

Advanced Functional Coatings and Materials for Energy Harvesting, Conversion and Storage

Guest Editor:

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Message from the Guest Editor

Dear Colleagues,

In the pursuit of sustainable energy solutions, the significance of advanced functional coatings and materials is paramount, particularly within the domains of energy harvesting, conversion, and storage. The lack of comprehensive research on coatings and materials utilized in electrodes, collectors, and separators has resulted in challenges such as slow kinetic speed and low energy conversion efficiency in reactions. Thus, there exists an urgent need to enhance the efficiency of energy production processes and optimize storage capacities. This Special Issue is positioned to accelerate advancements in the development of novel materials and coatings customized for diverse applications like solar cells, batteries, supercapacitors, and thermoelectric devices. Topics of interest includes:

- Exploration of novel materials and coatings aimed at enhancing energy conversion efficiency;
- Utilization of advanced characterization techniques for the evaluation of functional coatings;
- Innovations in nanomaterials and functional coatings tailored specifically for energy applications;
- Challenges and opportunities associated with the scaling up of functional coatings.



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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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