

**COMPARATIVE STUDY OF CHITIN AND CHITOSAN
IN ADSORPTION OF
HEAVY METALS IN SOLUTION**

**An Undergraduate Research
Presented to
The Biological Sciences Department
College of Science
De La Salle University-Dasmariñas**

The seal of De La Salle University-Dasmariñas is a circular emblem with a scalloped border. It features a central shield with a red triangle at the top, a white triangle at the bottom, and a blue triangle on the left. A green star is positioned above the shield, and a white book is below it. The shield is flanked by green laurel branches. The outer ring of the seal contains the text "AKLATANG ENILIO AGUIRRE" at the top, "RESOURCE CENTER" on the right, and "De La Salle University-Dasmariñas • Since 1977 • Dasmariñas, Cavite, Philippines" at the bottom.

**In Partial Fulfillment
of the Requirement for the Degree
Bachelor of Science in Biology
Major in Environmental Science**

**Annalyn R. Gabuna
Laurene Michelle B. Laig**

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ABSTRACT

Chitosan is a partially deacetylated polymer of N-acetyl glucosamine. It is essentially a natural, water-soluble, derivative of cellulose with unique properties. Prawn shells are a novel, renewable source of chitin and chitosan. Prawn shells are currently regarded as waste and so the raw material is relatively cheap. This study was conducted to assess the sorption properties of chitin and chitosan derived from prawn shells. Chitin and chitosan were extracted and assessed for heavy metal sorption and observable properties. Chitin showed a brown colored powder with poor sorption and soluble properties. While chitosan was odorless, had white colored powder and had significant sorption properties and soluble properties. The sorption capacity of chitin was low in comparison with the sampled chitosan. However, it should be possible to increase the sorption capacity of prawn shell chitin by undergoing it to the process of deacetylation.

