Special Issue

Advances in Metal Rolling Process: Modelling, Analysis, and Application

Message from the Guest Editors

Advances in Metal Rolling Process: Modelling, Analysis, and Application focuses on various innovations, including:

- **Material Flow Models**: These predict metal behavior during deformation, such as grain refinement, and phase transformations, especially in hot rolling.
- **Machine Learning Models**: AI techniques, like machine learning, are used to predict rolling process outcomes based on large sets of experimental or simulation data, aiding in optimization and quality control.
- **Innovative Process Analysis**: Studying factors like roll force, temperature management, friction, advanced lubrication and residual stresses enhances process control and product quality, and reduce defects and energy consumption.
- **Advanced Materials**: These include rolling advanced high-strength steels (AHSS), titanium alloys, and other specialty materials used in high-performance industries such as aerospace, defense, and energy.
- **Automation and Smart Rolling Mills**: The integration of automation and real-time data acquisition enables continuous process monitoring and adjustments.

This field combines advanced modeling, real-time data, and material science to advance the limits of metal rolling.

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Message from the Editorial Board

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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