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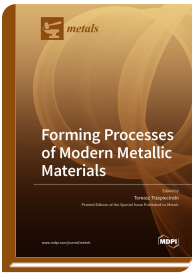
Special Issue Reprint

Forming Processes of Modern Metallic Materials



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The plastic forming of metallic materials is the most efficient and an important manufacturing technology in today's industry. Lightweight materials, such as titanium alloys, aluminum alloys, and ultra-high-strength steels, are used extensively in the automotive, aerospace, transportation, and construction industries, leading to increased demand for advanced innovative forming technologies. Today, numeric simulations are highly focused and provide a better understanding of the innovative forming processes. Computational methods and numerical analysis coupled with the modelling of the structural evolution allow us to reduce time costs and eliminate experimental tests. The subjects of research articles published in this nook are multidisciplinary, including friction and lubrication in sheet metal forming, hot strip rolling and tandem strip rolling, application of numeric methods to simulate metal forming processes, development of new creep performance materials, the single point incremental forming process, and the fatigue fracture characteristics of Alclad 7075-T6 aluminum alloy sheets joined by refill friction stir spot welding. Review articles summarize the approaches on the innovative numerical algorithms, experimental methods, and theoretical contributions that have recently been proposed for sheet metal forming by researchers and business research centers.

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