. John Mohan "Studies on Some Aspects of Landings Utilization And Export of Commercially Important Cephalopods".	School of Industrial Fisheries CUSAT, Kochi - 16	Dr. M. Shahul Hameed Professor School of Industrial Fisheries CUSAT, Kochi - 16
55	Dr. Nisha P.C. "Cellular and Humoral Factors Involved in Defence Mechanisms of Fenneropenaeus Induces (H-M line Edwards, 1837)."	Central Marine Fisheries Research Institute Kochi - 18.	Dr. K.C. George Principal Scientist CMFRI Kochi 18.
56	Dr. Sreedevi M.G. "Pollution Routing in a Tropical Estuarine Environment".	Department of Physical Oceanography CUSAT, Kochi - 16.	Dr. A.N. Balachand Professor Department of Physical Oceanography Kochi - 16.
57	Dr. Sreedevi C "Impact of Bottom Trawling in Benthic Ecology along the Coastal Waters of Kerala with Special Reference to Meiofauna".	School of Industrial Fisheries CUSAT, Kochi - 16.	Dr. B. Madhusoodana Kurup Professor School of Industrial Fisheries CUSAT, Kochi - 16.
58	Dr. Anjana Mohan "Eco Biology and Fisheries of the Whelk, Babylonia Spirata (Linnacus - 1758) and Babylonia Zeylanica (Bruguiere 1789) Along Kerala Coast India".	Central Marine Fisheries Research Institute, Kochi - 18.	Dr. V. Kripa Senior Scientist Regional Centre CMFRI, Calicut.



Sl. No.	Name of the Candidate & Title of the Thesis	Department/Centre of Research	Name & Designation of the Guides
59	Dr. Nisha P Aravind "Studies on the Macrobonthic Community of Cochin Backwaters with special Reference to Culture of Eriopesa Cherlkensis (Gammaridal _ Amphepos)."	National Institute of Oceanography Kochi - 18.	Dr. Saramma U Panampunnayil Scientists F National Institute of Oceanography Kochi - 18.
60	Dr. Sheen V Dev "Dynamics of the Riflens Along the Southwest Continental Margin of India Coherence as process Oriented Analysis of Gravity".	Department of Marine Geology and Geophysics CUSAT, Kochi - 22.	Dr. M. Radhakrishna Reader Department of Marine Geology and Geophysics CUSAT, Kochi - 16.
61	Dr. Lesitha S "Geodynamics of the Andaman Sumatra - Java Trench - Arc System Based on Gravity and Seasmotectoni Study".	Department of Marine Geology and Geophysics CUSAT, Kochi - 22.	Dr. M. Radhakrishna Reader Department of Marine Geology and Geophysics CUSAT, Kochi - 16.
62	Dr. Prabhakaran M.P. "Ecological Studies on the Seagrass Ecosystem of Minicoy Lagoon Lakshadweep".	Central Marine Fisheries Research Institute Kochi - 18.	Dr. N.G. K. Pillai Director CMFRI, Kochi - 18.
63	Dr. Abhilash S "Tropical Mesoscale Convective Systems and Associated Energetics: Observational and Modeling Studies".	Department of Atmospheric Sciences CUSAT, Kochi - 16.	Dr. K. Mohan Kumar Dean Faculty of Marine Sciences CUSAT, Kochi - 16.
64	Dr. Shyma J "Economics of Ornamental Fisheries in Kerala".	School of Industrial Fisheries CUSAT, Kochi - 16.	Dr. K.T. Thomson Reader School of Industrial Fisheries CUSAT, Kochi - 16.
65	Dr. Sini T.K. "Applications of Fermentation Techniques in the Utilization of Prawn shell Waste".	Central Institute Fisheries Technology Kochi - 29.	Dr. P.T. Mathew Principal Scientist CIFT, Kochi - 29.



Sl. No.	Name of the Candidate & Title of the Thesis	Department/Centre of Research	Name & Designation of the Guides
66	Dr. Beena Sulochanan "Effect of Natural Antioxidant Source on the quality Up gradation of Processed Products from Inclean Mackerel". (Rast prelliges Kanagurla)	School of Industrial Fisheries CUSAT, Kochi - 16.	Dr. Saleena Mathew Professor School of Industrial Fisheries CUSAT, Kochi - 16.
67	Dr. Biju A "Studies on Taxonomy and Ecology of Mysidacea from the EEZ of India".	National Institute of Oceanography Kochi - 18.	Dr. Saramma U Panampunnayil Scientist FNIO, Kochi - 18.
68	Dr. Selvan S "Haematology of Fenneropenaeus Indicus in Response to Environmental Alterations and Microbial Infections".	Department of Microbiology, Marine Biology and Biochemistry CUSAT, Kochi - 16.	Dr. Rosamma Philip Senior Lecturer Department of Marine Biology CUSAT. Kochi - 16.
69	Dr. Rejish Kumar V.J. "Nitrifying Bioreactors Integrated into Shrimp and Praw Hatchery Systems: Molecular Characterization of the Nitrifying consortia Reactor Kinetics Modelling and Valedation"	Department of Microbiology, Marine Biology and Biochemistry CUSAT, Kochi - 16.	Dr. I.S. Bright Singh Director School of Environmental Studies CUSAT, Kochi - 21.
Faculty of Environmental Studies			
70	Dr. Shagana S Banu B "Studies on the Effect of Toxic Heavy Metal Mercurie on the Physiology And Biochemistry of an Estuarene Crab Scylla Serrata (For SKAL)	School of Environmental Studies CUSAT, Kochi - 22.	Dr. S. Rajathy Reader School of Environmental Studies CUSAT, Kochi- 22.
71	Dr. Manju N.J "Development of Nitrifying Photosynthetic sulpher Bacteria Based Bioaugmentation systems for the Bio remediation of Ammonia and Hydrogen Sulphide in Shrimp culture".	School of Environmental Studies CUSAT, Kochi - 22.	Dr. I.S. Bright Singh Director School of Environmental Studies CUSAT, Kochi - 21.



Sl. No.	Name of the Candidate & Title of the Thesis	Department/Centre of Research	Name & Designation of the Guides
72	Dr. T Geetha "Impact of Teak and Eucalyptus Monoculture on soils in the Highlands of Kerala".	Kerala Forest Research Institute Peechi Thrissur - 680 653.	Dr. M. Balagopalan Scientist KFRI Peechi Thrissur - 680 653.
Faculty of Humanities			
73	Dr. Poornima R "Adhunik Hindi Sahithya Mein Yudhajanya Sanskritik Sankat".	Department of Hindi CUSAT, Kochi - 22.	Dr. Shemim Aliyar Professor Department of Hindi CUSAT, Kochi - 22.
74	Dr. Sanjeev Kumar P "Samakaleen Hindi Upanyass EK Pravarthigath Adyayam".	Department of Hindi CUSAT, Kochi - 22	Dr. N. Mohanan Professor Department of Hindi CUSAT, Kochi - 22
75	Dr. Geetha N.P. "Chitra Mudgal Ka Katha Sahitya"	Department of Hindi CUSAT, Kochi - 22	Dr. R. Sasidharan Professor Department of Hindi CUSAT, Kochi - 22
76	Dr. Anitha P.L. "Samakaleen Hindi Upanyas Mein Anchalikata ke vividh Ayam".	Department of Hindi CUSAT, Kochi - 22	Dr. K. Vanaja Reader Department of Hindi CUSAT, Kochi - 22
77	Dr. Renjini Krishnan R "Nasira Sharma Ka Rachana Samsar".	Department of Hindi CUSAT, Kochi - 22	Dr. R. Sasidharan Professor Department of Hindi CUSAT, Kochi - 22
78	Dr. Rajan T.K. "Hindi Ka Dalit Upanyas EK Visleshanatmak Adhyayam".	Department of Hindi CUSAT, Kochi - 22	Dr. N. Mohanan Professor Department of Hindi CUSAT, Kochi - 22



Sl. No.	Name of the Candidate & Title of the Thesis	Department/Centre of Research	Name & Designation of the Guides
79	Dr. Shalini Jose "Sarveswar Daya Saxena Ke Kavyetar Sahithya Mein Samajik chethana".	Department of Hindi CUSAT, Kochi - 22.	Dr. Shemim Aliyar Professor Department of Hindi CUSAT, Kochi - 22.
Faculty of Social Sciences			
80	Dr. Vincent Varghese "Effect of Gender Role Orientations and Communications Slytes on Executive Performance".	School of Management Studies CUSAT, Kochi - 22.	Dr. Sebastian Rupert Mampilly Reader School of Management Studies, CUSAT, Kochi - 22.
81	Dr. Bhaskaran A "A Study of Scheduled Tribe Co-operative Societies in Wayanad District Performance Problem and Prospects".	Department of Applied Economics CUSAT, Kochi - 22.	Dr. M. Meera Bai Reader Department of Applied Economics CUSAT, Kochi - 22.
82	Dr. Radha Karunakaran "A Study on Human Resource Management Practice in Private Hospitals of Kerala"	School of Management Studies CUSAT, Kochi - 22.	Dr. P. Sudarsanan Pillai Professor School of Management Studies, CUSAT, Kochi -22.
83	Dr. Victor Anandkumar "E – Marketing Motivators, Inhibitors and Critical Success Factors: A Study of Small and Medium Tourism Enterprises (SMTES) in Maurileers And Andaman Islands, India".	School of Management Studies CUSAT, Kochi - 22.	Dr. C.A. Francis Professor School of Management Studies CUSAT, Kochi - 22.
Faculty of Engineering			
84	Dr. Meera V "Quality and Treatment of Roof Harvested Rain Water".	School of Engineering CUSAT, Kochi - 22.	Dr. M. Mansoor Ahammed Assistant Professor SV National Institute of Technology, SURAT.



Sl. No.	Name of the Candidate & Title of the Thesis	Department/Centre of Research	Name & Designation of the Guides
85	Dr. Pramod V.R. "MQFD: A Model For Synergizing TPM QFD".	School of Engineering CUSAT, Kochi - 22.	Dr. Jagathy Raj Professor School of Management Studies, CUSAT, Kochi - 22.
86	Dr. James K C "Studies using Computer Simulation Models to solve problems Related to Logistics Terminals".	School of Engineering CUSAT, Kochi - 22.	Dr. M. Bhasi Professor School of Management Studies CUSAT, Kochi - 22.
87	Dr. Rajesh V.G. "Recurrence Quantification Analysis of System Signals: For Detecting Tool Wear And Chatter in Turning":	School of Engineering CUSAT, Kochi - 22.	Dr. V.N. Narayanan Nampoothiri Reader School of Engineering CUSAT, Kochi - 22
88	Dr. Jayasree P.K. "Performance of Gabion Faced Reinforced Earth Retaining Walls".	School of Engineering CUSAT, Kochi - 22.	Dr. K.S. Beena Reader School of Engineering CUSAT, Kochi - 22.
Faculty of Law			
89	Dr. Susmitha P Mallaya "Documentase Credit Law: An Indian Prospechure".	School of Legal Studies CUSAT, Kochi - 22.	Dr. A.M. Varkey Reader School of Legal Studies CUSAT, Kochi - 22.



PLANNING AND DEVELOPMENT DIVISION

Planning and Development Division is one of the main branches of the University. It co-ordinates the overall development of the University under the assistance of various funding agencies like UGC, MHRD, CSIR, AICTE, DOD, DST, DBT, etc. It also helps the Principal investigators of the University to get various projects implemented with the financial assistance of the above agencies. The Planning Division, with the help of the Engineering Department, co-ordinates the construction and maintenance of all the buildings for offices/departments/hostels/quarters etc. It helps the teaching departments and Central Library for the purchase of equipments, books & journals and consumables for the Lab/Library etc.

Planning Division arranges National and International Conferences, Seminars, Symposia, etc. with financial assistance of external funding agencies. It co-ordinates the travel of teachers in and outside the country to attend National and International Conferences. It helps the University to appoint Visiting Professors / Emeritus Fellows under the UGC scheme. The Division also helps to provide financial assistance for the conduct of UGC sponsored refresher courses and to the teacher fellows of the FIP scheme. It also looks after the functioning of the NODAL Centre and STIC as well as various centers under the University. The Division is headed by the Planning and Development Officer. The Division has one Assistant Registrar, 3 Section Officers, 8 Assistants and 2 supporting staff. In addition to the ongoing projects, details of Seminars, Symposia and Refresher courses conducted during 2008-09 are provided. Planning Division also prepares Annual plan proposals to the state government and 5 year plan to UGC.

