Special Issue

Lanthanide-Activated Inorganic Materials

Message from the Guest Editors

Lanthanides in crystalline compounds have found wide applications as optical materials for different purposes. Examples include novel phosphors for LEDs, optical thermometers, or even quantum computing systems. The variety and rich 4fn energy level structure of the trivalent lanthanides makes the optical properties of these elements highly versatile. Besides the experimental progress, theoretical modelling of the lanthanide elements has also progressed in the last years, and even allows for comparing accurate simulations with experimental results. The optical properties of lanthanides in these oxidation states can strongly differ from those in the trivalent lanthanides, because of the typically lower energetic 4fn-15d1 configuration, which has not been researched much and yet offers both fundamental and applicational new insights. Examples include the application of Eu2+ as a broad-band emitting ion for novel LED phosphors, Sm2+ as a pressure sensing ion, or Tm2+ for novel solar concentrators. This Topic Issue aims at providing a platform to explore these interesting topics and to help gain new scientific insight into the fascinating chemistry and physics of lanthanide elements.

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Message from the Editor-in-Chief

Welcome to *Crystals*, the journal dedicated to the fascinating world of crystallographic research! Crystals are more than mere decorative elements; they hold the key to understanding the fundamental structure of matter. Our mission is to explore the crucial significance of this research across various fields. From medicine to technology, chemistry to geology, crystals play a vital role. Their structure provides insights into new advanced materials, innovative drugs, and groundbreaking technologies. Through *Crystals*, we delve into the microscopic world to discover solutions that will shape the future. Join us on a journey through the *Crystals*, where science merges with beauty and innovation.

Editor-in-Chief

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