

Synthesis of organo-functionalized nanosilica via a co-condensation modification using γ -aminopropyltriethoxysilane (APTES)

Abstract

An easy and swift pathway in preparation of organo-functionalized silica in nanosize range with amine-terminated group via co-condensation method is reported. The process is a self-catalyzed reaction by amine group of organosilane without the addition of ammonia as a catalyst at room temperature. A modified nanosilica with particle size of ~60nm, highly monodispersed and low aggregation was successfully produced. The use of methanol as a solvent leads to the increase in particle size. CHN, FTIR and NMR analyses revealed the presence of organo-functional group in the bulk and at the surface of the silica particles.