Seminar/Conference/Workshop/Refresher Courses held during 2008-09

Sl.No	Title	Duration	Co-ordinator	Funding Agency
1.	Workshop on "Network of Excellence in fibre optics, Photonics & Bio - Instrumentation" International School of Photonics	2 - 5 September 2008	Prof.V.P.N. Nampoori	DST
2.	Task meeting on Acquaculture & Marine Biotechnology Department of Biotechnology	19 - 20 August 2008	Prof.M. Chardrasekaran	DST
3.	International Conference on Advance in Neurosciences XXVI Annual meeting of Indian Academy of Neurosciences Department of Biotechnology	12 - 14 December 2008	Dr. C.S. Paulose	DRDO, DST, DBT, ICMR, KSCSTE, CSIR Department of Atomic Energy UGC



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| 4. NBNI Workshop in Neurobiology & Neuro Information Department of Biotechnology | 9 - 10
December
2008 | Dr.C. S. Paulose | ICMR, DRDO, DST |
| 5. International Seminar on frontiers in Nano Science & Technology (Cochin Nano - 2009) Department of Physics | 3 - 6
January
2009 | Dr. M.R. Anantharaman | DRDO, DST,
CSIR, ICMR,
AICTE, KSCSTE,
UGC |
| 6. National Symposium on Antennas Propagation (APSYM 2008) Department of Electronics | 29 - 31
December
2008 | Dr. Vasudevan | CSIR, AICTE,
UGC |
| 7. National Workshop on "Live Cell functional Imaging & Neuro transmission receptors functional regulation using Confocal Microscopy | 15 - 17
December
2008 | Dr. C.S. Paulose | DST, KSCSTE |
| 8. International Conference on Probability Theory and Stochastic process Department of Mathematics | 6 - 9
February
2009 | Dr. A. Krishnamoorthy | CSIR, DST, UGC |
| 9. National Seminar on Aquatic Chemistry Recent Development in Water Chemistry Department of Chemical Oceanography | 26 - 28
March 2009 | Dr. N.
Chandramohanakumar | Ministry of Earth
Sciences
UGC |
| 10. National Seminar on Information Theory Department of Mathematics | 9-10
December
2008 | Dr. A. Vijayakumar | KSCSTE |
| 11. Seminar on Banking Financial Services & Markets Emerging Paradigms Department of Applied Economics | 23 - 24
March
2009 | Dr. P.K. Manoj | UGC |
| 12. National Seminar Hindi Pragativadi Kavita Aur Trilochana Department of Hindi | 22 - 23
January
2009 | Dr. N. Mohanan | UGC |
| 13. Third National Conference on Recent Advances in Civil Engineering (RACE 2008) Division of Civil Engineering, School of Engineering | 4 - 6
December
2008 | Dr. Benny Mathew
Abraham | UGC |



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| 14. National Seminar on
Creating and delivering
value for Customs, School
of Management Studies | 6-7
February
2009 | Dr. Moli P.Koshy | UGC |
| 15. Annual Photonics
Workshop 2009 International
School of Photonics | 26 - 28
February
2009 | Dr.V.P.N. Nampoori | UGC |
| 16. National Seminar on Open
Software Organized by,
Free Software foundations
of India | 22 - 23
November
2008 | Dr. Ignatious Kunjumon | UGC, CIRM |
| 17. International Conference
on Advances in Polymer
Technology APT - 2008 | 25 - 27
September
2008 | Dr.Thomas Kurian | UGC |
| 18. Refresher Course
Department of Marine
Biology, Microbiology and
Biochemistry | 2 - 23
March 2009 | Dr.
Mohammed Hatha A.A. | UGC |

**DETAILS OF PROJECTS IMPLEMENTED DURING
THE FINANCIAL YEAR 2008 - 2009**

No	Title of the Project	Principal Investigator	Funding Agency	Total Grant Sanctioned
1.	Biogeochemistry of the mineral resources in the lime shell deposits at the coastal belt of Kannur District, Kerala	Dr. Sujatha C. H. Senior Lecturer Dept. of Chemical Oceanography	University Grants Commission	70,000
2.	Studies of Alpha - Amylase Immobilization on Zinc Oxide Origin of Research Problem	Dr. P. V. Mohanan Lecturer Department of Applied Chemistry	University Grants Commission	88,000
3.	A Comparative Study of Eco-Criticism in Contemporary Hindi and Malayalam Novels	Dr. K. Vanaja Reader Department of Hindi	University Grants Commission	516,800
4.	Community Based Ecotourism in A Globalised Economy: A Sustainable development Option for Kerala	Dr. D. Rajasenan Director Centre for Rural Development & Appropriate Technology	University Grants Commission	612,100
5.	Women Empowerment as Indian Cultural Legacy with Special Reference to Hindi - Malayalam Poetry.	Dr. N. G. Devaki Professor Department of Hindi	University Grants Commission	385,200
6.	Isolation and characterization of humic substances from mudbanks, a unique phenomenon along the southwest coast of India	Dr. S. Muraleedharan Nair Reader Dept. of Chemical Oceanography	University Grants Commission	170,000



No	Title of the Project	Principal Investigator	Funding Agency	Total Grant Sanctioned
7.	Atmospheric Boundary Layer (ABL) and Cloud Characteristics and Monitoring of Aerosol Over Cochin	Dr. C. A. Babu Professor Dept. of Atmospheric Sciences	Indian Space Research Organization	1,667,000
8.	Development of LFeO ₄ Cathode Material for Lithium Ion Cell	Dr. S. Jayalekshmi Reader Department of Physics	Vikram Sarabhai Space Centre	950,000
9.	Photothermal Deflection (PTD) for Non - destructive Testing of Space Vehicle Components	Dr. K. P. Vijayakumar Professor Department of Physics	Indian Space Research Organization	1,206,000
10.	Biotracers of Mangrove Ecosystems Along Kerala Coast North of Cochin	Dr. N. Chandramohanakumar Professor Dept. of Chemical Oceanography	Ministry of Earth Sciences	2,001,220
11.	Microbenthos in the Shelf Regions of the South East and South West Coast of India	Dr. Rosamma Philip Department of Marine Biology, Micro Biology and Bio Chemistry	Ministry of Earth Sciences	8,000,000
12.	Monitoring and Surveillance of Harmful Algal Blooms	Dr. A. V. Saramma Reader Department of Marine Biology, MicroBiology and BioChemistry	Ministry of Earth Sciences	5,000,000
13.	Optimization of the Bioremediation Technology Developed for Shrimp Culture System Mode	Dr. I. S. Bright Singh Professor National Centre for Aquatic Animal Health	Ministry of Earth Sciences	2,383,000
14.	Improvement of Optical Transmission Characteristics of Tokamak Optical Windows	Dr. M. K. Jayaraj Reader Department of Physics	Board of Research in Fusion Science & Technology	628,000
15.	Travel Grant to Participate in the 1st International Symposium on Functional Materials, Kualalumpur, Malaysia	Ms. Asha A. S. Department of Physics	Department of Science & Technology	15,994



No	Title of the Project	Principal Investigator	Funding Agency	Total Grant Sanctioned
16.	Behaviour of Concrete Deep Beams Reinforced With Fibre Reinforced Plastic Bars	Dr. Job Thomas Lecturer Division of Civil Engineering, School of Engineering	Department of Science & Technology	1,524,000
17.	Assesment of Chemical Characteristics and Dynamics of Cochin Estuary for a Sustainable Management	Dr. Renjith K.R Department of Chemical Oceanography	Department of Science & Technology	1,656,000
18.	Hydrogeomorphology and Hydrogeology of Coastal Aquifiers of Central Kerala: Special Reference to Saline Water Incursion.	Dr. C. P. Priju Department of Marine Geology & Geophysics	Department of Science & Technology	1,830,000
19.	Modelling and Analysis of Financial Time Series	Dr. N. Balakrishna Reader Dept. of Statistics	Department of Science & Technology	1,880,160
20.	Heterogeneous Photocatalytic Treatment Of Chemical And Bacterial Pollutants From Wastewaters	Dr.suja P. Devipriya School of Environmental Studies	Department of Science & Technology	1,608,000
21.	Developemnt of Low Cost Adsorbents and Catalysts From Waste Biomass Fly Ash	Dr. Rani Abraham Department of Applied Chemistry	Department of Science & Technology	1,230,000
22.	For Improvement of S and T Infrastructure in universities and Higer Educational Institutions FIST	Dr. I.S. Bright Singh Professor School of Environmental Studies	Department of Science & Technology	7,450,000
23.	Growth and Characteristics of Nano Structured Materials and its Applications	Dr. M. K. Jayaraj Reader Dept. of Physics	Department of Science & Technology	32,938,800
24.	Development of Smart Magneto Rheological Elastomers Based on Rare Earth Magnets	Dr. M. R. Anantharaman Reader Department of Physics	Indian Rare Earth Limited Research Centre, Kollam	3,674,500



No	Title of the Project	Principal Investigator	Funding Agency	Total Grant Sanctioned
25.	Development and Study of Polymer Composites for Efficient EMI Shielding Property at Microwave Frequencies	Dr. C. K. Anandan Reader Dept. of Electronics	Defence Research & Development Organization	1,567,000
26.	Stem Cell Therapy in Parkinsons Disease Indian Dopaminergic Receptor Subtypes Functional Regulation by Norepinephrine Serotonin Acetylcholine and GABA	Dr. C. S. Paulose Professor Department of Biotechnology	Council for Medical Research	3,000,000
27.	Mapping of Technically Skilled Manpower in Kerala	Dr. S Harikumar Professor Department of Applied Economics	Indian Council of Social Science Research	457,950
28.	Sumulation and Design of a Dielectric Diplexer	Dr. P. Mohanan Professor Dept. of Electronics	Vikram Sarabhai Space Centre	870,000
29.	Design and Development of Compact Antennas for UWB Communications	Dr. S. Mridula Reader Division of Electronics, School of Engineering	All India Council for Technical Education	1,495,000
30.	Modernization of CAD / CAM Lab	Dr. V. N. Narayanan Namboot Lecturer Division of Mechanical Engineering, School of Engineering	All India Council for Technical Education	700,000
31.	Standardisation of PCR Methods for Diagnosing Viral Disease in Ornamental Fishes as Part of Biosecurity Programme	Dr. I. S. Bright Singh Professor National Centre for Aquatic Animal Health	The Marine Products Export Development Authority	633,650
32.	Training Programme on Compliance with Standards in Foreign Markets and Prepartion of a Hand Book/ Manual on Compliance with Standards in EU, USA and Japan	Dr. John Mohan Senior Lecturer School of Industrial Fisheries	The Marine Products Export Development Authority	304,500



No	Title of the Project	Principal Investigator	Funding Agency	Total Grant Sanctioned
33.	Design and Development of a Two Level Expert System for recommending Appropriate Computer Accessibility Technology for the Physically Challenged	Dr. Sumam Mary Idicula Reader Department of Computer Sciences	Kerala State Council for Science Technology & Environment	398,200
34.	Strengthening of Existing Childrens Hall of Famous Scientists in CSis	Dr. K. G. Nair Director Centre For Science in Society	Kerala State Council for Science Technology & Environment	200,000
35.	Development and standardization of enrichment protocol of micro algae fo LARVAL REARINF OF THE INDIAN EDIBLE OYISTER, CRASSOSTREA MADRASENSIS (PRESTON)	Dr Gijo Ittoop Department of Marine Biology, Microbiology and Biochemistry	Kerala State Council for Science Technology & Environment	1,490,500
36.	Agrobiodiversity Enhancement programme - study on Benthic Fauna and Soil Chemistry of selected Wetlands in Palakkad	Dr. Bijoy S. Nandan Reader Department of Marine Biology, Microbiology and Biochemistry	Kerala State Biodiversity Board	803,000
37.	Current status on the Biotic Potential in relation to the environmental quality of the Cochin Estuary, India	Dr. Bijoy S. Nandan Reader Department of Marine Biology, Microbiology and Biochemistry	Environment Management Agency, Kerala	1,267,600



DIRECTORATE OF PUBLIC RELATIONS AND PUBLICATIONS

The Directorate of Public Relations and Publications has done a commendable work during the period 2007-2008 and its activities helped the University to boost its image as a public organization, committed to the cause of higher learning. During 2008-2009, the Directorate took all efforts to provide up-to-date information to other academic institutions, research scholars, students and to the general public regarding higher education and related opportunities. It also assisted various departments in organising seminars, workshops and symposia by ensuring an excellent media coverage. Such programmes include, National Conference on Free software, Programme named Magic of Chemistry, National workshop on Science Writing and Reporting, Seminar on Antennas, International conference on Advances in Polymer Technology, Launching of online repository of Cusat, International Conference on Nanotechnology, two day seminar on decentralized waste management, Dr. Shanti Swarup Bhatnagar Oration, Visit of Oman Education Minister Rawya Saud AL-busuaidi, etc. The Directorate published a book named Sastrapadham which contains a bunch of recommendations and articles which could be considered as a blue print for the sustainable development of the State of Kerala. Timely and effective briefing of the media by the Directorate of Public Relations provided a source of authentic information for all who were in pursuit of excellence in learning.

The staff of the Directorate took all efforts in clearing the doubts of the general public regarding various academic programmes of CUSAT directly and over phone besides propagating the message of science and technology among the public. Many of the dignitaries from India and Abroad, who visit the University during the year were welcomed by the Directorate of Public Relations and Publications. The Directorate was able to give wide publicity to the Common Admission Test 2009, through the media for which an overwhelming response was received. It took all efforts to bring out the University Diary in time with up-to-date information of the University and circulated to all concerned, besides the publication of Annual Report of the University. Around 1000 press releases and relevant notifications and advertisements were issued through this office to dailies in both Malayalam and English and to the Electronic Media. The Directorate was able to give wide coverage of the National and International Seminars conducted by the various departments. The Directorate won appreciation from all quarters for the excellent coverage it ensured for all University activities through the print and electronic media. The University has entrusted all publication activities with the Directorate which has published a total no of 19 books till date.

Kerala Economy - Trajectories, Challenges and Implications, Resource Based Industries in Kerala, Industrial Economy of Kerala - Nodes and Linkages, Science Communication, Harnessing Light Selected Topics in Photonics, Proyojanparak Hindi Vyakaran: Vyavaharik Paripreshya Mein (Functional Aspects of Grammar in Communicative Hindi), Sustain Fish, Aquaculture and Marine Biotechnology, Grameenam - Proceedings of Environmental Awareness Workshop conducted by CSC, Web of Language: Random thoughts on its Science and Technology, Malayalam Sahitya: Vividh Ayam, Corporate Social responsibility (An investigation into the insides), Check-List of Male Female Differences of some Indigenous



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ornamental fishes, Perspectives on comparative literature and culture, Proceedings of National symposium on Antennas and Propagation(PSYM), Sasthrapadham, Prathibhasalikalude Kaipusthakam (Translated Version of the "Brain worker's Hand Book", Bio-technology for Blue Revolution, Science Journalism, Emerging Technologies and Financing models for affordable housing in India, Banking, Financial Services and Markets - emerging Paradigms, Proceedings of the International symposium on Ocean Electronics, International conference on Nueroscience updates are some of the books published.



CENTRE FOR SCIENCE COMMUNICATION

The following were the major programmes organized by the centre during the period of 2008 - 2009.

