

## Special Issue

# Rare Earth-Free Permanent Magnets: From Modeling to Functional Materials

### Message from the Guest Editor

As global demand for permanent magnets grows in clean energy, electric transportation, and electronics, reliance on critical rare earths like Nd, Dy, and Tb raises sustainability and supply concerns. Developing high-performance, rare earth-free, and light rare-earth magnets is a key research priority. This Special Issue will cover the full spectrum of research on rare earth-free and Ce-based permanent magnets, from theoretical modeling and computational materials design to experimental synthesis, advanced characterization, property optimization, and integration into functional devices. Topics include, but are not limited to, the following: Mn-based alloys (e.g., MnAl, MnBi), Fe–Ni L<sub>10</sub> (tetrataenite), Fe–N phases, Alnico, La/Ce-based intermetallics, Heusler compounds, and novel interstitially modified or nanostructured systems. We welcome studies that combine modeling with experimental validation, explore sustainable manufacturing (e.g., additive methods), and address real-world performance challenges. This Special Issue unites experts to shape the future of sustainable permanent magnets, reducing rare earth dependence while meeting performance demands.

### Guest Editor

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### Deadline for manuscript submissions

closed (25 March 2026)



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## About the Journal

### Message from the Editor-in-Chief

*Magnetochemistry* constitutes a multidisciplinary field where chemists and physicists not only study magnetic properties but also design and synthesize chemical compounds with desired magnetic properties.

*Magnetochemistry* is inviting contributions in any field related with this area, such as theoretical models, crystal engineering, molecular magnetism, SMM, SIM, SCM, SCO, magnetic nanostructures, magnetic MOFs, magnetic recording, qubits, magneto-caloric materials, etc. Our goal is to share your contribution in a timely fashion and in a manner that will be valued by the scientific community.

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### Editor-in-Chief

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