Recent Disruptive Advances in Additive Manufacturing- on the way to Industrial Acceptance

On 08.08.1984, thirty-two years ago, Charles W. Hull filed the patent "**Apparatus for Production of Tree-Dimensional Objects by Streolithography**" US 4,575,330. A new era in manufacturing started. This event followed by the inventions of the SLS 17.10.1986 Carl R. Deckard, FDM, 30.10.1989 Scott Crump and the 3DP binder printing by Emanuel Sachs MIT 20.04.1993. and much later The moto "**Complexity for Free**" (Terry Wholers) became reality.

The ASME formed the standardization group F42 Terminology; this defined in 2012 seven-process categories and defined this processes methodology as:
"**Additive manufacturing (AM) is a process of joining materials to make objects from 3D model data, usually layer upon layer, as opposed to subtractive manufacturing methodologies**".
On 13.02.2013,over three years ago, President Obama in his talk said "**3D printing that has the potential to revolutionize the way we make almost everything**"

From the very begging the involved great opportunities as well as hurdles were evident. Multi Process multi Materials and multi Applications a great innovation space was opened.

The year 2016 can be recognized as a new milestone in the AM on the way to industrialization. The Polymer process move toward high productivity and away from the Laser as energy source. The metal fusion processes advanced TQM and Automation hence productivity and confidence. The object building controlled voxel by voxel in polymers and metals opening even sophisticated opportunities introduced. Material for process and not process for materials became possible. Hybrid CNC-AM in agile revival.

AM is the enabling space for future innovation and progress also for sustainable products design & manufacturing

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