- Talk on “Man-made effects on Global Warming and Monsoon” by Dr. K. Mohan Kumar, Dean, Faculty of Marine Science, Cusat and Felicitation to the speaker, for winning ASLI Choice International Prize. Dr. Gangan Prathap, Director, National Institute of Science Communication and Information Resources (NISCAIR), CSIR was the chief guest of the programme (06 March 2009)
- “Photo Exhibition on the slow death of Periyar River” in Kerala organized by Centre for Science Communication in collaboration with Periyar Malineekarana Virudha Samithy at the School of Environmental Studies, Cusat (06 March 2009)
- Second Santhi Swarup Bhatnagar Oration on ‘Kerala Tradition in the field of Astronomy’ by Prof. K. Papooty, well-known popular science writer and Director, Institute of Enclopaedia Publications, Govt. of Kerala at Electronics Auditorium, Cusat (25 February 2009)
- Release of ‘Science Communicator’ an Inter-disciplinary Journal for Science Communication and Journalism published by Centre for Science Communication at Electronics Auditorium by Prof. K. Papooty by handing over a copy to Dr. K. Vasudevan, Head of the Department of Electronics, Cusat (02 February 2009)
- Publication of the Santhi Swarup Bhatnagar oration delivered by Prof. K. Papooty in Malayalam titled “Kerala Tradition of Astronomy”
- Second National workshop on Science Writing and Reporting at Electronics Auditorium co-sponsored by Kerala State Council for Science Technology and Environment, Govt. of Kerala, Thiruvananthapuram. (30,31 October and 01 November 2008)
- Publication of a Practice manual titled “Science Journalism” for Scientists, Science writers and Public Relations Practitioners authored by Dr. S. Anilkumar, Co-ordinator, Centre for Science Communication, Cusat.
- State level inter-school painting competition on the theme “Nature” Cash prize and merit certificate were given to the winners.
- A major project sanctioned for 12 months by Kerala State Council for Science Technology and Environment titled Science Popularization and Malayalam Newspapers: A Comparative Content Analysis to the centre is going on. (It is expected to complete by March 2011)



RECOGNISED COLLEGES / INSTITUTIONS

Sl. No.	Name of the Institutions	Courses Offered.
1	ER & DCI Institute of Technology, PB No. 6520 Vellayambalam, Trivandrum-695033	1. MCA 2. M.Tech. (VLSI Design & Embedded System)
2	Sarabhai Institute of Science & Technology, Uriacode,Vellanadu, Thiruvananthapuram-695543	1. B Tech (Computer Science & Engineering) 2. B Tech (Electronics & Communication Engineering) 3. B.Tech (Electrical & Instrumentation Engineering) 4. B. Tech (Mechanical Engineering)
3	College of Engineering, Government ITI Campus, Attingal, Thiruvananthapuram-695101	1. B.Tech. (Computer Science & Engineering) 2. B.Tech. (Electronics & Communication Engineering)
4	CONSPI Academy of Management Studies, Plankalamukku, Industrial Estate PO, Thiruvananthapuram-695109	1. MBA
5	M G College of Engineering, Thrikkanamangalam,Thiruvallam, Thiruvananthapuram - 691531	1. B.Tech. (Computer Science & Engineering) 2. B. Tech(Electronics & Communication Engineering) 3. B. Tech(Information Technology) 4. B. Tech(Electrical & Electronics Engineering)
6	College of Engineering, Kottarakkara, Kollam - 691531	1. B.Tech. (Computer Science & Engineering.) 2. B. Tech (Electronics & Communication Engineering)
7	College of Engineering, Perinad PO, Perumon, Kollam - 691501	1. B.Tech (Computer Science & Engineering) 2. B.Tech (Electronics & Communication Engineering) 3. B.Tech (Information Technology) 4. B.Tech (Electrical & Electronics Engineering)



Sl. No.	Name of the Institutions	Courses Offered.
8	College .of Engineering, Karunagapally, Kollam - 690518	1. B.Tech (Computer Science & Engineering) 2. B. Tech (Information Technology) 3. B. Tech (Electronics & Communication Engineering)
9	T K M Insitute of Technology, Musaliar Hills, Karuvellil, Ezhukone, Kollam	1. B. Tech (Computer Science & Engineering) 2. B. Tech (Electronics & Communication Engineering) 3. B. Tech (Information Technology) 4. B. Tech (Applied Electronics & Instrumentation) 5. B. Tech (Biomedical Engineering) 6. B. Tech (Food Technology)
10	College of Engineering, Adoor, Pathanamthitta - 691523	1. B.Tech (Electronics & Communication Engineering) 2. B. Tech (Computer Science & Engineering) 3. B. Tech (Mechanical Engineering)
11	College of Engineering, Kallooppara, Pathanamthitta - 689603	1. B.Tech (Electronics & Communication Engineering) 2. B.Tech (Computer Science & Engineering) 3. B.Tech (Information Technology)
12	College of Engineering, Kidangoor, Kottayam - 686583	1. B.Tech.(Computer Science & Engineering) 2. B. Tech (Electronics & Communication Engineering) 3. B. Tech(Information Technology) 4. B. Tech (Electronics & Instrumentation Engineering) 5. B. Tech (Electrical & Electronics Engineering)
13	College of Engineering, Poonjar Thekkekara PO, Poonjar, Kottayam - 686583	1. B. Tech (Computer Science & Engineering) 2. B. Tech (Electronics & Communication Engineering) 3. B. Tech (Information Technology)



Sl. No.	Name of the Institutions	Courses Offered.
14	College of Engineering, Chengannur, Alappuzha	1. B.Tech (Computer Science & Engineering) 2. B.Tech (Electronics & Communication Engineering)
15	College of Engineering, Pallipuram, Cherthala, Alappuzha - 688541	1. B. Tech (Computer Science. & Engineering) 2. B. Tech (Electronics & communication Engineering.)
16	K V M College of Engineering and Information Technology, Kokkothamangalam, PB No.30, Cherthala, Alappuzha - 688583	1. MCA 2. M.Sc.(Biotechnology)
17	College of Engineering, Munnar, PB No.45, County Hills, Munnar, Idukki - 685612	1. B.Tech (Computer Science & Engineering) 2. B.Tech (Electronics & Communication Engineering) 3. B.Tech (Electrical & Electronics Engineering.)
18	Model Engineering College, BMC PO, Thrikkakara, Ernakulam - 21	1. B.Tech (Electronics & Communication Engineering) 2. B. Tech (Computer Science & Engineering) 3. B. Tech (Electronics & Biomedical Engineering) 4. M. Tech (VLSI Design & Embedded Systems)
19	The Co-operative Medical College, HMT Colony PO, Kalamassery, Ernakulam - 683503	1. MBBS
20	Toch Institute of Science and Technology, Arakunnam, Ernakulam - 682313	1. B.Tech (Computer Science & Engineering) 2. B.Tech (Electronics & Communication Engineering) 3. B.Tech (Information Technology) 4. B.Tech (Electrical & Electronics Engineering) 5. B. Tech (Civil Engineering) 6. B. Tech (Mechanical Engineering) 7. MBA



Sl. No.	Name of the Institutions	Courses Offered.
21	Central Institute of Fisheries & Nautical Engineering Training, Fine Arts Avenue, Ernakulam	1. Bachelor of Fishing Science (Nautical Science)
22	Co-operative Institute of Technology, Palayanada PO, Vadakara, Kozhikode - 673530	1. B.Tech.(Computer Science & Engineering) 2. B. Tech. (Electronics & Communication Engineering) 3. B. Tech. (Information Technology) 4. B. Tech. (Electronics & Instrumentation Engineering)
23	College of Engineering, Eranholi, Thalassery, Kannur - 670107	1. B.Tech.(Computer Science & Engineering) 2. B. Tech (Electronics & Communication Engineering) 3. B. Tech(Information Technology) 4. B. Tech(Electrical & Electronics Engineering) 5 B. Tech(Mechanical Engineering)
24	College of Engineering, Thrikkaripur, Cheemeni, Kasargod - 671313	1. B.Tech (Computer Science & Engineering) 2. B.Tech (Electronics & Communication Engineering) 3. B. Tech (Information Technology) 4. B. Tech(Electrical & Electronics Engineering)



SOPHISTICATED TEST AND INSTRUMENTATION CENTRE

The Sophisticated Test and Instrumentation Centre (STIC) is an autonomous institution (estd. 1995) sponsored by the Kerala State Council for Science, Technology and Environment (KSCSTE) of the Government of Kerala and Cochin University of Science and Technology (CUSAT).

1. Programmes of Study/Research : Objectives of STIC are :

- (1) Undertake research and development activities in the field of instrumentation and related areas, which are of relevance to industries in the state,
- (2) Provide advanced instrument facilities for analysis, testing, measurement and calibration to users from industries, R&D establishments and academic institutions,
- (3) Design and develop trainer kits, demonstration sets and scientific instruments needed for Engineering/Science Colleges
- (4) Encourage taking up projects, which will motivate younger scientists for undertaking hardware generation in experimental research,
- (5) Co-operate with professionals and academic staff in frontier areas of instrumentation,
- (6) Undertake training and services for personnel from industries, R&D establishments and academic institutions.

STIC has established highly sophisticated test, measurement, analysis and research laboratories in the areas of instrumentation, quality evaluation/calibration, chemical analysis and testing. A good number of industrial organizations, academic institutions and research establishments have recognised STIC as a potential centre for the calibration of their instruments, product testing and chemical analysis. In addition to regular calibration, testing and analysis activities, the scientific personnel are also involved in research and development activities in instrumentation and allied areas.

2. Faculty Members

Sl.No.	Name	Designation	Qualification	Specialisation
1.	Dr. Jacob Philip	Director	M.Sc., Ph.D	Analytical Instrumentation, Calibration, Testing
2.	Dr. J. Jagannath Bhat	Scientist E1	M.Sc, Ph.D	Calibration, Testing
3.	Mr. Paul V. John	Scientist C	M.Tech	Calibration, Testing
4.	Ms. Sreeja V.	Scientist C	B.Tech	Calibration, Testing
5.	Dr. Shibu M. Eappen	Scientist B	M.Sc, Ph.D	Analytical Instrumentation
6.	Mr. Adarsh K.J.	Scientist B	B.Tech	Analytical Instrumentation

3. Visiting Faculty (If any) : Nil



4. Research Staff

Sl.No.	Name	Designation	Qualification	Specialisation
1.	Dr. Bindu M. Krishna	Scientist (DST Project)	M.Sc., Ph.D	Nonlinear Dynamics

5. Research Scholars :

Sl.No.	Name	Funding Agency	Guide	Area of Work
1.	Mr. Ginson T.J.	CSIR	Dr. Jacob Philip	Sensors and Instrumentation
2.	Mr. Rejikumar R.	N/A	Dr. Jacob Philip	DRC measurement in rubber latex
3.	Ms. Viji C.	N/A	Dr. Jacob Philip	Photothermal effect in condensed media
4.	Nisha M.R.	CUSAT	Dr. Jacob Philip	Photothermal effect in nanofluids
5.	Uma S.	CSUAT	Dr. Jacob Philip	Photothermal effect in nanosolids

6. Administrative Personnel

Sl.No.	Designation	No. of Posts
1	Section Officer	1
2.	Personal Assistant	2
3.	Office Assistant	2
4.	Helper	2
5.	Driver	1

7. Technical Personnel

Sl.No.	Designation	No. of Posts
1.	Technical Officer	3
2.	Technical Assistant	6

8. Student Enrollment : Nil

9. Research Facilities

a. Laboratories (List out Major equipments available)

STIC has set up the following facilities to carry out its activities.

- A. Calibration laboratories
 - (i) Electro-Technical
 - (ii) Thermal
 - (iii) Mechanical
- B. Testing laboratories



- C. Sophisticated Analytical Instrument Facility (SAIF)
- D. Incubation, Research and Development laboratory (IRDL)

Major equipment available are :

Equipment		Equipment	
1	500 MHz Digital Storage Oscilloscope	21	ICP-AES Spectrometer*
2	150 MHz Digital Storage Oscilloscope	22	Thermal Analyser DSC*
3	8½ digit Digital Multimeter	23	Thermal Analyser DTA/ TGA*
4	True RMS 4½ digit Multimeter	24	UV-VIS-NIR Spectrophotometer with internal DRA*
5	Portable Pneumatic Pressure Source	25	FT-IR Spectrometer*
6	Portable Hydraulic Pressure Source	26	X-ray powder Diffractometer*
7	High Temperature Bath	27	Temperature/ humidity cyclic chamber
8	7-Dial Decade Resistance Box	28	Teraohm Meter
9	5-Dial Decade Resistance Box	29	3ø Power Analyser
10	Data Logger	30	High Voltage Probes
11	Universal Testing Machine	31	Logic State Analyser*
12	Standard Multi-parameter Source	32	Photoacoustic Spectrometer+
13	Standard Platinum Resistance Thermometer	33	Ultrasonic Interferometer+
14	Standard S-type thermocouple	34	Photopyroelectric Spectrometer+
15	Low Temperature Bath	35	Electrical Conductivity Measurement set up+.
16	Universal Testing Machine	36	Scanning Electron Microscope with EDS*
17	Decade Capacitance Box	37	Ultrapure Water Distillation unit*
18	Decade Inductance Box	38	400 MHz FT-NMR Spectrometer*
19	CHN Analyser*		
20	GC Mass Spectrometer*		

In addition, a wide variety of minor instruments and facilities are available in STIC.

