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Magnetic Nanoparticles 2019

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Deadline for manuscript
submissions:

closed (31 August 2019)

Message from the Guest Editors

Dear Colleagues,

Magnetic micro- and nanoparticles have been used in biological and biomedical investigations since the 1920s when Heilbrunn and Seifritz first used the forces on these particles to examine the rheological properties of cells. Since that time, myriad uses for these particles have arisen and much progress has been made in synthesis techniques and bio-functionalization. Superparamagnetic iron oxides are routinely used in the clinic today as MRI contrast agents and are found in many pathology laboratories around the world where they are used for cell separation assays. More recent, novel uses include binding to specific cell receptors to control cell function and stem cell differentiation for tissue engineering and regenerative medicine, as well as magnetic targeting for drug and gene delivery, magnetic fluid hyperthermia, and other novel applications. This issue will cover a variety of topics related to the use of MNPs in biomedicine and examine both novel synthesis and bio-functionalization techniques as well as their current and future uses in biomedical research, diagnostics and therapy.



mdpi.com/si/23357

Special Issue



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Message from the Editor-in-Chief

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