

Special Issue

Engineering in Battery Technologies—Advanced Surface Modification for High-Performance Energy Storage

Message from the Guest Editors

As the core of energy storage technology, the development of batteries relies on breakthroughs in two critical areas: first, advanced battery material design at the microscopic level, aimed at developing electrode and electrolyte materials with higher energy density, faster charging and discharging rates, and enhanced stability, where research on functional coatings, thin films, and surface modification techniques plays a pivotal role in optimizing interfacial properties and overall cell performance, and second, advanced battery management design at the system level, which maximizes the performance, safety, and lifespan of battery packs through intelligent algorithms, state estimation, and system control.

This Special Issue aims to break down this barrier by focusing on collaborative design and innovation between materials and systems. We invite scholars worldwide to share their latest research findings, collectively advancing the commercialization of next-generation battery technologies.

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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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