

Organic/Organic Core-shell Composite Particle Synthesis and Adhesive Characterization

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The composite latexes were prepared by sequential emulsion polymerization of methyl methacrylate (MMA), styrene (St), and ethyl acrylate (EA), butyl acrylate(BA) in the presence of anionic surfactant as an emulsifier, and the characteristics of these composite polymers were evaluated. The synthesis of core latex had to be performed carefully to avoid the nucleation of secondary particles. The sequential polymerization method adopted these synthesis took advantage of stabilizing particles grown during shell polymerization. In the organic/organic core-shell composite emulsion polymerization, to suppress the generation of new particles and to minimize the gelation during the shell polymerization, the amount of surfactant (Sodium dodecyl benzenesulfonate:SDBS) should be reduced to the minimum, 0.01 wt% and 0.03 wt% of SDBS to the amount of monomer respectively when the Polymethyl methacrylate(PMMA) and Polyethylacrylate(PEA), Polybuthylacrylate(PBA), Polystyrene(PSt) core latexes were prepared.