

Special Issue

Metallic Materials and Alloys: Corrosion Protection, Mechanical Properties and Applications

Message from the Guest Editor

Metallic materials and alloys are the backbone of modern industry due to their exceptional mechanical performance and versatility. However, corrosion remains one of the primary challenges limiting their service life and structural safety. Research in this field is crucial for enabling safer infrastructures, reducing maintenance costs, and addressing environmental material degradation. This Special Issue aims to bring together innovative studies that deepen our understanding of corrosion mechanisms, protection technologies, and the mechanical characterization of metallic materials and alloys. This Special issue provides a platform for disseminating advances that have the potential to significantly impact the design of next-generation metallic systems. Scope of this Special Issue includes:

- Corrosion mechanisms.
- Development and characterization of protective coatings.
- Surface treatments and modification techniques.
- Enhanced corrosion and wear resistance.
- Mechanical properties under dynamic and thermal loading.
- Microstructure-performance relationships.
- Testing fatigue, toughness, and hardness.
- Sustainable strategies for corrosion mitigation.
- Manufacturing processes and effects on performance.

Guest Editor

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About the Journal

Message from the Editorial Board

Now more than ever, research is asked to deliver knowledge and technologies to solve the major challenges faced by our society. The development of new materials and devices for (without the ambition to be exhaustive) energy, health and food technology, together with the need for establishing processes that reduce the impact on critical resources and the environment, is indeed in the spotlight of most contemporary research. Surface science and engineering play a key role in this regard, with an incredible potential in delivering new and deep scientific understanding and technical solutions essential to solve most of the major societal challenges.

Coatings is a well-established, peerreviewed, online journal dedicated to the vibrant field of surface science and engineering. Coatings publishes original research articles that report cutting-edge results and review papers that make the point on the hottest research topics.

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