# Special Issue

# Advanced Steel Design: Casting, Forming and Heat Treatment

## Message from the Guest Editors

Various types of advanced steels are used in modern industry and engineering applications. Due to the complexity of the microstructures and their evolutions in advanced steels, the whole process design and control is crucial—from casting and forging to manufacturing and heat treatment. Strength and ductility (toughness) are two key mechanical properties of crystalline metallic materials. Strength and ductility depend on the presence of crystal defects and how they evolve and are rearranged under thermal mechanical coupling conditions. A thorough understanding of how these processes influence strength and toughness forms the key to the analysis of existing and the design of improved innovative structural elements. The aim of this SI is to understand the relationship between microstructures and mechanical properties in advanced steels. For energy and car industry applications, improving and developing new steels in these fields can help to meet the demand of carbon emission and carbon neutralization.

## Guest Editors

Dr. Wei Li

Institute of Advanced Steels and Materials, School of Materials Science and Engineering, Shanghai Jiao Tong University, Shanghai 200240, China

Dr. Wei Xu

State Key Laboratory of Rolling and Automation, Northeastern University, Shenyang 110819, China

## Deadline for manuscript submissions

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*Materials*
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
materials@mdpi.com

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## Editor-in-Chief

Prof. Dr. Maryam Tabrizian
1. Department of Biomedical Engineering, Faculty of Medicine and Health Sciences, McGill University, Montreal, QC H3A 2B6, Canada
2. Faculty of Dentistry and Oral Health Sciences, McGill University, 3640 Rue University, Montreal, QC H3A 0C7, Canada

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