

Special Issue

Deformation Analysis and Modeling of Engineering Materials

Message from the Guest Editor

The deformation and modeling of engineering materials has been a research topic that has evolved greatly over the past eight decades. The initial work was largely experimental, but deformation mechanisms, including the discovery of dislocations, introduced the importance of mathematical models. Modeling of deformation in engineering materials is in some sense a mature technology. However, there are many subtopics that remain poorly understood. Models that allow transitions between these regimes have been proposed but need further development and experimental validation. Submissions to this Special Issue are welcome in the following areas:

- Physically based deformation models
- Modeling the transition between low-temperature and high-temperature deformation
- Crystal plasticity-based plasticity model advances
- Deformation models that bridge length scales
- Deformation mechanisms in 3D-printed materials and components
- Validating engineering model predictions
- Modeling methodologies in materials undergoing phase transformations—either thermally induced or stress-induced
- Illustration of deformation modeling in engineering applications

Guest Editor

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Message from the Editor-in-Chief

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.

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