* Instruments in SAIF (supported by DST)

+ Instruments brought under different projects

b. Library

No. of books and Journals as on 31 st March of the Previous Year	Additions during the current year
1106	1

c. Others

(i) NABL Accreditation :

STIC is a Calibration laboratory accredited by NABL (National Accreditation Board for Calibration and Test Laboratories, Government of India) in the following areas



- (i) Electro-Technical
- (ii) Thermal
- (iii) Mechanical

10. Distinguished visitors : Nil

11. Ph.Ds Awarded

Sl.No	Title of Thesis	Name of Research Scholar	Supervising Guide
1	Thermal transport properties of selected ferroelectrics, mixed valence perovskites and dielectric ceramics using photopyroelectric technique	Smt. Manjusha M.V.	Dr. Jacob Philip

12. Publications

a. Papers

1. G. Varughese, A.S. Kumar, J. Philip and G. Louis
Elastic constant measurements of super ionic LiKSO₄ : Na single crystals
Cryst. Res. and Tech. 44 (2009) 300
 2. G.P. Joseph, N. Melikechi, J. Philip, J. Madhavan and P. Sagayaraj
Studies on the electrical, linear and nonlinear optical properties of manganese mercury thocyanate bis-dimethyl sulphoxide, en efficient NLO crystal
Physica B (2009)
 3. J. Philip and M.V. Manjusha
Thermal transport across incommensurate phases in potassium selenate:photo-pyroelectric and calorimetric measurements
J. Phys.: Condens. Matter 21 (2009) 045901
 4. G. Varughese, A.V. Alex, J. Philip and G. Louis
Ultrasonic study of elastic anomalies in lithium sodium sulphate hexa hydrate single crystal
Jour. Pure Appl. Ultrasonics 30 (2008) 45 – 48
 5. G. Varughese, J. Philip and G. Louis
Elastic anomalies in LiK_{0.9}Na_{0.1}SO₄ Single Crystal
Ferroelectrics 377 (1) (2008)55-62
 6. T J Ginson and J Philip
An inter-digital capacitive electrode modified as a pressure sensor
Sensors & Transducers Journal 99 (12) (2008) 25 – 32
 7. M.V. Manjusha and J. Philip
Thermal properties of Dicalcium Lead Propionate across the prominent transition temperatures
Ferroelectrics Letters 35 (5&6) (2008) 107-118
 8. J. Philip
Chasing light for five centuries : Mission still continues
Science & Society 6 (1) (2008) 7 - 18
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9. S. Manivannan, S. Dhanuskodi, S.K. Tiwari and J. Philip
Laser induced surface damage, thermal transport and microhardness studies on certain organic and semiorganic nonlinear optical crystals
Applied Physics B 90 (2008) 489 - 496
10. S. Dhanuskodi, S. Manivannan and J. Philip
Synthesis, spectral, optical and thermal studies of 1-methyl-2, 6-dimethyl-4-hydroxypyridinium chloride monohydrate and bromide monohydrate
Spectrochimica Acta Part A 69 (2008) 1207 – 1212
11. G. Subodh, M.V. Manjusha, J. Philip and M.T. Sebastian
Thermal properties of Polytetrafluoroethylene/Sr₂Ce₂Ti₅O₁₆ Polymer/Ceramic composites
Journal of Applied Polymer Science 108(2008) 1716- 1721

b. Books : Nil**13. Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students**

Name of Participant	Name of Seminar/ Conference/Workshop	Role
Dr. Jacob Philip	Kerala Science Congress, Kollam 28 - 31 January 2009	Session Chairman, Paper presentation
Dr. Shibu M. Eapen	Workshop on Electron Microscopy NIIST, Trivandrum 14 - 18 July 2008	Participant
Mr. Vigeo George	Training on Certified Internal Auditor as per ISO 17025 CETE, Bangalore 23 - 25 July 2008	Participant
Dr. Jacob Philip	17 th national Symposium on Ultrasonics, BHU, Varanasi 4 - 6 December 2008	Invited Speaker, Session Chairman
Dr. Jacob Philip	National Seminar on Advances in Materials, M.S. University, Tirunelveli 16 - 17 March 2009	Invited Speaker, Session Chairman

14. Awards / Honours / Fellowships etc. received : Nil**15. Sponsored Research Projects**

SI.No.	Title	Sponsoring Agency	Amount	Investigator(s)
1.	Development of human pressure mapping unit / foot pressure monitor employing E-field imaging sensor array	Kerala State Council for Science, Technology & Environment	8.14 Lakhs	Dr. Jacob Philip
2	Thermal Elastic and Di-Electric Properties of New Microwave Substrate Materials	DRDO	1.56 Lakhs	Dr. Jacob Philip

16. Research Programmes and Activities:

SI.No.	Problem/Topic	Investigator(s)
1.	Photoacoustic / photopyroelectric techniques to study thermal/ optical properties of solids	Dr. Jacob Philip Ms. Viji C



- | | |
|--|--|
| 2. Development of Photoacoustic scanning technique to measure thermal properties of coatings | Dr. Jacob Philip |
| 3. Ultrasonic technique to study elastic properties of solids | Dr. Jacob Philip |
| 4. Development of biomedical instrumentation systems | Dr. Jacob Philip
Mr. Ginson T.J.
Mr. Prasanth M.N. |
| 5. Preparation and characterization of different application oriented materials, including nanomaterials | Dr. Jacob Philip
Ms. M.R. Nisha
Ms. S. Uma |
| 6. Devising a secure communication system based on directly modulated semiconductor lasers | Dr. Bindu M. Krishna |

17. Seminar/Conference/Workshop/Refresher Courses conducted by the Department

Sl.No.	Title	Duration	Coordinator	Funding Agency
1	Workshop on Chromatography/ Mass Spectrometry	30 Oct. – 01 Nov. 2008	Dr. Jacob Philip	N/A N/A
2.	Workshop on Thermal Analysis Techniques	20-21 February 2009	Dr. Jacob Philip	N/A
3.	National Science Day, 2009	07 March 2009	Dr. Jacob Philip	KSCSTE
4.	Seminar on Large Hadron Collider	29.08.2008	Dr. Jacob Philip	N/A

18. Consultancy Work :

Sl.No.	Name of Consultancy	Name of Consultant	Sponsoring Agency
1.	Development of Modified Capacitive Detector	Dr. Jacob Philip	General Electric, Bangalore.



CENTRE OF EXCELLENCE IN LASERS AND OPTOELECTRONICS SCIENCES

(CELOS)

The University Grants Commission recognized Cochin University of Science and Technology as a "University with potential for Excellence" in the field of "Lasers and Optoelectronics Sciences" in March 2002 and released an amount of Rupees 5 crores for various activities under the "University with potential for Excellence" programme. Consequently a "Centre of Excellence in Lasers and Optoelectronics Sciences"(CELOS) was established in CUSAT in July 2002.

The primary objectives of this Centre are to initiate and organize innovative teaching, research and extension activities in this highly specialized field of lasers and optoelectronics, otherwise known as Photonics. The CELOS is also expected to cater to the research requirements of the workers in this field from nearby universities and institutions by offering them major laser facilities and associated accessories. The Expert Committee appointed by the University Grants Commission consisting of Dr.D.D.Bhawalkar, Director, Centre for Advanced Technology, Indore and Professor A.K.Sood, Indian Institute of Science, Bangalore along with Dr.K.Gunasekharan, Joint Secretary, University Grants Commission visited Cochin University of Science and Technology during 30th September to 1st October 2003. The Committee emphasized the need for greater overlap and focus for the research proposal from different groups. The Committee cleared an amount of Rs.194 lakhs with immediate effect for conducting the Five year Integrated M.Sc.Degree programme under CELOS. The remaining amount was set apart for establishing research facilities.

CELOS is at present functioning in a permanent building. A full-time Director was appointed for CELOS with effect from 1.06.2003 as per the recommendation of the UGC Expert Committee. Dr.P.Radhakrishnan, Professor, International School of Photonics, CUSAT is the Director with effect from 1st April 2008. At present there is one full-time Lecturer, one Reader and two Lecturers appointed on contract basis and three Hon.Professors in the CELOS. Teaching programme is one of the major activities of CELOS which conducts the five year (10 semester) Integrated M.Sc. Degree course in Photonics. This is a unique course which is in good demand by students from all over India as it is the only course of its kind in this country. The course structure, syllabus and regulation for this course have been approved by the University and seven batches of students (20 each) have so far joined the course and two batches have successfully come out.

One Research Associate, one Senior Research Fellow and three Junior Research Fellows are working in CELOS during the period under the report.

A Programmable Network Analyzer E8362B working in the range of 10MHZ-20GHz for setting up a light wave technology lab and a PCB prototyping machine for fabrication of Photonic Band Gap microwave devices are some of the major items of equipment, procured by CELOS for the use by the group working in the area of Microwave Photonics. A Tektronix 1 GHz DSO and a spectrofluorometer, one Motorized Long Travel Stage have also been



purchased for facilitating the research programme undertaken by CELOS. Research activities have been initiated by CELOS in the fields of Optical Fiber Amplifier, Fiber Optic Sensors, Laser produced Plasma, nonlinear process etc.

The subpicosecond laser system installed in CELOS is one of the most advanced and sophisticated systems and CUSAT has become the third University in the country to possess such a system (other than the National Laboratories). The system comprises of a Spectra Physics make "Tsunami" Ti: Sapphire laser system pumped by 5W "Millenium" diode pumped solid state laser along with an amplifier "Spitfire" which is pumped by a 30W Q-switched DPSS called "Empower". The entire system is costing US\$.3,00,000.

As suggested by the National Advisory Committee the newly established laser system in CELOS is operated as a National Facility for the benefit of research workers from anywhere in the country.

In addition to the major pico/femtosecond laser system, CELOS has procured a number of other items of equipment consisting of 1 GHz and 500 MHz Digital Storage Oscilloscope, Vibration Isolation system, Green DPSS lasers, HP 20GHz Network Analyzer, two workstations, specialized software like EDA tools, Femlab etc.

M.Sc. Laboratories are also being upgraded by purchasing additional sophisticated instruments. Most of the equipments are being utilized by students of CELOS and other departments.

1. Programmes of Study / Research:

1. M.Sc.Degree (Five year Integrated) in Photonics course
2. The Centre is engaged in promoting research activities in the area of Lasers and optoelectronics science and technology. Various kinds of research work in this direction are in progress in the participating departments namely the International School of Photonics, Department of Electronics and Department of Physics.

2. Faculty Members:

Sl.No.	Name	Designation	Qualification	Specialisation
1.	Dr. P.Radhakrishnan	Director	Ph.D.	Laser Technology Laser matter interaction, Fiber optics
2.	Dr. Sheenu Thomas	Lecturer	Ph.D.	Photothermal phenomena
3.	Dr. C.P.Girijavallabhan	Hon.Professor	Ph.D.	Lasers, Optoelectronics, Photonic materials
4.	Dr. V.M.Nandakumaran	Hon.Professor	Ph.D.	Theoretical photonics
5.	Dr. V.P.N.Nampoori	Hon.Professor	Ph.D.	Laser spectroscopy Laser matter interaction, Neural networks
6.	Dr. ReethammaThomas	Reader (on contract)	Ph.D.	Laser Physics
7.	Dr. Annie Joseph Vallamattom	Lecturer (on contract)	Ph.D.	Physics
8.	Smt. Mini Krishna K.	Lecturer (on contract)	Ph.D.	Physics

**3. Visiting Faculty (if any) : NIL**

Sl.No.	Name	Designation	Qualification	Specialisation
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4. Research Staff:

Sl.No.	Name	Designation	Qualification	Specialisation
1.	Dr.Geetha K.	Research Associate	Ph.D.	Polymer photonic devices

5. Research Scholars:

Sl.No.	Name	Funding Agency	Guide	Area of Work
1.	Shri.Mathew S. Senior Research Fellow	UGC	Dr.V.P.N. Nampoori	Non linear optics
2.	Smt. Sreelekha G. Junior Research Fellow	"	Dr.V.P.N.Nampoori	Optical studies of polymer and related materials
3.	Smt.Tintu R. Junior Research Fellow	"	Dr.Sheenu Thomas	Photo induced effects on chalcogenide glasses
4.	Shri.Sudeesh K. Junior Research Fellow	"	Dr.C.P.Girijavallabhan	Imaging and analysis related to light matter interaction

6. Administrative personnel:

Sl.No.	Designation	No. of Posts
1.	Section Officer (ISP S.O. In-charge CELOS)	1
2.	Assistant (Temporary)	1
3.	Typist	1
4.	Part-time Sweeper	1

7. Technical Personnel

Sl.No.	Designation	No. of Posts
1.	Laboratory Technician (Temporary)	2
2.	Librarian	1

8. Student Enrolment

Sl.No.	Programme of Study	Men	Women	Total
1.	M.Sc.Degree (Five year Integrated) in Photonics			
	2002-03	13	8	21
	2003-04	16	4	20
	2004-05	17	4	21
	2005-06	16	4	20
	2006-07	16	6	22
	2007-08	13	7	20
	2008-09	13	4	17



9. Research Facilities

a. Laboratories

LIST OF MAJOR EQUIPMENTS AVAILABLE IN CELOS

Sl.No.	Equipment
1.	Computer & Peripherals
2.	EDA Tools, Femlab
3.	EDA Tool Microstripes
4.	Workstation Standalone Terminal
5.	Digital Storage Oscilloscope
6.	Vector Network Analyser
7.	Diode Pumped Solid State Laser System
8.	Sub pico second laser System
9.	Spectro Photo Flourimeter
10.	20 KVA Online UPS System
11.	25 MHz Oscilloscope
12.	Special Vibration Isolation Table
13.	Function Generator, Power Supply etc.
14.	ICD Multimedia Projector
15.	CCD Camera
16.	Laser Power Energy Meter
17.	Ultrafast Optical components
18.	6 ^{1/2} Digital Multimeter
19.	Reckoning and Rotation Furnace
20.	CO ₂ Laser
21.	Fringe Capture System
22.	Vacuum Coating Unit
23.	Over Head Projector
24.	Cathode Ray Oscilloscope
25.	Motorised Long Travel Stages & Single Axis Controller
26.	Raman Notch Filter

b. Library

No. of books and Journals as on 31 st March of the Previous Year	Additions during the current year
1144	15

c. Others : NIL



10. Distinguished Visitors:

Sl.No.	Name	Affiliation	Remarks
1.	Dr.Promod R.Pratap	University of North Carolina at Greensboro	Gave Lecture
2.	Dr.Jayan Thomas	Arizona University, USA	"
3.	Dr.Jagthap	BARC, Mumbai	"
4.	Dr.Sajeev Kumar	SKKU, South Korea	"
5.	Prof.C.Vijayan	IIT Madras	Gave Raman Day Lecture
6.	Prof.Porsezian	Pondicherry University	"
7.	Dr.Reji Philip	RRI, Bangalore	"
8.	Prof.C.Unnikrishnan	TIFR, Mumbai	Gave Lecture
9.	Prof.A.K.Asundi	NTU, Singapore	"

