

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

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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

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