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Rapid Solidification Processing

Guest Editor:

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Deadline for manuscript submissions:
closed (30 September 2019)

Message from the Guest Editor

Rapid solidification processing (RSP), whether by rapid quenching, deep undercooling or a combination of the two, has been at the forefront of solidification science for the last 50 years or more. From an applications standpoint, RSP permits access to a range of compositional and morphological states, including metastable phases, highly grain refined structures and non-crystalline materials, not otherwise available to the materials engineer. This in turn leads to improved mechanical, thermal and corrosion resistance properties, which have found utilization in a range of high-value added sectors. With the rise of Additive Layer Manufacturing driving a near exponential growth in demand for melt atomized metal powders, an inherently RSP material, interest in the field looks set for continued growth. For this Special Issue in *Metals*, we welcome reviews and articles in all areas of experimental and theoretical rapid solidification, including the simulation of rapid solidification structures and processes.

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Message from the Editor-in-Chief

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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