11. Ph.Ds Awarded:

NIL

12. Publications:

a. Papers:

LIST OF PUBLICATIONS

1. Human pericardial fluid at microwave frequencies, A. Lonappan, B. Paul, V. O. Timothy, C. Rajasekaran, V. Thomas, J. Jacob and K. T. Mathew, Microwave and Optical Technology Letters, Volume 51, No.1, Pages 155-158, January, 2009.
2. Detection of biliary functional problems using microwaves, A. Lonappan, B. Paul, V. O. Timothy, C. Rajasekaran, V. Thomas, J. Jacob and K. T. Mathew, Microwave and Optical Technology Letters, Volume 51, No.1, Pages 101-103, January, 2009.
3. Microwave Studies on the Dielectric Properties of Sm and Sm/CdTe Doped Sol-Gel Glasses by Cavity Perturbation Technique., Siby Mathew, P. R. Rejikumar, Jaimon Yohannan, K.T.M athew, N. V. Unnikrishnan, Journal of Alloys and Compounds, Volume 462, Issues 1-2, pp 456-459, 25 August 2008.
4. A novel method of detecting HIV/AIDS using microwaves, A. Lonappan, V. Thomas, G. Bindu, J. Jacob C. Rajasekaran and K. T. Mathew, Microwave and Optical Technology Letters, Volume 50, No.3, Pages 557-561, March, 2008.
5. Robin Augustine, Ullas G. Kalappura, K. T. Mathew, Biocompatibility study of hydroxyapati - techitosan composite for medical applications at microwave frequencies Microwave and Optical Technology Letters, Volume 50 Issue 11, Pages 2931-2934, 2008.
6. Kinetics of bacterial colony growth by laser induced fluorescence, Nithyaja, B., Jisha, V. K., Tintu, R., Saramma, A. V., Nampoori V. P. N., Laser Physics, 19(3) , pp.468-472 (2009)
7. Thermal characterization of methylene blue intercalated montmorillonites by photoacoustic technique, This article is not included in your organization's subscription. However, you may be able to access this article under your organization's agreement with Elsevier. Lyjo K. Joseph, H. Suja, G. Sanjay, S. Sugunan, V.P.N. Nampoori and P.Radhakrishnan Applied Clay Science 42(3-4), pp483-487 (2009)



8. Fast imaging of laser –blow-off plume: Lateral confinement in ambient environment Sony George, Ajai Kumar, R K Singh and VP N Nampoori, Applied Physics Letters, 94, 141501 (2009)
9. Spectral and nonlinear optical characteristics of nanocomposites of ZnO-CdS, Litty Irimpan, V.P.N. Nampoori, P. Radhakrishnan,; Journal of Applied Physics, Volume 103, Issue 9, pp. 094914-8 (2008).
10. Raman spectra of polymethyl methacrylate optical fibres excited by a 532 nm diode pumped solid state laser, K. J. Thomas, M. Sheeba, V.P.N Nampoori, C P G Vallabhan and P Radhakrishnan,; J. Opt. A: Pure Appl. Opt. 10 (2008) 055303 (5pp) doi:10.1088/1464-4258/10/5/055303
11. Side illumination fluorescence emission characteristics from a dye doped polymer optical fiber under two-photon excitation, M. Sheeba, M. Rajesh, S. Mathew, V.P.N. Nampoori, C.P.G. Vallabhan and P. Radhakrishnan, Applied Optics, Vol. 47, Issue 11, pp. 1913-1921 doi:10.1364/AO.47.001913
12. Excitation wavelength dependence of energy transfer in dye mixture doped polymer optical fibre performs, M. Kailasnath, Nishant Kumar, V.P.N. Nampoori, C.P.G. Vallabhan and P. Radhakrishnan, Journal of Photochemistry and Photobiology A: Chemistry. Volume 199, Issues 2-3, 25 September 2008, Pages 236-241
13. Nonlinear optical characteristics of nanocomposites of ZnO-TiO₂-SiO₂, Litty Irimpan, Bindu Krishnan, V.P.N. Nampoori and P. Radhakrishnan, Optical Materials, Volume 31, Issue 2, October-December 2008, Pages 361-365
14. Linear and nonlinear optical characteristics of ZnO-SiO₂ nanocomposites, Litty Irimpan, Bindu Krishnan, V. P. N. Nampoori, and P. Radhakrishnan, Applied Optics, Vol. 47, Issue 24, pp. 4345-4351 doi:10.1364/AO.47.004345
15. Visible luminescence mechanism in nano ZnO under weak confinement regime, Litty Irimpan, Bindu Krishnan, V. P. N. Nampoori, and P. Radhakrishnan, J. Appl. Phys. 104, 113112 (2008); DOI:10.1063/1.3032897
16. Photoluminescence studies on rare earth titanates prepared by self-propagating high temperature synthesis method, Lyjo K. Joseph, K.R. Dayas, Soniya Damodar, Bindu Krishnan, K. Krishnankutty, V.P.N. Nampoori and P. Radhakrishnan, Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy. Volume 71, Issue 4, 15 December 2008, Pages 1281-1285
17. Photoacoustic thermal characterization of Al₂O₃-Ag ceramic nanocomposites, Sajan D. George, Aji A. Anappara, P.R.S. Warriar, K.G.K. Warriar, P. Radhakrishnan, V.P.N. Nampoori, C.P.G. Vallabhan, Materials Chemistry and Physics. Volume 111, Issue 1, 15 September 2008, Pages 38-41
18. Luminescence tuning and enhanced nonlinear optical properties of nanocomposites of ZnO-TiO₂, Litty Irimpan, Bindu Krishnan, V.P.N. Nampoori and P. Radhakrishnan, Journal of Colloid and Interface Science, Volume 324, Issues 1-2, August 2008, Pages 99-104
19. Identification of spectral lines of elements using artificial neural networks, M. Saritha and V.P.N. Nampoori, Microchemical Journal, Article in Press, Corrected Proof



20. Fabrication and characterization of dye mixture doped polymer optical fiber as a broad wavelength optical amplifier, M. Sheeba, M. Rajesh, V.P.N. Nampoori, and P. Radhakrishnan, Applied Optics, Vol. 47, Issue 11, pp. 1907-1912 doi:10.1364/AO.47.001907
21. Backscattering of laser light from colloidal silica, L. Irimpan, V. J. Dann, B. Krishnan, A. Deepthy, V.P.N. Nampoori and P. Radhakrishnan, Laser Physics, Volume 18(7), July 2008, pp. 882-885.
22. A comparative study of energy transfer in dye mixtures in monomer and polymer matrices under pulsed laser excitation, M. Kailasnath, P.R. John, P. Radhakrishnan, V.P.N. Nampoori and C.P.G. Vallabhan, Journal of Photochemistry and Photobiology A: Chemistry Volume 195, Issue 1, 5 March 2008, Pages 135-143
23. Fluorescence characterization and gain studies on a dye-doped graded index polymer optical-fiber perform, M. Kailasnath, T.S. Sreejaya, Rajesh Kumar, C.P.G. Vallabhan, V.P.N. Nampoori and P. Radhakrishnan, Optics & Laser Technology Volume 40, Issue 5, July 2008, Pages 687-691
24. Effect of annealing on the spectral and nonlinear optical characteristics of thin films of nano ZnO, Litty Irimpan, D.Ambika, V. Kumar, V.P.N Nampoori and P. Radhakrishnan, Journal of Applied Physics, Volume 104, Issue 3, August 2008, pp 033118
25. Nonlinear optical characteristics of self-assembled films of ZnO, Litty Irimpan, A. Deepthy, Bindu Krishnan, V.P.N. Nampoori and P. Radhakrishnan, Applied Physics B: Lasers and Optics, Volume 90, March 2008, pages 547-556
26. Spectral and nonlinear optical characteristics of nanocomposites of ZnO-Ag, Litty Irimpan, V.P.N. Nampoori and P. Radhakrishnan, Chemical Physics Letters Vol 445, 10 april 2008 ,pp 265-269.
27. Enhanced luminescence and nonlinear optical properties of nanocomposites of ZnO-Cu ,Litty Irimpan, V.P.N Nampoori and P. Radhakrishnan, Journal of Materials Research, Volume 23, Issue 11, Novemeber 2008, pp 2836-2845
28. Synchronization and control of chaos in coupled chaotic multimode Nd:YAG lasers, M.R. Parvathi, Bindu M. Krishna, S. Rajesh, M.P. John and V.M. Nandakumaran, Physics Letters A Volume 373, Issue 1, 22 December 2008, Pages 96-101
29. Comparative Performance of Two Fiber Optic Ammonia Sensors Employing Different Sensing Materials, Jinesh Mathew, V.V. Mahesh and P. Radhakrishnan, Sensors & Transducers Journal, Vol. 95, Issue 8, August 2008, pp. 65-71
30. Synthesis and nonlinear optical studies of nano ZnO colloids, Bindu Krishnan, Litty Irimpan, V. P. N. Nampoori and V. Kumar, Physica E, Volume 40, Issue 8, June 2008, pp 2787-2790
31. Effect of self assembly on the nonlinear optical characteristics of ZnO thin films, Litty Irimpan, A. Deepthy, Bindu Krishnan, L.M. Kukreja, V.P.N. Nampoori and P. Radhakrishnan, Optics Communications Vol 281 , 15 may 2008, pages 2938 - 2943.

b. Books : NIL



13. Participation in Seminar/Conference/Refresher Courses etc. by Faculty/Students:

Name of Participant	Name of Seminar/Conference Workshop	Role
Dr.P.Radhakrishnan	International Conference on Photonics	Paper presentation
Dr.V.P.N.Nampoori	" Photonics 2008" IIT Delhi	
Shri.Mathew S.	December 2008	
Shri.Sudesh K.		

14. Awards/Honours/Fellowships etc. received" : NIL

15. Sponsored Research Projects : NIL

16. Research Programmes and Activities:

Sl.No.	Problem/Topic	Investigator(s)
1.	Fiber optics sensors, Biophotonics	Dr.P.Radhakrishnan
2.	Optoelectronics, Fiber Optics	Dr.C.P.Girijavallabhan
3.	Nonlinear Optics, Biophotonics	Dr.V.P.N.Nampoori
4.	Nonlinear dynamics	Dr.V.M.Nandakumaran
5.	Microwave Photonics	Dr.P.Mohanan
6.	Laser induced thin film deposition	Dr.M.Jayaraj
7.	Photo induced effects on chalcogenide glasses	Dr.Sheenu Thomas

17. Seminar/Conference/Workshop/Refresher Courses conducted by the Department:

Sl.No.	Title	Duration	Coordinator	Funding Agency
1.	Indo-UK Workshop on Fiber Optics, Photonics and Bioinstrumentation	2-5 September 2008	ISP-CELOS in collaboration with City University London	UGC
2.	Raman Day Programme	7 November 2008	CELOS	"
3.	Optics Fair	28-29 November 2008	CELOS	"
4.	Annual Photonics Workshop 2009 (APW 2009) National Workshop on Nanophotonics	27-28 February 2009	ISP-CELOS	"

20. Consultancy Work : NIL



DEPARTMENT OF PHYSICAL EDUCATION

CUSAT INTER - COLLEGIATE ATHLETIC MEET 2008 - 09

The Cusat Inter collegiate Athletic Meet 2008-09' was held from 27th to 28th February 2009. The items included for the Athletic Meet were 50m, 100m, 200m, 400m, 800m, 1500m, 5000 Road race, Long Jump, High Jump, Triple Jump, Pole Vault, Short-put, Javelin, Discus, 4 x 100 relay and 4 x 400 relay. The participants were from almost all the recognized colleges under Cusat. The overall championship in the Athletic Meet went to School of Engineering, Cusat. The individual championship for men shared by Mr. Bineeth Prem Bhaskaran of Kunjali Marakar School of Marine Engineering, Cusat and Mr. Sabin of Model Engineering College and that of woman by Ms. Susan George of School of Legal Studies, Cusat.

South Zone Inter University Badminton : Five students participated at Kuvempu University from 25th to 28th October 2008.

All India Inter University Athletic Meet : Four students participated in the All India Inter University Athletic Meet 2008-09 organized by M.G. University at Ernakulam Maharaja's Ground from 20th to 24th December 2008.

Best Physique : Anoop Raj S.R. (Category 65 Kg) of M.G. College, Trivandrum won Bronze in all India Inter University Boxing competition held at Andhar University, Visakapattanam on 24th February 2009.

CUSAT INTER COLLEGIATE TOURNAMENTS 2008-09

The Cusat Inter Collegiate Tournaments 2008-09 was held from 5th to 25th February 2009 in the Cusat main Campus. Apart from students from Departments / Schools / SOE / CUCEK of Cusat, there were 25 recognized colleges under Cusat participated in the tournament. The various items for the tournaments were Badminton, Throw Ball, Foot Ball, Basket Ball, Volley Ball, Table Tennis and Cricket.

Details of Winners

Sl.No.	Item	Winner	Runner
1.	Badminton (M)	SOE	Cusat
2.	Badminton (W)	MEC	SOE
3.	Throw Ball (W)	SOE	COE, Munnar
4.	Football	SOE	KMSME, Cusat
5.	Basket Ball	SOE	MEC
6.	Volley Ball	COE, Thalassery	MEC
7.	Cricket	Rest of Cusat	CUCEK
8.	Table Tennis (M)	SOE	MEC
9.	Table Tennis (W)	MEC	Cusat

The overall Championship for Tournament went to SOE.



