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Solidification of Metals—Fundamental Uses and Applications of Modern Alloys

Guest Editors:

Dr. Nils Warnken
School of Metallurgy and Materials, University of Birmingham, Edgbaston, Birmingham B15 2TT, UK

Dr. Hiroto Kitaguchi
School of Metallurgy and Materials, University of Birmingham, Birmingham, UK

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Message from the Guest Editors

The solidification of metals and alloys is fundamental in metallurgy, with a long history dating back to the Iron Age. It be exploited for processing and forming metals. Specially, solidification has become an important area of research in multiple engineering fields, such as casting and welding. Since the millennium, there has been renewed interest in the solidification of alloys, with its application in additive manufacturing, particularly in 3D printing, gaining significant attention. Further complications arise due to the complexity of the materials involved, which are a blend of elements from a broad range within the periodic table, and the technical complexity caused by the fine and multiple heat inputs. Consequently, the studies also involve solid-state problems. However, thanks to the technical advancements in testing and analysis, significant development has been made towards understanding these problems. This Special Issue encompasses the historical significance of the solidification of metals, as well as state-of-the-art processing techniques and research using modern alloys, combined with advanced analytical techniques and computational theories and predictions.

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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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