


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Poly(methacrylic) Acid and γ -methacryloxypropyltrimethoxy Silane/Clay Nanocomposites
Prepared by In-Situ Polymerization

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Abstract: Poly(methacrylic acid) and poly(acrylic acid) nanocomposites were prepared by in-situ polymerization of γ -methacryloxypropyltrimethoxysilane (A174)/clay nanocomposites in which the macromonomer was generated by grafting A-174 onto activated clay samples via hydroxyl groups or via intercalation. In-situ polymerization was carried out in the presence of an initiator. It was found that the structural affinity between the methacrylic or acrylic acid monomers and the amount of clay played an important role in the hybrid structure. The nanocomposites were quantified by both X-ray diffraction (XRD), scanning electron microscopy (SEM), Fourier transform infrared spectroscopy (FTIR), thermogravimetric analysis (TGA), and differential thermal analysis (DTA).

Key Words: Nanocomposites, clay, kaolinite, in-situ polymerization, macromonomer.

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