



Electrochemical and Corrosion Behavior of Promising Metallic Materials in the Field of Recent Research

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Message from the Guest Editor

Magnesium and its alloys have excellent physical and chemical properties such as low density, high strength, thermal conductivity, good damping performance, biocompatibility, recyclability, etc. They are considered to have great application potential especially in the fields of transportation (including aerospace) and biomedical applications. Unfortunately, poor corrosion resistance is the most important property that limits the industrial application of magnesium-based materials. In recent years, efforts have been made to develop new compositions, surface modifications, or deformation processes to improve the corrosion resistance of magnesium and its alloys. Despite the large scientific progress, there is still potential for the development of new solutions and overcoming the knowledge gap.

The scope of this Special Issue should provide comprehensive insight on corrosion processes in different environments and under different conditions, anti-corrosion coatings of different origins including current trends and advanced strategies such as superhydrophobic treatments, smart materials, etc., and corrosion inhibitors. Review papers are also welcome.





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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.

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