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Removal of Nickel (II) from Aqueous Solution by adsorption onto Nano adsorbent prepared from Cucumis Melo peel

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Abstract : In the present study, attempt has been made to use Cucumis Melo peel for the preparation of activated carbon with a view to use it in the removal of Nickel (II) ion from aqueous solution. The air-dried chopped Cucumis Melo peels are carbonized by pyrolysis method using muffle furnace, prepared nano adsorbent using ball milling and characterized by the methods suggested by the Bureau of Indian Standard. The effect of initial pH, initial concentration of Nickel (II) ion solution and contact time for the adsorption of Nickel (II) ion onto CMAC are studied in a batch process mode. Result shows that pH 6 is the most suitable, while the maximum adsorbent capacity is at a dosage of 250 mg/L. The equilibrium data for the adsorption of Nickel (II) ion from aqueous solution onto CMAC are fitted to Langmuir, Freundlich and Temkin isotherm models and the model parameters are evaluated. The results showed that the equilibrium adsorption of CMAC is best described by Langmuir and Freundlich isotherm model.

Key words : Nickel (II) ion, Cucumis Melo, Nano Adsorbent, Activated Carbon.

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