Special Issue

New Trends of Quality Detection in Additive Manufacturing

Message from the Guest Editors

Additive manufacturing (AM) is a fast-growing industry that could lead to a revolution in the design of high-performance and lightweight parts. Optimized part design, process optimization and post-processing quality testing can be applied as tools to avoid part failure. Concerning new trends in quality detection in AM, the nondestructive testing (NDT) of AM parts and in situ monitoring are gaining relevance, accelerating the industrialization of AM and paving the way to resource-friendly AM manufacturing. NDT, especially computer tomography (CT), is often used during process development to determine the optimal process parameters. In production, NDT can be used to control the quality of the generated parts; thereby, optimal mechanical behaviour and good life expectancy can be realized. In addition, the application of artificial intelligence to quality management and the correlation of nondestructive part testing with in situ process monitoring data open up new possibilities for quality control in additive manufacturing.

Guest Editors

Prof. Dr. Christoph Leyens

1. Institute of Material Science, Technische Universität Dresden, 01069 Dresden, Germany;
2. Fraunhofer Institute for Materials and Beam Technology, Winterbergstr. 28, 01277 Dresden, Germany

Dr. Elena Lopez

Division Manager in Additive Manufacturing, Fraunhofer Institute for Materials andBeam Technology, Winterbergstr. 28, 01277 Dresden, Germany

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Applied Sciences
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
applsci@mdpi.com

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Editor-in-Chief

Prof. Dr. Giulio Nicola Cerullo
Dipartimento di Fisica, Politecnico di Milano, Piazza L. da Vinci 32, 20133 Milano, Italy

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