Patent Search

Invention Title	Biodegradable Plastics from Shrimp Shell-Derived Chitosan: A Sustainable Alternative to Petroleum-Based Plastics.
Publication Number	04/2025
Publication Date	24/01/2025
Publication Type	INA
Application Number	202541002118
Application Filing Date	09/01/2025
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	FOOD
Classification (IPC)	A23K0010260000, C08J0005180000, C08B0037080000, C08L0005080000, B65D0065460000

Inventor

Name	Address	Country
Golla Suri Babu	Associate Professor, Department of Electrical and Electronics Engineering, Vishnu Institute of Technology, Bhimavaram	India
P.Ram Prasad	Associate Professor, Department of Electrical and Electronics Engineering, Vishnu Institute of Technology, Bhimavaram	India

Applicant

Name	Address	Country	Nation
Vishnu Institute of Technology	Vishnupur, Bhimavaram, West Godavari, A.P-534202	India	India

Abstract:

This invention presents a method for synthesizing biodegradable plastic from chitosan derived from shrimp shell waste, addressing the need for sustainable alternat conventional petroleum-based plastics. With India's shrimp production projected to reach 1.4 million metric tonnes by 2025, shrimp shell waste offers a viable raw m producing chitosan. A systematic procedure for chitosan synthesis is proposed, involving chemical treatment and refinement of shrimp shells. The synthesized chitos using FTIR analysis and is suitable for manufacturing biodegradable products such as food packaging and single-use plastics, promoting environmental sustainability waste utilization.

Complete Specification

Description:The proposed chitosan is prepared by deproteinization of shrimp shells by using NaOH solution and then demineralized with 1% HCL solution at room temperature. The obtained sample was treated for deacetylation with 50% NaoH solution, then the dried sample is mixed with vinegar and wood flour , the final sol used to create the plastic packaging using moulds. , Claims:1. A biodegradable plastic material comprising chitosan derived from shrimp shell waste, providing friendly and sustainable alternative to crude-oil-based plastics, particularly for single-use applications.

2. A method for preparing chitosan from shrimp shell waste by deproteinization, demineralization and deacetylation.

3. The use of chitosan, derived through the described method, as a raw material for manufacturing biodegradable single-use plastic products, reducing environm pollution caused by conventional plastics.

4. A biodegradable plastic product derived from chitosan, which, upon prolonged exposure to water, dissolves, enhancing soil fertility and indirectly acting as a bi

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