

Chitosan- A New Natural Adsorber Material

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As a result of industrial activities and technological changes, a high and continuously increasing amount of heavy metals and heavy metal containing effluents are released into the environment by different industrial nations. These metals cannot be degraded. Furthermore, because of their toxicity, they are highly detrimental to the environment and human health. Chitosan flakes have been used as an efficient adsorber material for heavy metal ions as well as for anions. A series of adsorption experiments has been carried out in order to determine (i) the adsorption equilibrium, (ii) the adsorption capacity in dependence on initial heavy metal ion concentration, and (iii) the influence of the anion presented in solution for the adsorption capacity. Surface morphology of chitosan flakes before and after the adsorption process have been studied with SEM-EDX analysis in order to get a better understanding of the adsorption mechanism.