

Special Issue

Sustainable Corrosion Control Strategies for Metals and Alloys in a Low-Carbon Era

Message from the Guest Editors

This Special Issue of *Processes* is dedicated to recent advances in the understanding, prevention, and control of corrosion in metallic materials across a wide range of industrial processes. It features original research articles, reviews, and case studies addressing corrosion mechanisms, corrosion-resistant alloys, innovative surface treatments, and protective coatings, with an emphasis on technological developments that enhance the durability, efficiency, and sustainability of metals in diverse environments. A central focus of this Special Issue is the development of sustainable corrosion protection solutions in alignment with low-carbon and circular economy goals. In this context, we welcome contributions on the following:

- Eco-friendly and bio-based corrosion inhibitors;
- Protective coatings incorporating recycled materials, such as polymers or industrial by-products;
- Surface engineering for corrosion resistance in renewable energy systems and clean technologies;
- Green chemistry approaches and life-cycle assessment (LCA) applied to corrosion mitigation;
- Integration of corrosion protection in sustainable manufacturing processes.

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