

Novel biomaterial: Synthesis and characterization for decontamination of metal from waste water

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Heavy metals are important member of dirty dozen club of pollutants encountered in waste water. The removal of heavy metals from water at point of use, entry and for co-water system is generally accomplished by methods such as electrochemical processes, membrane processes, ion exchange and reverse osmosis. The aforesaid methods have major disadvantages such as high energy requirements, incomplete metal removal and large quantity of toxic waste sludge that needs again safest disposal.

In recent perspectives, biomaterials have gained much importance for decontamination of water. Bioremediation involves the reduction of overall treatment cost through the application of agricultural residues which are particularly attractive as they lessen reliance on imported water treatment chemicals, negligible transportation requirements and capacity of reuse involving "Implementation of local environmental tactics to solve local environmental issues".

However, biomaterials have also been associated with drawbacks related to stability and less sorption of wide range of toxic metals, restricting their commercial use. Therefore, biosynthetic modifications to improve the binding capacity and stability of natural biomaterials have attracted the keen attention of scientific community.

With this aim in view, the present piece of work highlighted the efficacy of Azadirachta indica leaf powder [AILP] in the abatement of Cadmium, simultaneously increasing stability and regeneration cycle using synthetic modification graft copolymerization. Evidences in support of AILP have been given on the basis of FTIR and TGA. Resulting information can be utilized as less expensive, environment friendly method with enhanced sorption efficacy and environmental stability for removal of toxic metal from contaminated water particularly for rural and remote areas of the Country.

Biography

Pritee Goyal is doing Post Doctoral Studies from University of Delhi. I completed PhD in 2009 from Dayalbagh Educational Institute, Agra. I have written 1 book [Published by Springer] and 2 chapters [Taylor & Francis] & filed 2 patents and 10 papers in journal of repute. I have been honored with best paper presentation award in a National Conference and also been awarded SRF from CSIR. I was worked as Chemical Engineering Associate, Central Power Research Institute, Ministry of Power, Central Government of India, Noida and also have few months of teaching experience in a reputed engineering College.

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