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Bentonite Functionalised with 2-(3-(2-aminoethylthio)propylthio)ethanamir (AEPE) for the Removal of Hg(II) from Wastewaters

By Nina Siebers

Diplomica Verlag Nov 2008, 2008. Taschenbuch. Book Condition: Neu. 270x190x5 mm. This item is printed on demand - Print on Demand Neuwar In this study, natural bentonite clay was first purified and then functionalis with the chelating ligand 2-(3-(2-aminoethylthio)propylthio)ethanamine (AEPE) to improve the adsorption capacity and selectivity towards Hg(II) io The surface modification was characterised with the help of powder X-ray diffraction (XRD), Fourier transform infrared spectroscopy (FT-IR), BET isotherm to determine the specific surface area while the thermal stability the samples was studied using thermogravimetric analysis (TGA). FT-IR an TGA demonstrated the presence of the chelating ligand on the modified cl XRD pattern indicated that the chelating agent AEPE was only grafted onto the surface of the purified bentonite, whereas the interlayer distance did n change. N2 specific surface area measurement also indicated the coverag AEPE onto the surface of purified bentonite. Adsorption of Hg(II) ions from aqueous solutions as a function of pH, contact time, initial concentration, ionic strength, interfering ions and adsorbent dose was studied. The adsorption process followed a pseudo-second order kinetics and monolay adsorption. The adsorption of Hg(II) ions increased with increasing pH and reached a plateau value in the pH range...

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