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Abstract
We have used three polymerization process to synthesize different morphology magnetic polymer nanocomposite. The polymers of poly(MMA-co-MAA) and poly(MMA-co-MAA-co-BA) were prepared by emulsifier free emulsion polymerization, the magnetite nanoparticles were prepared by a standard co-precipitation method in N2 atmosphere and coated with surftant surfactant. The mean crystallite size of magnetite nanopartilces estimated by the X-ray diffraction (XRD) patterns is average 10 nm. Fourier transform infrared spectroscopy (FTIR) and transmission electron microscopy (TEM) were used to examine the ability of Fe3O4 nanoparticles functionalized with polymer. Additionally, the size PMMA/Fe3O4 nanospheres is 120 nm examined by the dynamic light scattering (DLS) as well as from the image taken by TEM and this composite particles display superparamagnetic behavior at room temperature.
Further, synthesize the functional polymer of Shape Memory thin film which to add Butyl acrylate monomer in polymerization. This research provided a route to prepare the function polymer containing magnetic nanoparticles that is desirable for the biotechnological application.
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