

## EXTRACTION AND CHARACTERIZATION OF CHITOSAN FROM SHRIMP SHELLS WITH REFERENCE TO WOUND HEALING

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Chitosan is a natural polymer obtained by alkaline deacetylation of chitin. It is biocompatible, and biodegradable. It is present in the exoskeleton of crustaceans and green algae. The chitosan was extracted from shrimp shells. The shells was bleached with ethanol followed by demineralization and deproteinization. To recover chitin, the sample was submerged in 12.5 M NaOH, cooled, and frozen for 24 hours. The deacetylation of the samples converts chitin into chitosan by the removal of N-acetyl group. The obtained chitosan was characterized using Fourier Transform Infrared spectroscopy (FTIR) and X-ray diffraction (XRD) and Scanning Electron Microscopy (SEM). Chitosan has a variety of promising pharmaceutical uses and is presently used in wound healing, antibacterial activity and drug delivery systems. The extracted chitosan was subjected to wound healing property using cell line discussed in the highlights of the study.

**Keywords:** Chitosan, Chitin, FTIR, XRD, SEM, Antibacterial activity, Wound healing.

## MALLEABLE GYRO FEEDER

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Over the past few decades, assistance technology for those who are functionally challenged has advanced. Parkinson's disease is the second most common prevalent neurodegenerative disease that affects the movement of control. For individuals with Parkinson's disorder or unintentional people, the typical eating process is regarded as tough. In this project, we hope to, Analyse how an Arduino microcontroller can be used to assist someone with poor motor skills while they are eating. In order to function in practical settings, a stabilizing spoon prototype was built. It was created as a supplement for persons who require help when they are eating. In order to solve this issue, a sensor containing gyroscopes and accelerometers was employed to track the direction and speed of the device's handle tilting. To make this possible, two servo motors were placed orthogonally to one another. The feeder was designed to keep its spoon bowl parallel to the ground in this direction. The Gyro feeder's performance during testing was promising but had certain drawbacks. Although many people with neuromuscular illnesses still retain sensibility and some power in their hands, they have difficulty moving their arms against gravity. This project's primary goal is to concentrate on the creation of a stabilizing spoon that can counteract unintentional tremors caused by patients. In order to help them with their feeding actions, a device is desired. For those who have controlled head and neck motions, there are commercially marketed feeders that are practical and affordable. We make the decision to help people and to complete