Adsorption, kinetic and equilibrium studies of Cr (VI) by hazelnut shell activated carbon.

Authors
M Drouiche, H Lounici, N Mameri, DL Piron, M Kharroune, D Erhan, M Kobya, S Elif, T Ozkan, WP Gardiner, G Gettinby, I Guttman, SS Wilks, JS Hunter, L Heys, AV Jamode, VS Sapkal, VS Jamode, SK Deshmukh, KA Krishnan, TS Anirudhan, G Saswati, UC Ghosh, R Schmubi, K Keizer, M Kobya

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Description
In this study a report on statistical evaluation of some operational factors that influence efficacy of adsorption as a treatment process was presented. A standard 2^4 factorial matrix was developed and four factors (stirring speed, adsorbent dose initial concentration of the adsorbate and co-ion concentration) were evaluated based on ability of the absorbent to remove cadmium from synthetic waste waters. The study revealed that cadmium adsorption was not significantly influenced by stirring speed of the solution to be treated. On the other hand, initial cadmium concentration, co-ion concentration and adsorbent dose significantly influenced efficiency of the process at 90% confidence level. Mathematical model for cadmium removal was found to be Y = 84.53- 1.83A + 2.59B - 4.18 C + 3.07D. The predictions given by the factorial experiments model agreed with the experimental data. It was then concluded that factorial …