

Experimental study on the preparation of magnetic iron oxide nanoparticles

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Magnetic nanoparticles offer many applications, especially, in biology and medicine, including protein purification, drug delivery and medical imaging. In this study, iron oxide nanoparticles were prepared in aqueous solution using NH_4OH as precipitating agent. To make these particles well disperse in medium, we used citrate ions which are known to be the stabilizing agent. The properties of the magnetic nanoparticles were characterized by the measurements of FT-IR, XRD and VSM. The nucleation and growth of iron oxide nanoparticles were analyzed systematically by ELS and TEM.