

Additive Manufacturing: The next industrial revolution

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Additive Manufacturing (AM) which is fabrication by printing, is considered the next industrial revolution, due to the advantages over conventional subtractive manufacturing. The main technologies and advantages of AM will be discussed, along with potential markets in which AM have a clear added value. A major bottleneck in this field is the lack of functional and high-performance materials, which will be discussed in view of various applications. The synthesis and formulations of novel nanomaterials and inks will be presented, with their utilization in printed devices, responsive and 3D objects. New approaches for fabrication of printed plastic electronics will be presented, as well as new materials and processes for 3D and 4D printing of objects composed of ceramics, shape memory polymers, wood, elastomers and hydrogels.

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