DEPARTMENT OF STUDENTS WELFARE

CUSAT INTER - COLLEGIATE ATHLETIC MEET 2008-09

The CUSAT Inter-collegiate Athletic Meet 2008-'09 was held from 27th to 28th February 2009. The items included for the Athletic Meet were 50m, 100m, 200m, 400m, 800m, 1500m, 5000 Road race, Long Jump, High Jump, Triple Jump, Pole Vault, Shot-put, Javelin, Discus, 4x100 relay and 4x400 relay. The participants were from almost all the recognised colleges under CUSAT. The overall championship in the Athletic Meet went to School of Engineering, CUSAT. The individual championship for men shared by Mr. Bineeth Prem Bhaskaran of Kunjali Marakar School of Marine Engineering, CUSAT and Mr. Sabin of Model Engineering College, and that of women by Ms. Susan George of School of Legal Studies, CUSAT.

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Details of Winners

Sl.No.	Item	Winner	Runner
1	Badminton (M)	SOE	CUSAT
2	Badminton (W)	MEC	SOE
3	Throw Ball (W)	SOE	COE, Munnar
4	Football	SOE	KMSME, CUSAT
5	Basket Ball	SOE	MEC
6	Volley Ball	COE, Thalassery	MEC
7	Cricket	Rest of CUSAT	CUCEK
8	Table Tennis (M)	SOE	MEC
9	Table Tennis (W)	MEC	CUSAT

The overall Championship for Tournament went to SOE.



DEPARTMENT OF STUDENTS WELFARE

SOUTH ZONE INTER UNIVERSITY YOUTH FESTIVAL – 2008

A team of 30 students from CUSAT participated in the South Zone Inter-university Youth Festival 2008 held at University of Calicut from 10th to 14th December, 2008. The team participated in Drama, Skit, Mime, Folk Orchestra, Poster painting, Installation, Quiz, Rangoli, Western group and Western Solo. We got second prize for Drama (One Act Play) and Installation, and third prize for poster painting. The overall position of CUSAT is 10th among the 31 universities participated. The team was accompanied by Dr.D.Mavoothu, Director of Students Welfare and Mr.Sadanandan.K.M., Section Officer, Typing Pool, Administrative Office, CUSAT.

INTER-UNIVERSITY NATIONAL YOUTH FESTIVAL 2008-09

A team of 22 students participated in the 24th Inter-university National Youth Festival held at Vidyasagar University, Midnapore, from 19th to 23rd January 2009 to compete in Drama and Installation. The team secured 4th position in the Drama. The CUSAT team was accompanied by Dr.Reji Srinivas, Lecturer, Department of Marine Geology and Mr.T.Krishnakumar, Section Officer, Registrar Office, CUSAT.

ARTS FESTIVAL “RAGAM – 09” AT NIT, CALICUT

A team of 25 students from CUSAT participated in the popular Arts Festival of South Indian Campuses hosted by National Institute of Technology, Calicut, from 25th to 28th March 2009. The team participated in Mime, Skit, Tableau, Street Play, Group Dance, Fine Arts and Musical events. The team was accompanied by Mr. Ranjan, Lecturer, School of Engineering, CUSAT.



PRIZES / AWARDS / MEDALS

Thirty-Six Merit Awards / Memorial Prizes instituted in the University in commemoration of important personalities provide encouragement / financial support to eligible candidates:

Sl. No.	Name of Endowment Amount	Corpus Award	Amount of which awarded	Programme for	Criteria of Award
1	ABS India Merit Awards	30,000/-	(400,500,500, 600,1000)	B.Tech (NA & SB)	Meritorious students in the I, II, V, VII & VIII Semesters of the B.Tech. Degree Programme in NA & SB
2	Antony James Memorial Scholarship	5,000/-	650	M.B.A. (F.T.)	Awarded to the student who secure the highest mark added together in the papers of Organizational Behaviour I & II at the M.B.A. Programme.
3	Antony James Prize	3,500/-	Interest	M.B.A. (F.T.)	Awarded to the student who secure the First Rank in the M.B.A. Degree full-time Programme.
4	Arpan Banerjee Endowment	1,000/-	1,000/- and a Silver Medal	Dept. of Ship Technology	All round, meritorious student of B.Tech Naval Architecture and Ship Building assessed by the academic performance in all semesters with extra curricular activities.



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Sl. No.	Name of Endowment Amount	Corpus Award	Amount of which awarded	Programme for	Criteria of Award
5	D. Sunil Memorial Prize	7,500/-	750/-	Physics Quiz	Award to a winner in a Physics Quiz conducted each year for the M.Sc. student of the Department of Physics
6	Dr. Justice T. Kochuthomman Prize	3,000/-	Interest	L.L.M. (Maritime Law)	Awarded to the best outgoing student in Maritime Law.
7	Dr. L.M. Singivi Endowment	11,258/-	Citation	Multi-disciplinary in nature	Annual Essay competition on Endowment, open to teachers of any University, College or Academic or Research Institute and doctoral or post-graduate scholars.
8	Dr. N.K. Panicker Memorial Prize	3,000/-	Interest	M.Sc. (Meteorology)	Awarded to the best student passing out of the M.Sc. programme in Metrology adjudged by the total marks in all semesters added together.
9	Dr. S. Lakshmanan Endowment	10,000/-	1,000/-	M.Sc (Marine Geology)	Students who secure First Rank in the II year M.Sc. Degree Examination in Marine Geology Division in every year.



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Sl. No.	Name of Endowment Amount	Corpus Award	Amount of which awarded	Programme for	Criteria of Award
10	Dr. Terry Adams Prize	2,500/-	2,500/-	-	-
11	K.A. Damodara Menon Memorial Endowment	75,000/-	Interest	-	Oration
12	K.C. Menon Memorial Endowment	10,000/-	Interest	School of Legal Studies	Awarded to the First Rank holder in the L.L.M. Degree Examination
13	K.Kelappan Memorial Prize	10,000/-	Interest	M.A. Hindi	Student who secures the first rank in the M.A. Degree exam in Hindi every year.
14	Kanichai Thomas Jose Endowment	50,000/-	Interest	Department of Physics	First Rank holder of M.Sc. Physics
15	Kerala Management Association Scholarship	8,000/-	500/-	M.B.A. (F.T.)	Awarded to the student who secures the highest mark, not less than 60% during the first year M.B.A. (F.T.)
16	Lyka Olefin's Endowment	10,000/-	Interest	Dept. of Polymer Science & Rubber Technology	First Rank holder of B.Tech Polymer Science and Rubber Technology
17	M.M. Cherian Memorial Labour Law Prize	10,000/-	Interest	L.L.M. (Labour Law)	Student who secure the highest mark in the aggregate in the papers on labour law in the L.L.M. Degree Examination



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Sl. No.	Name of Endowment Amount	Corpus Award	Amount of which awarded	Programme for	Criteria of Award
18	Manjula Madhavan Memorial Endowment	25,000/-	Interest	M.Sc. (Hydro Chemistry)	Student who secures Second Rank in M.Sc. Hydrochemistry Examination.
19	N.C. John Memorial Award	8,000/-	Equal to the Interest accrued divided in the ratio 1:3	M.B.A. (P.T.) M.B.A. (F.T.) Scholarship	Awarded to the student who secures the highest mark at M.B.A. (P.T.) Degree Exam and Completes the programme within the minimum period prescribed. Awarded to the student who secures highest mark during the first year of M.B.A.
20	Prof. C.C. John Memorial Endowment Prize	10,001/-	1,000/-	M.Sc. (Marine Biology)	Awarded to the student who secures First Class and First Rank in aggregate in the M.Sc Degree Examination in Marine Biology at the First appearance.
21	Prof. C.P. Menon Memorial Endowment	50,000/-	Interest	Dept. of Physics	Popular Oration on a Scientific or technical topic.
22	Prof. C.T. Samuel Endowment	12,000/-	1,001/-	M.Sc. (Industrial Fisheries)	Student who secures First Rank in M.Sc. Industrial Fisheries.



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Sl. No.	Name of Endowment Amount	Corpus Award	Amount of which awarded	Programme for	Criteria of Award
23	Prof. C.V. Kurian Endowment Prize	10,000/-	Interest	M.Sc. (Marine Biology, Marine Geology, Meteorology, Oceanography)	First Rank holder of the M.Sc Degree Exam in Marine Biology Meteorology, Marine Geology and Oceanography.
24	Prof. (Dr.) M.V. Pylee Endowment	10,00,000/-	20,00,000/-	Distinguished academician	As adjudged by an expert panel
25	Prof. (Dr.) P.N. Krishnan Nambisan Memorial Prize	25,000/-	2,000/-	M.Sc. (Hydro Chemistry)	Student who secures First Rank in M.Sc. (Hydrochemistry) every year.
26	Prof. Joy George Endowment Prize	10,000/-	Interest	M.Sc Physics	Awarded to M.Sc. student of Department of Physics who secures the highest marks in the first year / first two semesters taken together.
27	Prof. P. Madhavan Pillai Gold Medal	30,000/-	Interest	M.Sc. (Applied Chemistry)	Student who secures First Rank in M.Sc. (Applied Chemistry)
28	Prof. K.Venkiteswaralu Shashtiabdapoorthy Prize.	3000/-	200/-	M.Sc. (Physics)	First Rank Holder at the M.Sc. Degree in Physics Exam. on the basis of overall results.
29	Prof. Wazir Hazzan Abdi Endowment Prize	27,000/-	Interest	M.Sc. (Maths, Statistics, OR and CA)	First Rank holder of the Final Examination of M.Sc. (Mathematics, Statistics, OR & CA)



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Sl. No.	Name of Endowment Amount	Corpus Award	Amount of which awarded	Programme for	Criteria of Award
30	R.V. Kelkar Memorial Prize	10,000/-	Interest	L.L.M. (Criminal Law)	Highest mark in L.L.M. (Criminal Law every year)
31	Sir Robert Bristow Endowment	10,000/-	1,000/-	B.Tech (Naval Architecture & Ship Building)	Awarded to the student who secures the First Rank at B.Tech Degree Exam. (NA & SB)
32	The Bommareddi Venkatari Reddy Memorial Prize	5,000/-	400/-	M.Sc. (Oceanography)	Best Student of M.Sc. (Oceanography) Class of Department of Physical Oceanography with First Class and First Rank in aggregate after passing all the examinations in full appearance.
33	V.N. Padmanabha Pillai Memorial Prize for Law	10,000/-	Interest	L.L.M.	Awarded to the student who secures first class and First Rank at the L.L.M. Degree Examination.
34	Dr. T.S. A. Padmanabhan Endowment Prize		500/-	M.Sc. (Maths / OR and CA)	Awarded to the First Rank holder of M.Sc. Maths and M.Sc. (OR and CA) Course at CUSAT.
35	Classic, 83 Endowment	1,50,000		B Tech PS&RT	Awarded to the First Rank holder / CGPA Topper of B Tech Course in PS&RT



SCHOLARSHIPS / FELLOWSHIPS

For the year 2008-09

I. Scholarship

Name	Funding Agency	Amount	No of existing Scholars/Fellows
1 University Merit Scholarship	University	Rs 1200/- p.a	42
2 M.Phil Scholarship	University	Rs 600/- per month for 10 months	49

II. Fellowship

Name	Funding Agency	Amount	No of existing Scholars/Fellows
1 University Junior Research Fellowship	University	1. Rs 5000/- per month for the first 2 years 2. Rs 6000/- per month for the next 1 1/2 years In both cases annual contingent grant of Rs 10000 is eligible	120
2 Post Doctoral Fellowship	University	Rs 10000/- per month for the academic year + Annual Contingent Grant of Rs 20000	7



CENTRE FOR RURAL DEVELOPMENT AND APPROPRIATE TECHNOLOGY (CRDAT)

Conceived as a center for development studies under CUSAT, the Centre for Rural Development and Appropriate Technology (CRDAT) is dedicated to the betterment of rural Kerala through academia-society interaction. The academic year 2008-09 has marked progress for the Centre for Rural Development and Appropriate Technology in a new direction.

CUSAT, drawing from its considerable expertise in applied research, has immense potential in the field of rural development planning which calls for inputs from science, technology and social science faculties. Taking cue from this understanding, the University has rightly initiated rural development project under the aegis of MHO programme culminating in the establishment of CRDAT. Under the present set-up, it should be possible for the Center to extend the sphere of its activities to address issues in industries connected with farming, fishing and forestry as well as numerous cottage industries in coir, bamboo, cashew and cotton textile sectors. The primary objective of rural development programme is to help rural businesses unite with the resources they need to grow and sustain. Certainly an important factor in this effort involves providing information and training to rural entrepreneurs. Ideally located in a research environment, The CRDAT aims to initiate and spearhead the process of modernizing traditional production systems and enhance their competitiveness faster than in the past.

The Center also holds high prospects for developing into a specialized department for rural developments studies. The UGC has acknowledged the importance of Rural Studies as a discipline in higher education in its policy documents and provides assistance to begin courses in the area. The Center may utilize its capacities at a later stage to start regular academic programmes – encompassing rural industrialization and entrepreneurship, natural resource management, rural development institutions and strategies etc – leading to masters or doctoral degree.

Formerly known as the School of Rural Development and Appropriate Technology, the CRDAT has revised its vision plan in tune with the need for dissemination of the benefits of research and innovation for generating economic opportunities and thereby empowering rural communities. The revised vision plan has been forwarded to all members of the advisory committee and is awaiting final approval. As per the document, an expansion plan is envisaged and the prime objectives are stated as follows:

1. To conduct research studies on the vitality of rural industries and other major income generating activities and formulate remedial measures for revitalizing backward sectors.
2. To organize seminars and discussions involving resource persons and policy makers for identifying and implementing suitable innovative technologies needed by workers and craftsmen of the villages.



3. To facilitate technical assistance and training programmes for supporting the growth and creation of rural businesses and cooperatives.
4. To act as a nodal agency to assist the state government and local administration to formulate rural development projects with the help of different funding agencies at state/national/international level.
5. To train professionals in the area of rural management by starting an interdisciplinary course, leveraging on the expertise of the technical and social science schools in CUSAT.

