

Special Issue

Controlled Growth of Nanomaterials for Low-Carbon Electrocatalysis and Photoelectrocatalysis

Message from the Guest Editor

Catalysis plays a key role in enabling the transition to a sustainable and carbon-neutral economy. Success in sustainable and carbon-neutral catalysis relies on the development of efficient and robust catalysts, which can be directly grown in a controllable manner and easily integrated into photo- and electro-catalytic devices with eco-friendly and scalable methodologies. This Special Issue aims to cover the most recent progress and advances in directly grown nanomaterials for the modification and engineering of electrodes to boost the catalytic performance of electrocatalytic and photoelectrocatalytic devices. This includes, but is not limited to, the methods and relevant mechanisms for the growth/deposition of catalytic nanomaterials (e.g., electrodeposition, chemical bath deposition, spray coating), surface characterization techniques, electrocatalytic and photoelectrocatalytic applications (e.g., water splitting, CO₂ reduction, and the reforming of organics), and fundamental studies on the mechanisms behind the efficient catalysis by catalytic nanomaterials.

Guest Editor

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Message from the Editor-in-Chief

Nanoscience and nanotechnology are exciting fields of research and development, with wide applications to electronic, optical, and magnetic devices, biology, medicine, energy, and defense. At the heart of these fields are the synthesis, characterization, modeling, and applications of new materials with lower nanometer-scale dimensions, which we call “nanomaterials”. These materials can exhibit unusual mesoscopic properties and include nanoparticles, coatings and thin films, metal–organic frameworks, membranes, nano–alloys, quantum dots, self-assemblies, 2D materials such as graphene, and nanotubes. Our journal, *Nanomaterials*, has the goal of publishing the highest quality papers on all aspects of nanomaterial science to an interdisciplinary scientific audience. All of our articles are published with rigorous refereeing and open access. We are proud of our increasing impact factor and ability to provide rapid decisions to authors.

Editor-in-Chief

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