Special Issue

Progress and Challenges towards Additive Manufacturing of Structural Materials

Message from the Guest Editors

Additive manufacturing (AM) holds significant potential for the fabrication of structural materials, yet it faces significant challenges within the current methodologies such as laser powder bed fusion (LPBF), directed energy deposition (DED), and additive friction stir deposition (AFSD). Issues including hot cracks, porosity, residual stresses, and microstructural defects hinder industrial application. Furthermore, material selection and optimization complexities necessitate a deeper understanding. This Special Issue aims to highlight both progress and challenges in AM methods. Contributions exploring process optimization, materials development, and performance characterization are invited. We especially welcome practical studies on defect formation mechanisms and mitigation strategies. Theoretical modeling and simulation studies predicting and optimizing AM outcomes are vital for progress. These theoretical methods aid in speeding up material development and enhancing our understanding of AM technology. Therefore, we welcome contributions that expand knowledge in this area. We eagerly await your contributions.

Guest Editors

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Deadline for manuscript submissions

closed (20 December 2024)

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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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