

Inorganic/Orgic Core-shell composite particle Synthesis and Adhesive Characterization

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CaCO₃ absorbed sodium dodecyl benzene sulfonate (SDBS) surfactant was prepared. Core-shell polymers of inorganic/organic pair, which have both core and shell component, were synthesized by sequential emulsion polymerization using methyl methacrylate (MMA), ethyl acrylate (EA), butyl acrylate (BA), styrene (St) as a shell monomer and ammonium persulfate as an initiator. We found that when CaCO₃ core prepared by adding 2.0 wt% SDBS, CaCO₃ core/PMMA, CaCO₃/PEA, CaCO₃/PBA, CaCO₃/PSt shell polymerization was carried out on the surface of CaCO₃ particle without forming the new PMMA particle during MMA shell polymerization in the inorganic/organic core-shell polymer preparation. The structure of core-shell polymer were investigated by measuring the degree of decomposition of CaCO₃ using HCl solution, thermal decomposition of polymer composite using thermogravimetric analyzer, glass transition temperature by differential scanning calorimeter, and morphology by scanning electron microscope.