Special Issue

Advances in Local Loading Forming Process

Message from the Guest Editors

The local loading forming process represents an advanced, efficient, and high-quality metal forming technology. Compared with traditional overall loading forming processes, the local loading forming process realizes the overall plastic forming of components by applying loads successively and in different zones. This not only significantly reduces the forming load but also enables precise control over metal flow and plastic deformation, and remarkably improves the microstructure of the components. As a result, it breaks through the forming limits of complex components and enhances their mechanical properties. Therefore, the local loading forming process signifies an important approach to achieving the high-performance manufacturing of key components for high-end equipment, and it has already become a research hotspot in the forming and manufacturing technology of high-performance components. In order to further promote the development of this field, this Special Issue invites researchers to discuss new methods of local loading forming, process modeling, experimental studies, and industrial applications.

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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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