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Author: Donya Ramimoghadam Samira Bagheri Sharifah Bee Abd Hamid



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Stable Monodisperse Nanomagnetic Colloidal Suspensions: An overview

Donya Ramimoghadam, Samira Bagheri *, Sharifah Bee Abd Hamid

Nanotechnology & Catalysis Research Centre (NANOCAT), IPS Building, University of Malaya, 50603 Kuala Lumpur, Malaysia.

*Author to whom correspondence: Samira Bagheri; E-mail address: samira_bagheri@um.edu.my

Abstract

Magnetic iron oxide nanoparticles (MNPs) have emerged as highly desirable nanomaterials in the context of many research works, due to their extensive industrial applications. However, they are prone to agglomerate on account of the anisotropic dipolar attraction, and therefore misled the particular properties related to single-domain magnetic nanostructures. The surface modification of MNPs is quite challenging for many applications, as it involves surfactant-coating for steric stability, or surface modifications that results in repulsive electrostatic force. Hereby, we focus on the dispersion of MNPs and colloidal stability.

Keyword: Superparamagnetic iron oxide nanoparticles; Magnetic slurry; Ferrofluids; Ultrastable colloidal suspensions

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