Special Issue

The Metallurgy of Industry 4.0

Message from the Guest Editor

Recent advances in manufacturing techniques have presented new possibilities for manufacturing metallic components. Industry 4.0 is the collective term for a number of technologies that are believed to have the capability to significantly increase industry productivity. While many of the technologies included will have limited influence on the fundamental physics encountered during manufacturing, others, such as 3D printing, have new physical phenomena that must be understood. More traditional manufacturing techniques such as machining can also be enhanced by the addition of sensors to equipment to monitor manufacturing in real time. Coupled with characterization techniques of modern materials, this feedback will help engineers to understand the influence of manufacturing parameters on material properties. Such links can help optimize manufacturing, without costly, large-scale trials. This Issue of *Metals* will explore how the development of Industry 4.0 in manufacturing and machining is allowing engineers new insights into the links between manufacturing, metallurgy, and performance.

Guest Editor

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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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