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Microstructure and Defect Simulation during Solidification of Alloys

Guest Editor:

Dr. Ang Zhang
College of Materials Science and Engineering, Chongqing University, Chongqing, China

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Message from the Guest Editor

The solidification theory has advanced extensively in the past few centuries, offering an extraordinary guide for the optimization of material properties. Numerical simulation, which provides a better establishment of microstructure–processing–properties relationships, is attracting increasing attention in academia and industry. Computational approaches allow more accurate and detailed models (such as phase-field method, cellular automaton, and level set) to be constructed, shedding light on many solidification phenomena. The successful identification of solidification behavior and thermodynamic principles further promotes the development of simulation techniques in predicting microstructure and defects, which enriches the design and optimization of alloys and provides guidance for the improvement of material properties.

This Special Issue aims to review recent progress and new developments in microstructure and defect simulation during solidification. Review articles which describe the current state of the art are also welcome.

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Editor-in-Chief

Prof. Dr. Maryam Tabrizian
1. Department of Biomedical Engineering, Faculty of Medicine and Health Sciences, McGill University, Montreal, QC H3A 2B6, Canada
2. Faculty of Dentistry and Oral Health Sciences, McGill University, 3640 Rue University, Montreal, QC H3A 0C7, Canada

Message from the Editor-in-Chief

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Contact Us

Materials Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

Tel: +41 61 683 77 34
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𝕏@Materials_Mdpi