

Synthesis and Characterization of Polyethylene Glycol Coated Superparamagnetic Fe_3O_4 Nanoparticles

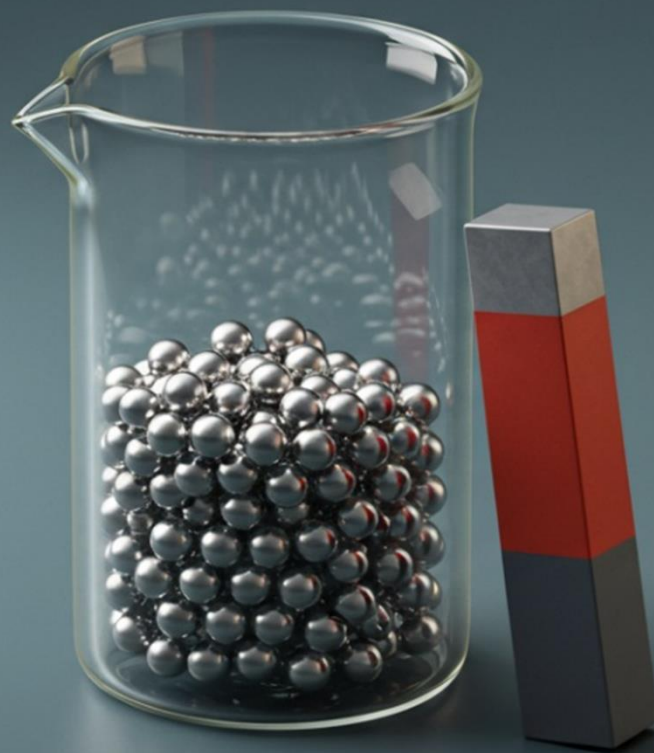
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Editor's note: Superparamagnetic nanoparticles have significant potential for innovative applications across various fields, including material science and engineering, biomedicine, biotechnology, and environmental science. Patil et al. reported that coating iron oxide (Fe_3O_4) nanoparticles with polyethylene glycol enhances the performance of these superparamagnetic nanoparticles. The synthesized magnetite Fe_3O_4 nanoparticles exhibited a cubic inverse spinel structure, had a roughly spherical shape, and were monodispersed. Additionally, Vibrating Sample Magnetometer results demonstrated excellent superparamagnetic behavior and high saturation magnetization at room temperature.

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