



## Metal Additive Manufacturing, Microstructures and Properties

Guest Editors:

**Prof. Dr. Shubhabrata Datta**

Department of Mechanical Engineering, College of Engineering & Technology, Kattankulathur, Chennai, India

**Dr. Manidipto Mukherjee**

Wire Arc Additive Manufacturing & 3D Printing, CSIR—Central Mechanical Engineering Research Institute, Durgapur, India

Deadline for manuscript submissions:

**closed (20 November 2023)**

### Message from the Guest Editors

Dear Colleagues,

Metal additive manufacturing (MAM) is now a key component of Industry 4.0-based smart factories. This issue precisely discusses the various materials used for the MAM process, in correlation with past, present and future trends, and along with their application potential.

It has been recognized that the microstructure and mechanical properties of MAM materials are highly influenced by the process parameters, path orientations, thermal gradients and deposition atmosphere. Therefore, the details of metallurgical and mechanical influence with respect to changing various input criteria will also be covered in this issue.

In addition, this Special Issue also includes different aspects of the MAM processes in line with the modeling and optimization of mechanical and functional properties and their respective microstructural representations. The application of multi-scale modeling techniques, including integrated computational materials engineering (ICME), and applications of artificial intelligence and machine learning tools in the domain of MAM, will also be covered in this issue.





an Open Access Journal by MDPI

## 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

*Materials* (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

## Author Benefits

**Open Access:** free for readers, with article processing charges (APC) paid by authors or their institutions.

**High Visibility:** indexed within Scopus, SCIE (Web of Science), PubMed, PMC, Ei Compendex, CaPlus / SciFinder, Inspec, Astrophysics Data System, and other databases.

**Journal Rank:** JCR - Q1 (Metallurgy and Metallurgical Engineering) / CiteScore - Q2 (*Condensed Matter Physics*)

## Contact Us

Materials Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland

Tel: +41 61 683 77 34  
[www.mdpi.com](http://www.mdpi.com)

[mdpi.com/journal/materials](http://mdpi.com/journal/materials)  
[materials@mdpi.com](mailto:materials@mdpi.com)  
[X@Materials\\_Mdpi](https://twitter.com/Materials_Mdpi)