Activities of the Centre

- The CRDAT organized a one-day seminar in collaboration with Sevashram (NGO) on **'Wealth from Waste: Bio Remediation and Rural Electrification' (22-10-2005)**. The seminar explored possibilities of developing technically feasible and financially viable waste disposal systems as well as prospects of manufacturing value added products from waste materials. The discussion invoked creative response from all participants, and the Center is looking forward to involve in further joint efforts in this area.
- CRDAT has worked with the Kerala State Planning Board on prioritizing the issues in the resource-based industries in the state. The policy prescriptions submitted by the Center was included in the **Task Force on Rural Poverty Elimination and Resource Based Industries (November 2005)** session held at Thiruvananthapuram and also incorporated in the **Approach Paper on Handloom, Handicraft, Cashew and Bamboo Sub-sectors** by the Board. The Planning Board has also entrusted the Center for conducting a seminar on bamboo as part of the efforts of Kerala State Bamboo Mission to formulate revival strategies concerning bamboo sector.
- CRDAT in collaboration with the Information Bureau, a Cochin based NGO, has coordinated several discussion panels with various Panchayaths in Kerala pertaining to the income generation aspects and development schemes for the betterment of rural sectors.
- CRDAT undertook a study in collaboration with District Rural Development Agency (DRDA) titled **"Market Survey and Feasibility Study for Micro Enterprises under the SGSY Scheme in Ernakulam District"**.
- Organized a seminar on **"Appropriate Technology for Sustainable Rural Development"**. The seminar articulated the possibilities of sustainable rural development through application of scientific and technological knowledge. Major areas covered are:-
 - Rural Electrification
 - Rural Housing
 - Resource based industries
 - Waste management
- Organized a two day national seminar on **"Decentralised Waste Management"** in collaboration with Centre for Environment and Waste management (CEWM) and Local Self Government Department, Govt. of Kerala. The seminar inculcates an awareness



programme to local administration and people by providing information on waste management and to understand the problem. It also brings to focus the various aspects of infrastructure requirement and social dimensions could be effectively integrated to evolve workable and sustainable solutions. Along with the seminar, CRDAT also conducted an exhibition along with technical sessions associated with waste management. The overall participation comes about 600 participants both from Panchayaths and experts from various institutions. Themes presented are :

- Municipal solid waste management
- Industrial waste management
- Bio-medical waste management
- Fishery and slaughter house and waste processing
- Community based sanitation and decentralized option for waste water treatment
- At source treatment of organic waste
- Legal aspect of environment and waste management

CRDAT in collaboration with Centre for Environment and Waste management (CEWM) developed a new cost effective technology for the solid waste disposal for the households and other sectors.

Other Initiatives

The CRDAT has submitted development study/project proposals to various government agencies including the Kerala State Planning Board and Ernakulam District Rural Development Agency. The major project completed so far:

- Formulation of Special Projects for Skill Development of Rural Youths Under SGSY
- Strengthening NGO capacity to improving the living conditions of the poor in Kuttanadu, Kerala - study undertaken with Tillburg University Assistance
- Micro credit and Women Empowerment: *The Role of SHGs* submitted to the National Commission for Women.
- "Effects of Reforms in Kerala's Public Distribution System on Food Security and Poverty" under the Ministry of Food and Civil Supplies, Govt of Kerala.

Major Research Projects

Completed:-

- **"Dynamics and Institutions in Community-Based Fisheries Resources Management: A sustainable Development Option - A Study of Coastal Kerala"** funded by ICSSR, New Delhi. The aim of the project is to identify the issues and dynamics emerging in community based fisheries resource management and its possible impact on the sustainability of resources so as to benefit future policy frames.



The project focuses on:-

- Identifying potential stakeholders
- Fisherman's income patterns
- Local livelihood
- Formal and informal institutions in fisheries resource
- Sustainability of fisheries resources
- Organizational dynamics
- Gender sensitization

A Project Director and Two Research officers worked in the project.

On-going:-

- **“Community Based Ecotourism in a Globalised Economy: A Sustainable Development Option for Kerala”** granted by University Grants Commission, New Delhi. The object of the project is to explore the economic potential of community based eco-tourism activities and its impact on the sustainable economic development of Kerala. The study also aims at suggesting appropriate management policies for sustainable tourism.

The focused area of the project:-

- To evaluate eco-tourism linkages.
- Determine societal value of eco-tourism
- Identify community values
- Local and tribal communities in eco-tourism
- Ecological sustainability
- Sustainability of communities

Along with Principle Investigator, a Project Fellow is also working in the project.

Major Project in Pipeline

- National agricultural innovation project **“Jeewaiswarya -Integrated Development of Farmers' Potential (IDFP)”** in collaboration with Sevashram (NGO-Registered Charitable Society). The focus of the project is to develop a model farm having agricultural and allied activities, using eco-friendly and sustainable methods as far as possible; Engage in activities aimed at the integrated human development (social, cultural, moral and economic); Actualize the ideal of a sustainable life community at the micro level so that it could be projected for emulation at macro levels; Assist the members and their families to build up and sustain an ideal sustainable life community through developing their own potentials, engaging themselves in agricultural and allied activities.



The Center is also communicating with agencies that can provide with appropriate technologies and resources for upgradation in selected sectors. The Advisory Committee for CRDAT identified several such sectors, which need to be improved with application of advanced technology. Some of the priority sectors are:

- (i) Khadi, Spinning Mills and Sprinkle Chakra – Experience from Tamil Nadu shows that even unskilled laborers can successfully utilize systems like power sprinkle weaving.
- (ii) Food processing
- (iii) Winding machine and clay products
- (iv) Coir industry
- (v) Cost effective methods for rain water harvesting and water purification
- (vi) Waste water management, and
- (vii) Low cost rural housing and construction techniques.

Other avenues for the Center in the immediate future are (i) acting as advisory to local self-governments in matters of rural development and employment schemes like SGSY, (ii) similar consultancy services to Self Help Groups (SHG) and NGOs and (iii) conducting studies on livelihood issues of tribal and backward communities.

Also frontier areas of research can be undertaken in the center namely

- Rural Social Development
- Economics and Management of Natural Resources
- Entrepreneurship among the Rural People
- Rural Enterprise Management and Development
- Rural Resources and the Environment



COCHIN UNIVERSITY UNION

It is the University Union Office, under the guidance of Honorary Treasurer that co-ordinates and maintains the Election to the University Union. As soon as the University Order appointing Chief Returning Officer is released the Election process gain its momentum. Dr. Sasidharan was the Chief Returning Officer for 08-09. The Heads of the Departments were the Returning Officers for the respective constituencies coming under them. Each and every semester of the department is taken as a constituency except the part time and evening batches. Full time research scholars were considered under two constituencies and they would elect two representatives to the University Union. The preparation of constituency wise Electoral roll was done by University Union Office strictly according to the University and Supreme Court directions in this regard. Students who lacked required percentage of attendance and had academic arrears were not allowed to contest the Election but had the right to vote. Nomination papers from more candidates than that required to fill the vacancies of the respective constituencies were received. Returning Officers had made arrangements at respective Departments for Election through Ballot where more valid nominations were received. The Election to the constituency of Research Scholars were done at the University Union Office. After the free and fair election the elected members were

Patron : Dr. Gangan Prathap, Vice-Chancellor
Treasurer : Dr.K.Vanaja, Hon. Treasurer

The Cochin University Union assumed charge on 15.01.2009. The office bearers are as follows:

-
1. Chairperson : Asha. V.V., School of Legal Studies
 2. Vice-Chairman : Binoy. P., Ship Technology
 3. General Secretary : Jithin T.P., School of Engineering
 4. Secretary : Jithin. K., Dept.of Instrumentation
 5. Executive Members :
 - 1) Muhammed Shamil Salam, School of Engg.
 - 2) Anu.K., School of Legal Studies
 - 3) Dibu A.S., Department of Statistics
 - 4) Krishnanunni. A, CELOS
 - 5) Arun Das. E., School of Management Studies
-

Cochin University Union inaugural ceremony was on 11th March 2009 at SMS Auditorium. The function inaugurated by Sri.Resul Pookkutty.

Welfare Activities

Assisting the students for getting financial assistance from the Students Aid Fund and also reimbursement of Mess bill of SC/ST.OEC students and disbursing to them.



NSS Activities

Co-ordinator : **Dr.M.K.Muhammed Aslam**

The NSS units functioning under CUSAT are listed below.

1. CUSAT Main campus
 2. CUCEK
 3. Co-operative Medical College, Kalamassery
 4. Model Engineering College, Thrikkakkara
 5. Toc-H Institute of Science & Tech. Arakunnam
 6. College of Engineering, Cherthala
 7. College of Engineering, Chengannur
 8. College of Engineering, Karunagappally
 9. College of Engineering, Kottarakkara
 10. College of Engineering, Poonjar, Kottayam
 11. College of Engineering, Perumon, Kollam
 12. TKM Institute of Tech., Kollam
 13. College of Engineering., Attingal
 14. College of Engineering, Adoor
 15. College of Engineering, Thrikkarippur
 16. College of Engineering, Thalassery
 17. College of Engineering, Munnar
 18. College of Engineering, Kindangore
 19. College of Engineering, Kalloppa
 20. Co-operative Institute of Tech., Vadakara
-

Majority of the units under these colleges have organised various social service activities as part of their Independence Day, Gandhi Jayanthi Day, Kerala Piravi Day and Republic Day Celebrations.

Various orientation programmes on health, social and blood group detection and blood donation campus were conducted by the units. Campus cleaning and college beautification works were undertaken in most of the colleges during the academic year.



NATIONAL CENTRE FOR AQUATIC ANIMAL HEALTH

Estd :2000

National Centre for Aquatic Animal Health (formerly Centre for Fish Disease Diagnosis and Management) established on 18th January 2000 could improve our performance and increase the out put under three spheres of activity during the period 2008 - 09, such as Research and Development, Extension and Education. Motto of the Centre has been 'Relentless effort for the Protection of Health of Aquatic Animals and their Environment' and it continually endeavors to transfer the outputs of research directly to the end users, the aquarists. The research and development activities of the Centre use cutting edge technology to bring in novel innovations for the development of sustainable aquaculture in India. A unique feature of the Centre is its in-house production facility, the Aquaculture Health Products Division to meet the needs of the Indian industry. It is well equipped to conduct field trials of the research outputs, and ensures a consistent and continuous supply. The Aquaculture Extension Cell (AEC) is the link of the farmer to technology. Apart from this, we provide a platform for the interaction between farmers, scientists and industry.

The most spectacular development during the reporting period is the M. Tech programme in Marine Biotechnology initiated during 2008-09 academic year supported by the Department of Biotechnology, Government of India under the National Network programme in human resource development in Biotechnology. Six students joined as the first batch and two Faculty members were appointed exclusively for the programme.

1. Programme of study/Research

1. M.Tech. in Marine Biotechnology (Sponsored by DBT - 4 semesters)
2. Ph.D. Programme under the Faculties of Marine Sciences and Environmental Studies

2. Faculty Members:

Sl.No.	Name	Designation	Qualification	Specialization
1	Prof. I.S. Bright Singh	Professor & Coordinator	M.Sc., Ph.D.	Environmental (Marine) Microbiology & Biotechnology and Aquatic Animal Health
2.	Dr. Valsamma Joseph	Lecturer	M.Sc., Ph. D.	Marine Biotechnology
3.	Dr. Abdulaziz Anas	Lecturer	M.Sc. Ph. D Biotechnology	Marine and Nano
4.	Dr. A. Mohandas	Emeritus Professor	M.Sc. Ph. D.	Parasitology & Haematology

**3. Visiting Faculty:**

Sl.No.	Name	Designation	Qualification	Specialization
1	Dr. N. Nandini Menon	Principal Investigator (DST), Dept. of Marine Biology, Microbiology and Biochemistry, CUSAT.	M.Sc., Ph.D.	Marine Biology
2	Mr. Mohan Kandaswamy	Director, Oriental Aquamarine Pvt. Ltd., Coimbatore	MBA	Industry Management
3	Mr. S. Girishkumar	Assistant Manager, HMT Ltd., Kalamassery	MBA	Industry Management
4	Dr. Sunil K Mohammed	Principal Scientist, Central Marine Fisheries Research Institute, Kochi	M.Sc., Ph.D.	Molluscan Fisheries
5	Dr. P.C. Thomas	Principal Scientist, Central Marine Fisheries Research Institute, Kochi	M.Sc., Ph.D.	Animal Genetics and Breeding
6	Dr. K.C Majumdar	Scientist Centre for Cellular and Molecular Biology, Hyderabad	M.Sc., Ph.D	Molecular Biology
7	Mr. H. Krishna Iyer	Retd. Scientist, Central Institute of Fisheries Technology, Kochi	M.Sc	Biostatistics

4. Research Staff:

Dr. Valsamma Joseph, Principal Investigator, WOS project of Department of Science and Technology, Government of India. 31st March 2008 onwards for a period of three years

5. Research Scholars:

Sl. No	Name	Supporting Agency	Guide	Area of Research
1	Ms. Seena Jose	DBT	Prof. I.S. Bright Singh	Animal Tissue Culture
2	Renjith, K.	Wellcome Trust and CUSAT	Prof. I.S. Bright Singh	Microbiology
3	Mr. Sudheer N.S.	DBT	Prof. I.S. Bright Singh	Marine Biotechnology
4	Priyaja P	DBT	Prof. I.S. Bright Singh	Marine Biotechnology
5	Deepesh V.	ICAR	Dr. I.S. Bright Singh	Microbiology
6	Surekha mol I.S.	CUSAT	Dr. I.S. Bright Singh	Environmental Biotechnology



