

Catalytic Activity Study of Fe, Ti Loaded TUD-1

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Abstract : TUD-1 is a siliceous mesoporous material with a three-dimensional amorphous structure of random, interconnecting pores, large pore size, high surface area (400-1000 m²/g), hydrothermal stability, and tunable porosity. However, the significant disadvantage of the mesoporous silicates is few catalytic active sites. In this work, a series of bimetallic Fe and Ti incorporated into TUD-1 framework is successfully synthesized by sol-gel method. The synthesized Fe,Ti-TUD-1 is characterized by various techniques. To study the catalytic activity of Fe, Ti-TUD-1, phenol hydroxylation was selected as a model reaction. The amounts of residual phenol and oxidation products were determined by high performance liquid chromatography coupled with UV-detector (HPLC-UV).

Keywords : iron, phenol hydroxylation, titanium, TUD-1

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