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Thermal, Mechanical and Radiation Stability of Nanostructured Metals

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Deadline for manuscript submissions:
closed (31 March 2023)

Message from the Guest Editors

Dear Colleagues,

Nanostructured metals exhibit unique combinations of properties and functionalities that are not typically found in their counterparts. These include mechanical strength, hardness, wear, transport, catalytic activity, and radiation tolerance, to name a few. However, very few of these metals, alloys, or metal matrix composites have found industrial applications, due largely to the poor stability of nanostructures. Understanding the stability of nanostructured metals is a rapidly emerging field that has the potential to greatly advance the integration of nanomaterials into applications with long term or extreme environments.

The format of welcomed articles includes full papers, communications, and reviews. Potential topics include, but are not limited to:

- Thermodynamic and kinetic stability of metals
- Solute and multiphase stability
- Nanostructured systems including: Nanocrystalline, Nanolayers, Nanoporous, Nanoscale precipitants
- Modeling via molecular dynamics, Monte Carlo, or mesoscale approaches
- Production via thin film growth, additively manufacturing, and bulk processing
- Extreme environments

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Special Issue

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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.

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