Special Issue

Advanced Nano Metallic Fuels Used in Energetic Materials

Message from the Guest Editors

Different techniques for synthesizing nanometallic materials have been developed. Recent insights into the atomic-/molecular-scale description of interfacial regions have provided innovative ways of fine-tuning nanometallic materials' properties. These new nanometallic materials allow for the addition of ingredients into energy devices, making it possible to reach high energy density, excellent output power and high energy exchange efficiency, as well as improving service life and safety. As highly reactive materials, they may lead to major breakthroughs in Li-ion batteries, fuel cells, thrusters, actuators and propulsion-related energetic devices as well as in small integrated pyrotechnic devices. Topics of interest for this Special Issue include: the design and preparation of nanometallic fuels; reaction kinetics of thermal oxidation; ignition and combustion performance; applications in propellants and explosives; applications in energetic devices; high calorific value alloy fuels; moisture resistance and oxidation resistance; and advanced characterization methods of nanocomposites.

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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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