Additive manufacturing (3dPrinting) and application to micro-mechanics

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Abstract

Additive manufacturing started 40 years ago. The targeted application was then (rapid-) prototyping. Today the situation has evolved and additive technologies are now considered as sustainable processes for the production of a large variety of parts (like customized parts, parts with internal geometry, small series etc ...).
This presentation will be an overview of the main additive manufacturing technology respecting reasonable mechanical tolerances. Even if they buzz today, the domestic low range 3d-printers will not be discussed!
A particular attention will be paid to applications related to mechanics and micro-mechanics. A short conclusion about the main difficulties and challenges for the future of additive manufacturing will be presented.

Bio

Dr.Eric Boillat graduated from EPFL in 1988 (physics engineer) and got his PhD in 1992 from the same school (applied mathematics). After a one year post-doctoral stay in Finland, he joined the Laboratory for Production Management and Processes (LGPP) at EPFL.
He is now in charge of a research group in the domain of selective laser sintering/melting of metallic powders.
He is teaching lectures about production processes (traditional and non-traditional) at the bachelor and master levels for student in mechanics, micro-mechanics and material science.