

Development of Substrate-Selective Catalysts Composed of Clay Mineral/Porphyrin-Surfactant Complexes

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Abstract

Layered clay minerals adsorb various cationic molecules into the interlayers due to the anionic surfaces. Adsorption behavior of substances into composites which are made of clay and surfactant have been investigated and the adsorption properties are influenced by affinity between substances and surfactants. This study develops clay/surfactant · porphyrin composite as a novel substrate-selective catalyst. The novel composites were obtained by mixing Saponite (SP), hexadecyltrimethylammonium bromide (CTAB), and Mn(II)tetrakis(1-methyl-4-pyridyl)porphyrin (MnTMPyP), and evaluated by direct observation and XRD measurement.