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Naturally Occurring Radioactivity in the Environmental Samples.

Phosphate fertilizers are used to provide soils with phosphorous, uranium introduced in soils with phosphorous. Both uranium and phosphorous may leach from soils into groundwater resources. Groundwater near to the industrial phosphate company are used for drinking in the rural regions of Egypt Contamination of groundwater with uranium has a hazardous effect on human being. The objective of this study is to remove natural occurring uranium from polluted groundwater by using a low –cost activated carbon. Activated carbon (AC) was prepared from coconut shells using chemical activation method of phosphoric acid. Scanning electron microscope (SEM) showed the presence variety of cavities at the surfaces of the prepared AC. Fourier transform infrared spectroscopy (FTIR) was performed The point of zero charge (pHPZC) was found 8.8 confirming alkaline nature of AC surfaces. AC selected because it was found to contain a high fixed carbon, 64.8 % and low ash content, 11.2 %. Sorption of uranium was performed using batch technique. Adsorption of uranium was studied as a functional of different dosage weights ranges 0.2 to 1.0 g, different U(IV) ion concentration ranges 25 –125 mg/l. the capacity of the prepared AC was compared with that determined by the Langmuir isotherm model and other isotherm models. The sorption data were fitted to Langmuir isotherm model This study showed that the AC is successfully used for the removal of 80 % of the natural U(IV) from aqueous waste solutions.

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