



Orange Peel as Natural Adsorbent for the Removal of Chromium (VI) from Water Samples

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ABSTRACT: Chromium(VI) has been found to be one of the most toxic metals found in water obtained from industry effluents. This study deals with the removal of Cr(VI) using dried orange peel which are a waste product after the fruit has been eaten, by the process of adsorption. Since orange peels are waste material and act as a natural adsorbent they are easily obtained from the domestic sources. The sorption of Cr(VI) was done by batch method and detected using UV-visible spectrophotometer at 540 nm. Various parameters like pH, mass of adsorbate, concentration of adsorbent, time of contact were optimized. It was observed that under the optimized conditions the percentage efficiency for the removal of Cr(VI) was upto 80%. Adsorption studies were carried out using Langmuir and Freundlich adsorption isotherms and also the kinetic studies and thermodynamic parameters were calculated. This technique can be used for the removal of Cr(VI) from water obtained from industries which have chromium as one of the main pollutants in their effluents. © 2014 iGlobal Research and Publishing Foundation. All rights reserved.

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