Special Issue

Advanced High-Strength Steels: Processing and Characterization

Message from the Guest Editors

High-strength steels are vital in automotive, aerospace, construction, and energy industries. This Special Issue seeks multidisciplinary research on AHSS advancements, including:

- Material Design and Preparation: Novel alloy compositions, phase transformations, and innovative processing routes.
- Processing Technologies: Advances in hot/cold deformation, additive manufacturing, welding, coating, and surface engineering.
- Microstructural Characterization: State-of-the-art techniques for analyzing grain structure, precipitates, and phase evolution.
- Mechanical and Functional Properties: Investigations into strength/plasticity/toughness/fatigue behavior, corrosion resistance, and specific functions.
- Modeling and Simulation: Predictive models for microstructure–property relationship assessments, process optimization, and failure analysis.
- Sustainability and Recycling: Strategies to improve energy efficiency, reduce carbon footprints, and promote circular economy practices in AHSS production.

This Special Issue offers researchers and engineers a platform on which to showcase breakthroughs in AHSS research, fostering collaboration between academia and industry.

Guest Editors

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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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