



## Challenges in Additive Manufacturing: From Coupon Studies to Components

Guest Editor:

**Dr. Jan Haubrich**

Institute of Materials Research,  
German Aerospace Center (DLR),  
Linder Hoehe, 51147 Cologne,  
Germany

Deadline for manuscript  
submissions:

**closed (10 January 2022)**

### Message from the Guest Editor

Dear Colleagues,

Additive manufacturing (AM) of metallic materials still faces serious hurdles that need to be overcome before a widespread utilisation, particularly for highly loaded and safety-relevant components, can be achieved. A variety of technologies, such as laser powder bed fusion, are available today and new approaches, such as multi-material printing, are under development.

This Special Issue shall be dedicated to new developments in metal and multi-material AM, encompassing (yet not limited to):

materials properties–process relationships;  
multi-material AM and new AM approaches;  
process modelling, simulations and digitalisation;  
in operando process monitoring;  
alloy development for AM;  
transfer of process and materials knowledge from coupons to components;  
component manufacturing: build and post-processing strategies; and  
material characterisation in complex AM components.

I invite you to contribute original, high-quality submissions to this Special Issue. Regular and review articles as well as short communications from materials research, theoretical modelling, engineering and process simulation are welcome.

Dr. Jan Haubrich

# Special Issue





an Open Access Journal by MDPI

## Editors-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

### Prof. Dr. Yuguang Ma

State Key Laboratory of Luminescent Materials and Devices, South China University of Technology, Guangzhou 510640, China

## Message from the Editorial Board

*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 - Q2 (Metallurgy and Metallurgical Engineering) / CiteScore - Q1 (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)