World Academy of Science, Engineering and Technology
International Journal of Chemical and Materials Engineering
Vol:9, No:01, 2015

In-Situ Synthesis of Zinc-Containing MCM-41 and Investigation of Its Capacity for Removal of Hydrogen Sulfide from Crude Oil

Authors : Nastaran Hazrati, Ali Akbar Miran Beigi, Majid Abdouss, Amir Vahid

Abstract : Hydrogen sulfide is the most toxic gas of crude oil. Adsorption is an energy-efficient process used to remove undesirable compounds such as H2S in gas or liquid streams by passing the stream through a media bed composed of an adsorbent. In this study, H2S of Iran crude oil was separated via cold stripping then zinc incorporated MCM-41 was synthesized via an in-situ method. ZnO functionalized mesoporous silica samples were characterized by XRD, N2 adsorption and TEM. The obtained results of adsorption of H2S showed superior ability of all the materials and with an increase in ZnO amount adsorption was increased.

Keywords : MCM-41, ZnO, H2S removal, adsorption
Conference Title : ICECE 2015 : International Conference on Environmental and Chemical Engineering
Conference Location : Istanbul, Türkiye
Conference Dates : January 26-27, 2015