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Small-Scale Properties of Materials

Guest Editor:

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Deadline for manuscript submissions:
closed (31 May 2020)

Message from the Guest Editor

The characterization of mechanical properties, on micro- and nano-scales, is crucial for a fundamental understanding of materials behavior to assess other characteristics of materials in the actual service (i.e. elastic–plastic deformation, residual stresses, time-dependent creep and relaxation properties, fracture toughness, fatigue and yield strength). This special issue focuses on properties of materials at small-length scales from both theoretical/modeling and experimental viewpoints. The scope includes, but not limited to, the following areas:

- Materials characterization through micro/nanoindentation testing
- In-situ nanomechanical measurements in application environments (thermal, electrical, electrochemical, and biological stimuli)
- Small scale testing of interfaces
- Mechanical properties of thin films and coatings
- Small scale quasistatic tests (tension, compression, bending, and torsional tests)
- Small scale fatigue, creep and impact tests
- Nano-scale measurements of strain and stress

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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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