

## Spray Pyrolysis Synthesis and Characterization of Mesoporous SiO<sub>2</sub>/γ-Al<sub>2</sub>O<sub>3</sub> Composite Particles

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Alumina (γ-Al<sub>2</sub>O<sub>3</sub>) and silica(SiO<sub>2</sub>) have been widely used as adsorbents or catalysts/catalyst supports for dehydrogenation and desulfurization because of their high surface area, high thermal and chemical stability. In this study, SiO<sub>2</sub>/γ-Al<sub>2</sub>O<sub>3</sub> composite particles were synthesized by spray pyrolysis combined with sol-gel process. The spray pyrolysis method has advantages of synthesizing spherical nano- or micron-sized particles in one step and controlling the size and morphology of the product particles. Also, mass production is possible with this method as it is a continuous reaction process. In order to control specific surface area and pore structures, the particles were prepared in various SiO<sub>2</sub>/γ-Al<sub>2</sub>O<sub>3</sub> compositions after adding CTAB. The product particles were analyzed by BET, XRD, FE-SEM, and TGA.