

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202641066025 A

(19) INDIA

(22) Date of filing of Application :25/05/2026

(43) Publication Date : 12/06/2026

(54) Title of the invention : BIODEGRADABLE FOOD PACKAGING MATERIAL COMPRISING CELLULOSE NANOPAPER SUBSTRATE AND JACKFRUIT LATEX COATING AND PROCESS THEREOF

(51) International classification	:B65D65/46, C08L1/02, C08L19/02, C08L21/02, B82Y30/00, C08L101/16	(71) Name of Applicant : 1)Cochin University of Science and Technology (CUSAT) Address of Applicant :The Registrar, Cochin University of Science and Technology (CUSAT), Cochin University P.O., Cochin – 682022, Kerala, India (72) Name of Inventor : 1)GEORGE, Jinu Jacob 2)GROHENS, Yves 3)GOPAKUMAR, Deepu Ambika 4)POULOSE, Aiswarya 5)MATHEW, Ajith 6)RAVI, Varnya
(31) Priority Document No	:NA	
(32) Priority Date	:NA	
(33) Name of priority country	:NA	
(86) International Application No	:	
Filing Date	:01/01/1900	
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number	:NA	
Filing Date	:NA	
(62) Divisional to Application Number	:NA	
Filing Date	:NA	

(57) Abstract :

The present disclosure provides a biodegradable food packaging material comprising a cellulose nanopaper substrate and a jackfruit latex coating formed on a surface of the substrate by a thermal-induced phase separation technique. The coating is anchored to the substrate through hydrogen bonding and hydrophobic interactions, with a substrate-to-coating thickness ratio of about 8.5:1. The cellulose nanopaper comprises cellulose nanofibres and the latex coating includes hydroxyl- and carbonyl-containing compounds having particles in the range of about 35 nm to about 30 µm. The packaging material exhibits a water contact angle of at least 90 degrees and a water vapour transmission rate (WVTR) of about 161.891 g m⁻² 24 h⁻¹ and exhibits antibacterial activity against Gram-positive and Gram-negative bacteria while being non-toxic. The process for preparing the coated nanopaper is also disclosed.

No. of Pages : 30 No. of Claims : 10