

Special Issue

Plasma for Energy and Catalytic Nanomaterials

Message from the Guest Editors

The plasma method allows thermodynamically and dynamically difficult reactions to proceed at low temperatures due to the activation of energetic electrons. Compared to conventional preparation methods, it has been proven to be a fast, facile and environmentally-friendly method for synthesizing highly-efficient nanomaterials. The synthesized nanomaterials generally show enhanced metal-support interactions, small sizes of metal nanoparticles, specific metal structures, abundant oxygen vacancies, etc. Therefore, they exhibit high catalytic activity and stability in energy and catalytic applications. In spite of the growing interest in plasma for energy and catalytic nanomaterials, synthesis mechanisms of nanomaterials using plasma still remains obscure due to the complicated physical and chemical reactions during plasma preparation. A great deal of research is needed to better understand the controllable preparation mechanisms of the plasma method and widen its application scope in synthesizing energy and catalytic nanomaterials.

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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.

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