# Special Issue

# Mechanics of Materials—Forming, Characterization and Analysis of Residual Stress

## Message from the Guest Editors

This Special Issue is aimed at gathering and presenting the latest developments in the investigation of the residual stresses phenomenon. Contributions showing the forming mechanism of residual stress in complex structural materials (such as composites, metal alloys, concretes, coating–substrate systems, etc.) during the manufacturing process (powder metallurgy, additive manufacturing, casting, welding, severe plastic deformation, surface finishing) or exposure to harmful conditions (high or low temperature, thermal shocks, corrosion, extremal external loadings, etc.) are welcome. Applications of residual stress characterization within different numerical and experimental approaches are expected. Experimental investigations (XRD, neutron diffraction, Raman spectroscopy, nanoindentation, etc.) and modeling of material stresses, structural defects, deformations/distortion, cracking and, as a consequence, damage at various scales can be presented. This Special Issue provides an excellent opportunity for those who study residual stress and aim to present their achievements.

## Guest Editors

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## Deadline for manuscript submissions

closed (20 June 2023)

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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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