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State-of-Art within 3D Printing and Advanced Machining Processes

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Message from the Guest Editor

Dear Colleagues,

The term 3D Printing comprises different processes in which three-dimensional parts are obtained layer-by- layer. Over the years, they are becoming more and more used in different sectors such as aeronautical, automotive, medical, etc. Some general advantages of 3D the printing processes for metals over the traditional processes such as machining are that they allow obtaining complex parts, they produce less waste and, if the same geometry and material are considered, parts can be lighter.

Advanced Machining Processes allow obtaining parts that are difficult to be manufactured by means of conventional processes. Reasons to use Advanced Manufacturing Processes comprise high workpiece strength or hardness, machining of brittle materials, need of too slender tools in conventional machining processes, great geometrical complexity of the part and special dimensional and/or surface finish requirements, among other.

Special emphasis is given to the recent advances in the different techniques, to the characterization of the produced parts regarding surface finish, dimensional accuracy and/or mechanical properties, as well as to new applications of metallic materials.

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Message from the Editor-in-Chief

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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