



Rare-Earth-Based Composites with Advanced Tailored Functionalities

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Message from the Guest Editors

Dear Colleagues,

In the last decades, rare-earth doped materials acquired a key role in the development of systems for light generation, guiding, manipulation and detection. This is mainly due to the intrinsic, unique optical properties exhibited by rare earth ions when embedded in suitable host matrices.

In addition to the typical applications in telecommunication and photonics, rare-earth-based materials have also been developed for more tailored uses, such as phosphors for decorative lighting, remote temperature sensors for bioimaging, spectral modifiers for photovoltaic solar cells, and anti-counterfeiting markers in manufacturing and in cultural heritage preservation.

The possibility of achieving these features also goes through the design of novel material architectures that can activate or enhance specific rare-earth optical properties. In this regard, intense research activity has been undertaken to develop rare-earth-based composite systems, spanning from inorganic/organic hybrid materials to core-shell structures, from nanoparticle-embedded films to loaded porous matrices.





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Message from the Editor-in-Chief

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