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## Synthesis, Characterization and Applications of Iron Oxide Nanoparticles

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### Message from the Guest Editor

Dear Colleagues,

Iron oxides can be found in many polymorphic forms that exhibit different magnetic characteristics, catalytic activities, biocompatibilities, and other multifunctional properties. To better understand the interplay between nanoparticles' crystallography and their functional properties, novel chemical or plasma chemical methods for the synthesis of rare forms of iron oxides (beta, epsilon, zeta phase) are required. The nanotoxicity, biocompatibility, and targeted surface functionalization of iron oxide nanoparticles need to be investigated in order to use these nanoparticles in the fields of medicine, catalysis, environmental applications, and multifunctional composite materials.

The objective of this Special Issue is to provide a comprehensive overview of novel approaches to the synthesis, the characterization, and applications of iron oxide nanoparticles, with a focus on: novel techniques for the synthesis of rare iron oxides; plasma synthesis of iron oxides; advanced surface functionalization of iron oxide nanoparticles; environmentally friendly applications of iron oxides; and the role and utilization of iron oxides in the exploration of Mars.



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# Special Issue



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## Message from the Editor-in-Chief

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