

**REMOVAL OF HEAVY METALS IN THE WASTE
WATER BY USING CRAB SHELLS**

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ABSTRACT

Aquatic resources pollution is a serious problem faced by the people all around the world. Development of technology and industrialization are the main reasons for increasing the pollution of water sources and drinking water. Out of many causes of water pollution, heavy metal contamination is gradually increased and become a main source of water pollution in the world. Mainly emission of solid discharge from industries, vehicle exhaustion metal from smelting and mining, and textile industry, use of pesticides and insecticides, disposal of industrial and municipal waste in agriculture, and excessive use of fertilizers are the main sources of contaminations. Seafood industry is now developing faster by supplying protein need of the people. Large amount of chitinous waste is generated from seafood processing factories and this waste can be used for chitin extraction. Crab shell is an abundant source of chitin and chitin can be applied as a water purifier. There are two main objectives of this study to identify a simple and low cost method for the removal of heavy metals in the waste water and add value to the crab shell waste and convert it into an extra source of income. Different sizes of chemically treated crab shell samples were used for the experiment in different time durations. Out of three sizes of crab shell particle sizes, highest results were shown by medium size particles and powder form. Lower result was shown by large particles. Chitin is a good adsorbent of heavy metal and can be used directly for the removal of heavy metals in the water. Then these disposal crab shells are good chitin source and successfully used as a water purifier.

Key words: Adsorption, Chitin, Heavy metal