additive manufacturing

GAFOE conference, Irvine
2013, April 25.-28.

moderators:
Dietmar Drummer, Univ. Erlangen Nürnberg, Germany
Christopher Williams, Virginia Tech
Evolution of Production

1st Industrial Revolution
by development of mechanical production equipment using water and air pressure
1st mechanical loom, 1784

2nd Industrial Revolution
by implementing mass production using electric energy
1st el. conveyer, slaughterhouses of Cincinnati, 1870

3rd Industrial Revolution
by using electronic and IT for further production automation
1st progr. control unit Modicon 084, 1969

4th Industrial Revolution
based on cyber-physical systems; cloud production

1800  1900  2000
Trends

production management

- lean manufacturing
- quality management
- time-to-market

production processes (market demands)

- function density
- individualization/variants
- flexibility
Additive Manufacturing
Additive Manufacturing (AM) is the "process of joining materials to make objects from 3D model data, usually layer upon layer, as opposed to subtractive manufacturing methodologies. “

How Will 3D Printing Change the World's Cities?

Monday, April 8, 2013 - 8:00am PDT by JONATHAN NETTLER

Technology

Shrinking ports, less noxious trucks on our roads, and more self-sufficient towns. Neal Peirce describes the changes that 3D printing could bring to our world. Will it be comparable to "the steam engine, electricity, energy, the microchip?"
program

Frank Wöllecke

*Additive Technologies* focussing in industrial applications for metal and plastic parts“

Tim Shinbara

*Additive Manufacturing: an expose on the diversity of industrial use*

Thomas Rechtenwald

*Understanding process requirements* for additive manufacturing on the example of a beam based process for plastic powders

Carolyn Seepersad

*Design* for additive manufacturing