



metals



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Nano-Metallic Materials for New Energy

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Message from the Guest Editors

With the research in nanochemistry and nanotechnology, different techniques have been developed for synthesizing nanometallic materials. New insights into the atomic/molecular-scale description of interfacial regions have provided innovative ways to control the properties of nanometallic materials. The advantages of these new nanometallic materials, including the addition of further ingredients into the energy devices, make it possible to reach not only high energy density, excellent output power and high energy exchange efficiency, but also introduce the possibility of improving service life and safety. As a kind of highly reactive material, they should lead to major breakthroughs in Li-ion batteries, fuel cells, thrusters, actuators and propulsion-related energetic devices, and in small-size integrated pyrotechnic devices.

The design and preparation of nano metallic fuels;

The reaction kinetics of thermal oxidation;

The ignition and combustion performance;

Applications in propellants and explosives;

Applications in energetic devices;

High calorific value alloy fuels;

The moisture resistance and oxidation resistance;

Advanced characterization methods of nano composites.



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Message from the Editorial Board

Metallic materials play a vital role in the economic life of modern societies; contributions are sought on fresh developments that enhance our understanding of the fundamental aspects related to the relationships between processing, properties and microstructure – disciplines in the metallurgical field ranging from processing, mechanical behavior, phase transitions and microstructural evolution, nanostructures, as well as unique metallic properties – inspire general and scholarly interest among the scientific community.

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