Special Issue

Advanced Metal Cutting Technology and Tools

Message from the Guest Editors

With the development of high-end equipment, difficult-to-cut materials with high strength and high hardness increasingly play an important role in the production of high load-bearing structural components. Additionally, the requirement for higher geometrical precision, better physical properties and a longer component service life has substantially increased. With that, the manufacturing industry faces the challenges of coordinating the geometrical state of machined surfaces with their physical and mechanical states, and, simultaneously, the difficulties of balancing machining quality and efficiency. Motivated by these challenges and difficulties, an increasing number of new cutting technologies are being developed. Due to the multidisciplinary characteristic of the machining process, the development of cutting technologies is enabled and accompanied by achievements in the domains of workpiece materials, tool materials, machine tools, processing conditions, fatigue and environments. This Special Issue is focused on the development and applications of new metal cutting technologies and tools.

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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.

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