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7	Ms. Vrinda S	DBT		Marine Biotechnology
8	K.S. Sunish	UGC		Marine Biotechnology
9	Gigi Paulose	UGC		Marine Biotechnology
10	B. Sreelakshmi	CUSAT and UGC	Dr. I.S. Bright Singh	Environmental Biotechnology
11	Charles Thomas K.	CUSAT	Dr. I.S. Bright Singh & Dr. K.G. George	Environmental Biotechnology
12	Divya Jose	CUSAT	Dr. A. Mohandas & Dr. I.S. Bright Singh	Environmental Biotechnology
13	Haseeb M.	DBT and DOD	Dr. I.S. Bright Singh	Microbiology
14	Rose Mary Jose	NCAAH	Dr. I.S. Bright Singh	Microbiology
15	Sunitha Paulose	DBT	Dr. I.S. Bright Singh	Microbiology
16	Prem Gopinath	CUSAT	Dr. P. Natarajan & Dr. I.S. Bright Singh	Microbiology
17	Jayesh P.	DBT	Dr. I.S. Bright Singh	Microbiology
18	Riya George	DOD	Dr. Rob H. Reed & Dr. I.S. Bright Singh	Microbiology
19	Ammu Thomas	DOD	Dr. Rob H. Reed & Dr. I.S. Bright Singh	Microbiology
20	Archana K	DBT	Dr. Rosamma Philip & Dr. I.S. Bright Singh	Marine Biotechnology
21	Deepa G.D.	Full-Time	Dr. Sivanandan Achari & Dr. I.S. Bright Singh	Marine Biotechnology

6. Administrative Personnel

Sl.No.	Designation	No. of posts
1	Office Assistant (daily wages)	1
2	Sweeper-cum-Cleaner (daily wages)	1

7. Technical Personnel

Project Assistants: 6 (Temporary)

8. Students enrollment

Sl.No.	Programme of study	Men	Women	Total
1	M.Tech. Marine Biotechnology	2	4	6
2	Ph.D.	8	13	21

9. Research facilities

- (1) Animal tissue culture
- (2) Immunodiagnosics



- (3) Molecular diagnostics
- (4) Virology
- (5) Bioprocess and fermentation
- (6) Bacteriology
- (7) Marine Biotechnology
- (8) Aquatic animal health assessment
- (9) Aquaculture medicine production unit
- (10) Aquatic animal bioassay unit
- (11) Environmental chemical analyses

10. Distinguished Visitors:

Sl. No.	Name	Affiliation	Remarks
1.	Dr. Subba Rao V. Durvasula	12 The Horseshoe, Dartmouth, Nova Scotia, Canada B2Y 4E5	Discussions on possible collaborations
2.	Dr. Jonathan Leder	Novozymes Biologicals, Salem, VA, USA	Discussions on possible collaborations
3.	Dr. Pornlerd	Novozymes Biologicals, Asia-Apcific	Discussions on possible collaborations
4	Dr. Sena S De Silva	Secretary General, Network of Aquaculture Centres in Asia Pacific, Thailand	Visited the laboratory to discuss on activities as regional resource centre of NACA
5	Dr. Alex Polas	OFI, Netherlands	From Novozyme for business discussion
6	Dr. Jan Rombout	Wageningen University, Netherlands	Visited in connection with the implementation of Indo - Norway project
6	Dr. Kiron Viswanath	Bodo University, Cllege, Norway	Visited in connection with the implementation of Indo - Norway project
7	Julie Edgar	Northumbria University, UK	Visited in connection with developing collaborative research projects with Northumbria University

11. Ph.D. awarded:

Sl.No.	Title of thesis	Research Scholar	Supervising Guide
1	Development of nitrifying and photosynthetic sulphur bacteria based bioaugmentation systems for the bioremediation of ammonia and hydrogen sulphide in shrimp culture	Manju. N.J.	Prof. I.S. Bright Singh



- 2 Nitrifying Bioreactors Integrated into Shrimp and Prawn Hatchery Systems: Molecular Characterization of the Nitrifying Consortia, Reactor Kinetics, Modeling and Validation Rejish Kumar VJ Prof. I.S. Bright Singh

12 Ph.D. thesis submitted

Sl.No.	Title of thesis	Research Scholar	Supervising Guide
1	<i>Aeromonas</i> associated with fresh water ornamental fish culture system: characterization, pathogenicity and management	Sreedharan K	Prof. I.S. Bright Singh

13. Publications:

(a) Papers

Peer Reviewed Journals

1. Manjusha K., Divya Jose, Seena Jose Priyaja .P. Sreelakshmi., Saramma A.V. **Singh ISB** (2009) Purification and characterization of alkaline protease from a non-toxicogenic environmental isolate vibrio V26. Process biochemistry (Accepted, Online first). **Impact Factor: 2.3**
2. Manjusha. M., Resmy Varghese, Rosamma Philip , A. Mohandas, **I.S. Bright Singh** Pathological changes in *Fenneropenaeus indicus* experimentally infected with white spot virus and virus morphogenesis. Journal of Invertebrate Pathology (Accepted, Online first) **Impact Factor: 1.4**
3. Manju NJ., Deepesh V, Achuthan C, Philip, R, **Singh ISB** (2009) Nitrifying bacterial consortia immobilized on wood particles for bioremediation in shrimp culture systems. Aquaculture (In Press) **Impact Factor: 1.73**
4. Abdulaziz Anas, Douglas W Lowman, David L Williams, Stewart Millen, Srinivas Somnath Pai, Thavarool Puthiyedathu Sajeevan, Rosamma Philip, **I. S. Bright Singh** (2009) Alkali insoluble glucan extracted from *Acremonium diospyri* is a more potent immunostimulant in the Indian White Shrimp, *Fenneropenaeus indicus* than alkali soluble glucan. Aquaculture Research (Accepted online) **Impact Factor:1.0**
5. Kumar VJR, Achuthan C, Manju NJ, Philip, R, **Singh ISB** (2008) Activated packed bed bioreactors (PBBR) for the rapid nitrification in brackish water hatchery systems. Journal of Industrial Microbiology and Biotechnology 36: 355-365.: **Impact Factor: 1.7**
6. Kumar VJR, Achuthan C, Manju NJ, Philip, R, **Singh ISB** (2008) A stringed bed suspended bioreactor (SBSBR) for in situ nitrification in penaeid and non-penaeid hatchery systems. Aquaculture International. **Impact Factor:1.0**
7. Kumar VJR, Achuthan C, Manju NJ, Philip, R, **Singh ISB** (2008) Mass production of nitrifying bacterial consortia for establishing instantaneous nitrification in saline recirculating aquaculture systems. World Journal of Microbiology and Biotechnology 25: 407-414. **Impact Factor:0.8**



8. Anas A, Philip R, **Singh ISB** (2008) Chitosan as a wall material for a microencapsulated delivery system for *Macrobrachium rosenbergii* (de Man) larvae. *Aquaculture Research* 39:885-890, **Impact Factor: 1.0**
GenBank Submissions: 50 entries

(b) Books :

Books (Edited)

1. Bright Singh. I.S., Joseph. V., Philip R., and Mohandas A, (Eds), 2007. *Aquaculture and Marine Biotechnology*. ISBN.81-900724-2-0
2. *Fisheries and Aquaculture: Strategic Outlook for Asia. Book of Abstracts, 8th Asian Fisheries Forum 2007*. Asian Fisheries Society, India. ISBN:81-85340-21-8

(d) Any other : NIL

14. Participation in Seminar/Conference/Refresher Courses etc. by the Faculty of Members / Students / Staff

Participant(s)	Programme	Role
Dr. Valsamma Joseph	Winter School on Metagenomics at Madurai Kamaraj University (2-15 th March 2009)	Participant

15. Awards/Honours/Fellowships etc. received:

Name of Awardee	Particulars
Dr. I.S. Bright Singh	Eminent Zoologist Gold Medal from Zoological Society of India

16. Sponsored Research Projects:

Sl.No.	Title and period	Funding agency	Amount in Lakhs	Investigator(s)
1.	Identification and removal of blocks on <i>in vitro</i> transformation and establishment of cell lines from <i>Penaeus monodon</i> (October 2007- September 2010)	Dept. of Biotechnology (DBT), New Delhi	31.76	Prof. I.S. Bright Singh
2.	Design modification & commercialization of nitrifying bioreactor technology for the establishment of organic recirculation prawn seed production system (Phase-I) (September 2007-August 2010)	Dept. of Biotechnology (DBT), New Delhi	10.37	Prof. I.S. Bright Singh
3.	Metagenomics approaches to evaluation of the diversity of nitrifying bacterial community in the sediments of zero water exchange system shrimp ponds (March 2008- February 2011)	Dept. of Science and Technology (DST), New Delhi	13.68	Dr. Valsamma Joseph



4. Expression of virulence of <i>Vibrio harveyi</i> in Organic Recirculation Prawn Seed Production System (ORPSPS) and its management (July 2007-June 2010)	UGC	9.276	Prof. I.S. Bright Singh
5. Development of anti-WSSV drugs from mangrove plants endemic to Indian coastal zone (October 2006 - September 2009)	Dept. of Biotechnology (DBT), New Delhi	37.45	Prof. I.S. Bright Singh
6. Nitrifying bioreactors integrated into prawn hatchery systems: Biofilm structure, population dynamics, and kinetic modeling (August 2006- July 2009)	Dept. of Science and Technology (DST), New Delhi	20.3242	Prof. I.S. Bright Singh
7. Programme support in marine biotechnology (April 2005- September 2008)	Dept. of Biotechnology (DBT), New Delhi	139.00	Prof. I.S. Bright Singh
8. Development and application of CMG family recombinant hormones, their antagonists and RNAi technique for induced maturation and spawning of <i>Penaeus monodon</i> . In collaboration with Central Institute of Brackishwater Aquaculture, Chennai & Dept. of Zoology, Calicut University, Calicut. Total cost: 1,38,31,000.00 (October 2005- September 2008)	Dept. of Biotechnology (DBT), New Delhi	66.03	Prof. I.S. Bright Singh

17. Research programmes and activities (2008-09)

Sl.No	Name	Guide	Area of Research
1	Ms. Seena Jose	Prof. I.S. Bright Singh	Shrimp Cell and Tissue Culture
2	Renjith, K.	Prof. I.S. Bright Singh	Solar photo-oxidative disinfection for generating low cost potable water from natural water sources
3	Mr. Sudheer N.S.	Prof. I.S. Bright Singh	Development of anti white spot syndrome virus preparations from marine and estuarine biota
4	Priyaja P	Prof. I.S. Bright Singh	Genomics of the species of <i>Pseudomonas</i> and <i>Micrococcus</i> antagonistic to vibrios
5	K.S. Sunish.		Marine <i>Streptomyces</i> as source of novel drugs to manage vibrios



6	Gigi Paulsoe	Dr. A. Mohandas & Dr. I.S. Bright Singh	Molecular and genomic basis of the response of <i>Fenneropenaeus indicus</i> to White spot syndrome virus vaccine
7	Deepesh V.	Dr. I.S. Bright Singh	Detritus Management in Shrimp Culture Systems
8	Vrinda S	Prof. I.S. Bright Singh	Development of CMG family recombinant hormone and antagonists for the maturation of <i>Penaeus monodon</i>
9	Surekha mol I.S.	Dr. I.S. Bright Singh	<i>Vibrio harveyi</i> phages in marine systems phylogenetic diversity and applications
10	B. Sreelakshmi	Dr. I.S. Bright Singh	Serological characterization and differentiation of <i>Vibrio alginolyticus</i> and <i>Vibrio harveyi</i> of Penaeid and Non-penaeid culture Systems
11	Charles Thomas K.	Dr. I.S. Bright Singh & Dr. K.G. George	Novel Bioplastics: Development of appropriate bioprocess technology, characterization and applications
12	Divya Jose	Dr. A. Mohandas & Dr. I.S. Bright Singh	Thermoalkalophilic proteases and liapses for detergents
13	Haseeb M.	Dr. I.S. Bright Singh	Bioremediation technology for zero water exchange shrimp culture system
14	Rose Mary Jose	Dr. I.S. Bright Singh	Unraveling the probiotic effect in shrimp larval rearing systems and its augmentation for enhanced larval survival and productivity
15	Sunitha Paulose	Dr. I.S. Bright Singh	Bioprocess Technology for large scale production of <i>Candida sake</i> as a single cell protein
16	Prem Gopinath	Dr. P. Natarajan & Dr. I.S. Bright Singh	Water borne Enteric viruses in and around Cochin
17	Jayesh P.	Dr. I.S. Bright Singh	Establishment of cell lines using ovarian tissue and embryonated eggs of <i>Penaeus monodon</i> as donor tissues
18	Archana K	Dr. Rosamma Philip & Dr. I.S. Bright Singh	Establishment of cell lines using lymphoid and haematopoietic tissues of <i>Penaeus monodon</i> as donor tissues
19	Riya George	Dr. Rob H. Reed & Dr. I.S. Bright Singh	<i>Bacillus</i> MCB 101 as detritus bioaugmentor in aquaculture system: Mode of action and functional genomics.
20	Ammu Thomas	Dr. Rob H. Reed & Dr. I.S. Bright Singh	Development of photosynthetic sulphur bacteria based bioremediation technology for aqua culture system for H ₂ S removal.



utilized. The schedule of the training programme was on October 20-24, 2008 at the conference hall of School of Marine Sciences, Cochin University of Science & Technology.

The extension activities of the Centre are supported by the following:

1. Mr. Anishmon, P.K	Project Associate (Farm)
2. Ms. Blessy Jose	Project Assistant (Microbiologist)
3. Mr. Biju N.J	Project Assistant (Farm)
4. Mr. Jaison Antony	Project Assistant (Farm) (Left the Centre)
5. Mr. Soman, A.L	Project Assistant (Office)
6. Ms. Surya Sugunan	Project Assistant (Chemistry/Microbiology)
7. Mr. Savin K.V	Project Assistant (Chemistry/ Field)

Besides, Research Scholars are also assigned with mini extension programmes within the purview of their research programmes

Continuing education programme: The Centre has organized several orientation programmes on zero water exchange sustainable shrimp culture and Diseases in Ornamental Fish Diseases.

22. Departmental Publications, if any: Nil

23. Any other achievements:

Commercialization of Nitrifying bioreactor technology could be accomplished through M/S Oriental Aquamarine Biotech India (P) Limited Coimbatore. This technology could win the prestigious Lockheed Martin India Innovation award for the best indigenous Technology and Silver Medal.
