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Surface Modification of Magnetic Nanoparticles and Their Applications

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Message from the Guest Editor

Dear Colleagues,

In this special issue, we focus on the surface chemistry of magnetic nanoparticles in order to produce functional magnetic systems and their successful validation in different fields. In particular, i) the development of novel synthetic routes for the production of various magnetic nanostructures with a tunable size, shape, and composition, ii) different surface modification approaches such as ligand exchange, polymer coating, and silica coating for as-synthesized nanoparticles to obtain nanoparticles with better colloidal stability and tunable surface chemistry, iii) further exploitation of desired conjugation strategies for specific applications, iv) the effect of surface chemistry on magnetic properties followed by their efficiency in the applications, and v) the successful applications of designed magnetic nanosystems in diverse fields such as bioimaging, biosensing, drug delivery, therapy, catalysis, and water purification are covered.

Keywords: synthetic route, surface modification approach, magnetic properties, biosensing, bioimaging, drug delivery, therapy, catalysis, magnetic separation, water purification