

ACTIVATED CARBON ADSORPTION: RECOVERY OF PRECIOUS METAL, NICKEL, FROM AQUEOUS WASTES

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Abstract

Activated Carbon Adsorption has in recent decades found extensive application in the treatment of wastewater, particularly to organic wastes where large concentrations of organics are likely to affect the ecosystem. In the present investigation, the adsorption of a precious metal such as Nickel present in aqueous systems, with and without use of carrier such as 8-Hydroxyquinoline, on various grades of as received activated carbons. This carrier improves the uptake of metal ions by Granular Activated Carbon (GAC). The effect of various physico-chemical parameters associated with both adsorbent and adsorbate on the adsorption rate and equilibria were investigated in batch experiments. The adsorption process agreed with the Langmuir and Freundlich models and also obeyed pseudo second order kinetics. Granular Activated Carbon holds a particular promise in the removal of metal ions for aqueous solutions.