

## عنوان مقاله:

The effects of different types of surfactants on nanosized  $\gamma$ -alumina prepared with spray dryer method

## محل انتشار:

اولین کنفرانس ملی نانوفناوری در صنایع نفت، گاز و پتروشیمی (سال: 1393)

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## خلاصه مقاله:

Alumina nanopowder has a wide variety of applications in different industries. The  $\gamma$ -alumina as a catalyst and catalyst support is greatly employed because of very appropriate specific surface area and suitable pore properties. In this research, nanosized  $\gamma$ -alumina as the catalyst support with mesoporous structure was prepared using aqueous slurry solutions of boehmite and surfactants as structure directing agent. The three surfactants used were n-butylamine and diethylenetriamine and tetrapropylammonium hydroxide. Spray dryer method was employed for the prepared samples. The effect of three surfactants on the bulk density, specific surface area and pore structure of the produced  $\gamma$ -alumina was investigated. Characterization analysis was performed with techniques of X-ray diffraction (XRD), BET surface area, bulk density and thermogravimetric analysis (TGA). The samples particle sizes obtained using BET surface area data, show particle diameter of about 9 nm. In addition, Spray dried nanosized  $\gamma$ -alumina samples prepared using n-butylamine and diethylenetriamine surfactants showed suitable specific surface area of about 180 m<sup>2</sup> gr<sup>-1</sup>.

## کلمات کلیدی:

boehmite, surfactant, spray dryer,  $\gamma$ -Alumina, nanosized

## لینک ثابت مقاله در پایگاه سیویلیکا:

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