World Academy of Science, Engineering and Technology
International Journal of Environmental and Ecological Engineering
Vol:9, No:04, 2015

Removal of P-Nitrophenol in Wastewater by Using Fe-Nano Zeolite Synthesized

Authors : Pham-Thi Huong, Byeong-Kyu Lee, Chi-Hyeon Lee, JiTae Kim

Abstract : This study analyzed the removal of p-nitrophenol from wastewater using Fe-nano zeolite synthesized. The basic physical-chemical properties of Fe-nano zeolite was determined by X-ray diffraction (XRD), Fourier transform infrared (FTIR) spectroscopy. We focus on finding out the optimum conditions in adsorption and desorption processes for removal of p-nitrophenol by using Fe-nano zeolite in wastewater. The optimum pH for p-nitrophenol removal in wastewater was 5.0. Adsorption isotherms were better fitted with the Langmuir isotherm than with the Freundlich with 165.58 mg/g adsorption capacity of p-nitrophenol. These findings support potential of Fe-nano zeolite as an effective adsorbent for p-nitrophenol removal from wastewater.

Keywords : Fe-nano zeolite, adsorption, wastewater, regeneration
Conference Title : ICEBESE 2015 : International Conference on Environmental, Biological, Ecological Sciences and Engineering
Conference Location : London, United Kingdom
Conference Dates : April 22-23, 2016