

Special Issue

Nano-Chemical Mechanics in Deformation and Fracture

Message from the Guest Editor

The issue of mechanical and chemical couplings on a nanoscale and their influence on deformation and fracture is an emerging topic in engineering science. Typical problems are chemomechanical damage and associated capacity fade in Li-ion rechargeable batteries, hydrogen damage in advanced energy storage components, as well as nanoscale phenomena in drilling and energy generation from the earth's crust. Multiscale theoretical modeling and novel mutiprobe experimental tests are necessary to capture the underlying physical processes at the nanoscale and assess their effect at the micro, meso and macro scales. Generalized continuum mechanics. The results will be of use for material/component design and protocol development in energy storage, automotive/aerospace industry, as well as in the manufacturing, chemical and energy sectors. Moreover, this will be of interest to biomedical technology, including treatments of bone degradation/fracture, cancer metastasis and Alzheimer's disease progression.

Guest Editor

Prof. Dr. Elias C. Aifantis

School of Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece

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Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
materials@mdpi.com

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Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

Editors-in-Chief

Prof. Dr. Maryam Tabrizian

1. Department of Biomedical Engineering, Faculty of Medicine and Health Sciences, McGill University, Montreal, QC H3A 2B6, Canada
2. Faculty of Dentistry and Oral Health Sciences, McGill University, 3640 Rue University, Montreal, QC H3A 0C7, Canada

Prof. Dr. Yuguang Ma

State Key Laboratory of Luminescent Materials and Devices, South China University of Technology, Guangzhou 510640, China

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