Special Issue

Advanced Applications of Artificial Intelligence in Metallic Materials Processing

Message from the Guest Editor

For the last 50 years, manufacturing processes have been relying on automation and information technologies, thereby exhibiting an inter-disciplinary nature, to solve the ongoing challenge of optimizing productivity, quality and cost. However, artificial intelligence techniques have re-emerged and can now be found at the core of the latter due to their abilities to reveal underlying interactions and patterns as well as to support optimal decision-making strategies. This Special Issue aims to highlight such advanced applications of artificial intelligence in metallic materials processing covering process modeling and simulation, process planning, real-time process monitoring and fault detection, in-process quality control, automated part handling and inspection. Real-world case studies that provide insights into the associated challenges, implementations and achieved benefits are especially welcome.

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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.

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