



Progress and Challenges towards Additive Manufacturing of Structural Materials

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Message from the Guest Editors

Dear Colleagues,

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.





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Message from the Editor-in-Chief

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