Special Issue

Finite Element Method in Metal Forming: Current and Future Perspectives

Message from the Guest Editors

The finite element method (FEM) is a well-known computer-aided technique in modern metal-forming processes that deals with proper design and control along with the accurate determination of deformation mechanics. Acquiring sufficient knowledge regarding the possible impact of any variables (friction, sample geometry and dimension, die setup, material properties, temperature, rates, process mechanics, etc.) is a definite requirement to achieve accurate and successful finite element modeling. The utilization of FEM-based methods leads to successful predictions, simulations, and designs, making it an interesting tool in the industrial and academic metal-forming processes. Against this backdrop, this Special Issue is dedicated to thoroughly discussing FEM use in various metal-forming processes, including forging, extrusion, drawing and rolling, sheet metal forming, severe plastic deformation methods, shot peening, warm and hot forming, and any other metal-forming processes with a specific focus on three-dimensional issues, their prospects, and any novelties in FEM.

Guest Editors

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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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