

## Special Issue

# Electrochemical Approaches for Advanced Surface Engineering of Metals and Alloys

### Message from the Guest Editors

Electrochemical technologies are key tools for tailoring the surfaces of metals and alloys, enabling precise control over chemistry, morphology, and functionality. Techniques like electrodeposition, anodization, electrochemical conversion, and surface functionalization offer scalable, efficient routes to improve properties, catalytic activity, or interfacial compatibility of materials. Driven by demands in multiple fields, these methods advance durability, sustainability, and multifunctionality. Progress in diagnostics, modeling, and coatings further expands the impact.

This special issue highlights electrochemical surface treatments for metallic materials. Contributions bridging materials science, electrochemistry, and engineering are encouraged. Topics may include, but are not limited to:

- Electrodeposition and electrochemical synthesis of functional coatings
- Anodization, passivation, conversion coatings, and surface functionalization
- Corrosion protection, tribological performance, and surface durability
- Treatments for energy, catalytic, and biomedical applications
- Advanced characterization and process modeling
- Sustainable and green electrochemical technologies

### Guest Editors

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### Deadline for manuscript submissions

20 March 2027



## Metals

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CiteScore 5.7



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## About the Journal

### Message from the Editor-in-Chief

Metallic materials play a vital role in the economic life of modern societies; contributions are sought on fresh developments that enhance our understanding of the fundamental aspects related to the relationships between processing, properties and microstructure – disciplines in the metallurgical field ranging from processing, mechanical behavior, phase transitions and microstructural evolution, nanostructures, as well as unique metallic properties – inspire general and scholarly interest among the scientific community.

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### Editor-in-Chief

Prof. Dr. Yong Zhang

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