Special Issue

Advanced Special and High-Strength Steels

Message from the Guest Editors

High-quality special steel, with its high clean purification, high homogenization, and high grain refining requirements, directly determines the product quality and application performance of special steel materials. Clean purification mainly includes the removal of the main elements of impurity in the steel and controlling nonmetallic inclusions. Homogenization mainly refers to the segregation of elements and the uniform distribution of various precipitated phases. Grain refining mainly refers to the grain refinement and uniform structure of the steel. Clean purification, homogenization, and grain refining, involving smelting, refining, casting, forging, rolling, heat treatment, service, and other life cycles, is the key to preparing advanced special steel materials. The main topics are covered but not limited to:

- Pure smelting and special melting process research and development of special steel;
- Metallurgical defects and microstructure control of special steel;
- Development and research of cold and hot processing and forming technology of special steel;
- Composition design, microstructure, and performance control of special steel through heat treatment

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Deadline for manuscript submissions

closed (20 October 2023)

Materials

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed

mdpi.com/si/127262

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mdpi.com/journal/materials

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by MDPI

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Indexed in PubMed

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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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