International Journal of ChemTech Research
CODEN(USA): IJCRGG, ISSN: 0974-4290, ISSN(Online):2455-9555
Vol.11 No.03,pp111-122,2018

Adsorption of Cd(II) by Chemically Activated Pistachios Seed Shell and Commercially Activated Carbon from the aqueous solutions

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Abstract: In this investigation, the powder of pistachios seed shell carbon and commercially available carbon were used for the removal of Cd(II) from aqueous solutions. Pista seed shell carbon is a natural and eco friendly adsorbent. Pistachios seed shell carbon was prepared by charring with concentrated HCl and the carbon's characteristics such as moisture content, ash content, matter soluble in both water and acid, pH, decolourising power, iron content and ion exchange capacity were determined. The carbon is characterized by Scanning Electron Microscopy, Dispersive Energy of Spectroscopy (EDS), Fourier Transform-Infrared Spectroscopy (FT-IR) before and after adsorption. The experiments were performed in order to understand the kinetics of Cd (II) removal by PSSC and CAC. The results obtained indicate that PSSC is a very good adsorbent than CAC and it can be used for the separation of heavy metals from synthetic water.
Keywords: Adsorption, Pistachios seed shell, commercially available carbon, Isotherm, Desorption.

International Journal of ChemTech Research, 2018,11(03): 111-122

DOI :http://dx.doi.org/10.20902/IJCTR.2018.110339

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