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Luminescent Rare-Earth-Based Nanomaterials

Guest Editor:

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Message from the Guest Editor

Rare-earth-doped inorganic phosphors have been an exciting subject of research for decades due to their unique and fascinating luminescent properties, such as a strong emission intensity with sharp emission lines and long luminescent lifetimes. Their wide range of applications, including lighting, displays, scintillators, solid-state lasers, and optical storage, confirms their great importance. Doping lanthanide ions into nanoparticles not only extends the list of potential applications of rare-earth-doped phosphors but enables, among other things, the development of diagnostic and theranostic tools with unprecedented functionality. An appropriate composition, stoichiometry, and architecture of such nanoparticles will allow for the creation of multifunctional materials that combine optical temperature, pressure, and pH sensing with luminescence imaging and light-to-heat conversion. Although unparalleled and impressive, their capabilities have yet to be fully explored and understood.

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Message from the Editor-in-Chief

Nanoscience and nanotechnology are exciting fields of research and development, with wide applications to electronic, optical, and magnetic devices, biology, medicine, energy, and defense. At the heart of these fields are the synthesis, characterization, modeling, and applications of new materials with lower nanometer-scale dimensions, which we call "nanomaterials". These materials can exhibit unusual mesoscopic properties and include nanoparticles, coatings and thin films, metal–organic frameworks, membranes, nano-alloys, quantum dots, self-assemblies, 2D materials such as graphene, and nanotubes. Our journal, *Nanomaterials*, has the goal of publishing the highest quality papers on all aspects of nanomaterial science to an interdisciplinary scientific audience. All of our articles are published with rigorous refereeing and open access.

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