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(54) Title of the invention : BIODEGRADABLE COMPOSITE PACKAGING FILM AND PROCESS THEREOF USING SODIUM ALGINATE, CHITOSAN, AND ALBIZIA LEBBECK EXTRACTS

(51) International classification	:A61K0036480000, C08J0005180000, C08L0029040000, B65D0065460000, C08L0067040000	(71) <b>Name of Applicant :</b> <b>1)Brainware University, Kolkata</b> Address of Applicant :398, Ramkrishnapur Rd, Near Jagadighata Market, Barasat, Kolkata, West Bengal 700125 ----- <b>Name of Applicant : NA</b> <b>Address of Applicant : NA</b>
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(57) Abstract :

[032] The present invention relates to a biodegradable composite packaging film and a method for its preparation using naturally derived materials—sodium alginate, chitosan, and aqueous extracts of *Albizia lebbeck*, an indigenous plant. The film is fabricated using a layer-by-layer casting technique wherein the first layer comprises sodium alginate and *Albizia lebbeck* extract with glycerol as a plasticizer, and the second layer comprises chitosan dissolved in acetic acid with polyvinyl alcohol. The resulting film demonstrates superior mechanical strength, flexibility, antimicrobial activity, and barrier properties. It is fully biodegradable under composting or soil conditions and decomposes without releasing harmful residues. This invention offers an eco-friendly, cost-effective, and scalable alternative to synthetic plastic packaging and is particularly suitable for applications in food packaging, agriculture, and medical disposables. Accompanied Drawing [FIGS. 1-2]

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