

### Preparation of uniform-sized superparamagnetic polymer microspheres

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Monodisperse polymer microspheres incorporated with superparamagnetic iron oxide ( $\text{Fe}_3\text{O}_4$ ) particles are prepared by in-situ co-precipitation of iron salts. The preparation processes consist of three steps: preparation of monodisperse poly(glycidyl methacrylate) microspheres by using dispersion polymerization; amine-functionalization of the said microspheres by amine-epoxy reaction; introduction of iron ions in the modified microspheres followed by in-situ precipitation of them with ammonium hydroxide to create iron oxide nanoparticles in the microspheres. Scanning electron microscopy (SEM) and transmission electron microscopy (TEM) were used to characterize the nanoparticles and microspheres.