

Synthesis of Bimetallic Ti-Fe-SBA-15 Using Silatrane

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Abstract : Mesoporous materials have been used in many applications, such as adsorbent and catalyst. SBA-15, a 2D hexagonal ordered mesoporous silica material, has not only high specific surface area, but also thicker wall, larger pore size, better hydrothermal stability, and mechanical properties than M41s. However, pure SBA-15 still lacks of redox properties. Therefore, bimetallic incorporation into framework is of interest since it can create new active sites. In this work, Ti-Fe-SBA-15 is studied and successfully synthesized via sol-gel process, using silatrane, FeCl₃, and titanium (VI) isopropoxide as silica, iron, and titanium sources, respectively. The products are characterized by SAXD, FE-SEM, and N₂ adsorption/desorption, DR-UV, and XRF.

Keywords : SBA-15, mesoporous silica, bimetallic, titanium, iron, silatrane

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