



**A COMPREHENSIVE REVIEW ON BIOSORPTION AND BACTERIAL
BIOSORBENTS FOR HEAVY METAL REMOVAL FROM WASTEWATER**

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ABSTRACT

Biosorption can be an effective technique for the treatment of heavy metal ion bearing wastewater resulting from humans and industrial activities. Several gram positive and gram negative bacteria have the ability to remove the heavy metal ions and thereby making water contaminant free. It has been reported that attenuated bacterial biomass have greater biosorption capability than viable cells. With the onset of industrialization mankind has witnessed various environmental issues in the society. This industrialization has not only brought development and prosperity but eventually disturbed the ecosystem. One of the impacts is visible, in form of water pollution. In the present study heavy metal contamination of water bodies has been discussed. The conventional methods of treatment of heavy metal contamination includes chemical precipitation, chemical oxidation, ion exchange, membrane separation, reverse osmosis, electro dialysis etc. These methods are costly, energy intensive and often associated with generation of toxic byproducts. Thus, the biosorption has been investigated as a cost effective method of removal of heavy metals from wastewater. In the present study various low cost adsorbents have been reviewed as an abatement of heavy metal pollution from wastewater.

Keywords: Wastewater, Biosorption, Biosorbents, Toxicity, heavy metals.

1. INTRODUCTION

Heavy metal pollution has become one of the most serious environmental problems today. India is rich in water resources, having a

network of many rivers and vast alluvial basins to hold plenty of ground water. India is also blessed with snow-capped peaks in the