Special Issue

Corrosion in Electrochemical Energy Technology: Causes and Effects, Investigations and Remediation

Message from the Guest Editors

Corrosion as a general degradation phenomenon is observed in relation to metals and their alloys. Moreover, it is also seen in many other materials employed as active masses, current collectors, cases and in further auxiliary functions, which may seriously affect the performance and stability of devices in electrochemical energy technology. These effects may be seen in primary and secondary batteries, in supercapacitors, in fuel cells and electrolyzers, in redox flow batteries and in the numerous hybrid systems combining components from any of the various listed systems, encompassing metal air batteries or metal-ion capacitors. At first glance, the trivial observation that natural driving forces are at work with corrosion being patiently accepted as something natural is certainly overly pessimistic. On a second look, beyond the discovery of processes and their driving forces, investigations of the effects of corrosion on various device components yield an understanding of the causes and mechanisms of developing mitigation or even inhibition options.

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Deadline for manuscript submissions

closed (31 May 2025)

Corrosion and Materials Degradation

an Open Access Journal by MDPI

Impact Factor 2.4
CiteScore 5.2

mdpi.com/si/221065

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