

Morphological Control in the Synthesis of Hybrid and Lamella Magnesium Hydroxide and Magnesium Oxide

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Hybrid and lamella magnesium hydroxide and magnesium oxide were prepared by precipitation synthesis. The Lamella magnesium hydroxide consisted rod -like and disk -like morphologies in attempt to increase the aspect ratio of particles which would help in better dispersibility of the particles of the particles during industrial application. The powder products with 25-85nm in diameter for lamella-like nanoparticles, 32-37nm in diameter and 600nm-3, in length for rod -like particles and 80-400 nm in the diameter for disk like nanoparticles. in the course of synthesis, it was observed that different synthetic parameters such as precipitant concentration, type of surfactant, concentration, reaction temperature and aging temperature had an effect on the morphology and size of the magnesium hydroxide and were investigated. The samples were characterized by transmission electron microscope (TEM), X-ray diffraction (XRD), field emission scanning electron microscope (FE -SEM) and thermogravimetric analysis (TGA).