

Wonder from waste: the chitosan story

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Abstract:

The proliferation and dumping of single-use non-compostable plastics is currently a very hot topic in environmental and political circles, particularly focusing on the impact of waste plastics on the marine environment.

Chitosan is the deacetylated form of chitin, the polysaccharide found in crustacean and insect shells. It is also found, to a lesser degree, in fungi. It is strong, durable, compostable, and has excellent antimicrobial properties, making it an ideal packaging material for food. Its antimicrobial properties suggest a host of other uses for chitosan in fields as diverse as medical devices and food additives. The current extraction process is chemically harsh and prohibitively expensive.

To address this issue, we have developed a novel extraction process that is able to significantly limit the environmental impact of the extraction/purification of chitin and its conversion to chitosan. Ultimately, we envisage a completely clean process with minimal waste can be introduced.