

Removal of Heavy Metals from Wastewater by Using Wide Range of Low Cost Adsorbents: A Review

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Abstract: Adsorption Process are extensively used in wastewater treatment for heavy metal removal. The most widely used adsorbent is activated carbon giving the best of results but its high cost limits its use. It has a high cost of production and regeneration. As the world today faces a shortage of freshwater resources, it is inevitable to look for alternatives that lessen the burden on existing resources. Also, heavy metals are toxic even in trace concentration, so an environmentally safe method of their removal necessitated the requirement of low cost adsorbents. Adsorption is cost effective technique and gained recognition due to its minimum waste disposal advantage. This paper focus on the process of adsorption and the types of adsorbent available today. It also encompasses the low cost adsorbents ranging from agricultural waste to industrial waste explaining the adsorption reaction condition. The cost effectiveness, technical applicability and easy availability of raw material with low negative impact on the system are the precursors in selecting the adsorbents. The novelty of paper lies in covering a wide range of adsorbents with their efficiency in removal of heavy metals from waste water.

Keywords: Adsorption, Heavy metal, Activated carbon, Low cost adsorbents

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