Special Issue

Additive Manufacturing Research and Applications

Message from the Guest Editor

The use of components fabricated from powders is on the rise. Additive manufacturing and powder manufacturing technologies are rapidly evolving and growing in adoption. We are seeing trends toward these types of components in automotive, aerospace, and oil and gas. However, a number of challenges have been exposed by this rapid adoption. Depending on the technology, various forms consolidations techniques (e.g. laser melting, sintering, Hot Isostatic Pressing, etc.) are used to get components to various levels of “fully dense” which is generally thought of as >95% dense. The density and composition through the part define the parts mechanical properties to a large degree and now have more potential for variation. Better techniques for validating and qualifying components are needed. Some specifics include: of the systems to influence improvement within the system of systems. Papers on improved resolution density measurements, detection of variable composition, powder architecture in a component, innovation through 3D printing technology in medical, energy, agriculture and robotics technologies are welcome.

Guest Editor

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Message from the Editorial Board

Metallic materials play a vital role in the economic life of modern societies; contributions are sought on fresh developments that enhance our understanding of the fundamental aspects related to the relationships between processing, properties and microstructure – disciplines in the metallurgical field ranging from processing, mechanical behavior, phase transitions and microstructural evolution, nanostructures, as well as unique metallic properties – inspire general and scholarly interest among the scientific community.

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