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New Advances in Light Metal Alloys for Additive Manufacturing

Guest Editors:

Prof. Dr. Paolo Mengucci

Depst. SIMAU, Università
Politecnica delle Marche,
Ancona, Italy

Dr. Eleonora Santecchia

Dept. DIISM, Università
Politecnica delle Marche,
Ancona, Italy

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Message from the Guest Editors

Additive manufacturing is unlocking design and geometrical constraints typical of traditional manufacturing, leveraging the production of complex and lightweight structures. This evolution involves a shift in the way in which a component is designed to the idea of using the smallest amount of material, and to optimize it to be built in a layer-upon-layer way. When it comes to metal, the particular processing conditions taking place inside additive manufacturing machines give rise to peculiar microstructures and unique mechanical properties.

Light alloys are of particular interest for additive manufacturing and represent some of the largest amounts of metallic materials processed by additive layer manufacturing (Ti-6Al-4V being the most widely 3D printed alloy in the world to date), with the exception of magnesium, which is slowly but remarkably taking its first steps in this field of research.

- additive manufacturing
- light alloys
- mechanical properties
- microstructural characterization
- process parameters
- powder metallurgy
- corrosion properties and surface finishing
- modeling and simulation





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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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