



State of the Art and Emerging Trends in Additive Manufacturing: From Multi-Material processes to 3D printed Electronics

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ABSTRACT

Additive manufacturing is considered a disruptive technology that is expected to revolutionize production technology and affect value chains on a global scale. The scope of accessible materials ranges from polymers to metals and ceramics as well as composite. The keynote will provide an overview of available manufacturing processes for the various material groups and discuss the specific advantages of additive manufacturing – e.g. realization of complex geometries, part count and assembly effort reduction, art-to-part approach - in view of selected applications and production scenarios. Further to this, selected emerging trends in additive manufacturing will be presented and discussed, including fabrication of long fibre reinforced composites, hybrid structures, multi-material techniques and associated promises with respect to local tailoring of material properties, and the integration of sensors and/or electronic systems in AM parts.

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Figure 1: The windmills of Chios, Greece

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Table 1: Number of hits on website

	Internet Explorer	Firefox
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October 2006	54	36
November 2006	123	87

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References

- [1] T.J.R. Hughes, *The Finite Element Method*. Dover Publications, Mineola, New York, 1987.
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