Special Issue

High-Energy Beam Machining of Metals

Message from the Guest Editors

High-energy beam machining technology, a highly efficient and precise advanced manufacturing method, has significant application value in material processing and is a hot research topic in materials science and manufacturing engineering.
Compared to conventional mechanical machining, it features non-contact operation, small heat-affected zones, high processing flexibility, and excellent handling of complex geometries. These advantages meet modern industries' demands for precision material treatment. The technology is widely used in cutting, welding, surface modification, drilling, and additive manufacturing, improving processing efficiency and product quality.
In this Special Issue, we seek articles on new high-energy beam machining methods for metallic materials and their impact on product performance, especially research on enhancing machining efficiency or surface quality of metals via process innovation or multi-energy field fusion.

- high-energy beam machining
- laser precision machining
- additive manufacturing
- laser micro–nano machining
- hybrid machining
- electrochemical machining

Guest Editors

Dr. Yang Liu
School of Mechanical Engineering, Jiangsu University, Zhenjiang 212013, China

Dr. Cong Sun
School of Mechanical Engineering and Automation, Northeastern University, Shenyang 110819, China

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

mdpi.com/journal/metals

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About the Journal

Message from the Editorial Board

Metallic materials play a vital role in the economic life of modern societies; contributions are sought on fresh developments that enhance our understanding of the fundamental aspects related to the relationships between processing, properties and microstructure – disciplines in the metallurgical field ranging from processing, mechanical behavior, phase transitions and microstructural evolution, nanostructures, as well as unique metallic properties – inspire general and scholarly interest among the scientific community.

Editors-in-Chief

Prof. Dr. Hugo F. Lopez
Department of Materials Science and Engineering, College of Engineering & Applied Science, University of Wisconsin-Milwaukee, 3200 N. Cramer Street, Milwaukee, WI 53211, USA

Prof. Dr. Yong Zhang
Beijing Advanced Innovation Center of Materials Genome Engineering, State Key Laboratory for Advanced Metals and Materials, University of Science and Technology Beijing, 30 Xueyuan Road, Beijing 100083, China

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