Special Issue

Tailoring of Microstructures through Additive Manufacturing

Message from the Guest Editor

Additive manufacturing (AM) is well known and respected for its capability to facilitate the fabrication of highly complex geometries, which have greatly enhanced the possibilities in lightweight designs. However, that is not all that AM has to offer. Possibilities in new alloy design or regarding the local optimization of the microstructure to shape part properties and to enhance the performance on the material level were greatly overlooked in the past and are today slowly attracting the interest of the research community. Most AM technologies offer access to the microstructure, be it directly via the solidification pattern and the selection process in single-step AM processes such as powder-bed fusion (PBF) or direct energy deposition (DED), or via local alteration on the chemical composition level in multi-step AM processes such as material extrusion (MEX) or binder jetting (BJT). With this direct access to the local microstructure, and with it the local mechanical properties, new designs and an enhanced utilization of the material are possible, further allowing to shed weight and to cut down on the demand for raw materials.

Guest Editor

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Deadline for manuscript submissions

closed (31 October 2024)

Crystals

an Open Access Journal by MDPI

Impact Factor 2.4
CiteScore 5.0

mdpi.com/si/138279

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Message from the Editor-in-Chief

Welcome to *Crystals*, the journal dedicated to the fascinating world of crystallographic research! Crystals are more than mere decorative elements; they hold the key to understanding the fundamental structure of matter. Our mission is to explore the crucial significance of this research across various fields. From medicine to technology, chemistry to geology, crystals play a vital role. Their structure provides insights into new advanced materials, innovative drugs, and groundbreaking technologies. Through *Crystals*, we delve into the microscopic world to discover solutions that will shape the future. Join us on a journey through the *Crystals*, where science merges with beauty and innovation.

Editor-in-Chief

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