

Synthesis and characterization of millimetric gamma alumina spherical particles by oil drop granulation method

Abstract

An oil drop granulation process was developed to prepare porous meso-structured gamma (γ) alumina (Al_2O_3) granules. The γ - Al_2O_3 granules prepared were 2 mm diameter spherical particles with low sphericity factor (0.02 ± 0.01). The XRD results validated that the synthesized granule possesses crystallinity of γ - Al_2O_3 phase. The N_2 adsorption-desorption isotherm and BJH pore size distribution of the synthesized granule elucidated the existence of mesoporous characteristic with unimodal pore in the mesopore region. The synthesized and characterized granules can be used as a potential support for catalyst in either moving or fluidized bed reactor.