



## Environmental Corrosion of Metals and Its Prevention

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### Message from the Guest Editors

Dear Colleagues,

Corrosion is a phenomenon in which metal materials interact with the surrounding environment to destroy their properties, causing huge economic losses and environmental problems. According to a related survey, the economic losses caused by corrosion account for about 3–5% of the GDP. Corrosion has always attracted attention in the field of industry and engineering, leading to severe consequence on metal structures. The hazard of the corrosion of metal usually comes from its surrounding environments, such as corrosive ions, microbes, stress and stray currents. Inhibitor, coating and cathodic protection are the main protective methods to prevent the corrosion of metals from the corrosive factors. Topics include but are not limited to the following:

- Corrosion of metal in simulated or real environments including soil, atmosphere and sea;
- Conversion film including chemical conversion film, electroplating film, thermal-sprayed coating, and so on;
- Coatings including anticorrosive coating, functional coating, and so on;
- Inhibitors in different media and phases;
- Cathodic protection including sacrificial anode protection and impressed current protection.





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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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