

Metal Additive Manufacturing: an overview

Privire de ansamblu asupra metodei de fabricație Metal Additive Manufacturing

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Abstract

At present, manufacturing industry faces enormous challenges. In fact, in the last decades industrial technological advances were scarce in comparison with the fields of information technology or mobile communications. Nowadays, there is a fourth wave of technological advances towards the digital industrial technology denote by “Industry 4.0. Some of the pillars of the technological advancement include smart factory, cyber-physical systems, digitalization, networking, and additive manufacturing.

Additive Manufacturing plays an important role in this phase of industrial transformation since it allows for a revolution in the concept of parts manufacturing, logistics and product development, enabling distributed manufacturing and the production of parts-on-demand while offering the advantages to reduce costs, energy consumption and carbon footprint.

This paper reviews the state-of-the-art of this important, rapidly emerging, manufacturing technology by focusing on the production of metal parts and exploiting the alternative technologies available. The conclusions point that Metal Additive Manufacturing (MAM) is in the forefront of technology research and has potential to become an important manufacturing process as recognized in the Industry 4.0 basis.

Keywords

Additive Manufacturing, Metal Additive Manufacturing