

Exploring the Potential of Additive Manufacturing / 3D Printing and the Move to Multi-Functionality

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Abstract

Additive Manufacturing, or 3D Printing as it is often termed, is now beginning to gain traction in both the public's imagination as well as becoming a seriously considered and implemented manufacturing tool by leading industry. The lecture will explore why additive manufacturing has the potential to disrupt current thinking in the context of:

- Its role as the enabler for low volume production and the democratization of manufacturing*
- The dramatic increases in design complexity & flexibility that are afforded by taking an additive approach*
- The cost effective product personalisation and customization possibilities*
- The reduction of the environmental burden of manufactured goods*
- The potential for new business models and supply chain realignment*
- Increased part functionality today, and multifunctionality in the coming years.*

The lecture will draw on real world industrial and consumer examples as exemplars and will also review the leading research that is being undertaken in the area.

Biography

Richard Hague is Professor of Innovative Manufacturing in the Department of Mechanical, Materials and Manufacturing Engineering at the University of Nottingham, Head of the Additive Manufacturing and 3D-Printing Research Group (3DPRG) and Director of the EPSRC Centre for Innovative Manufacturing in Additive Manufacturing. He has been working in the AM field for 20 years and has a background of leading and managing large multi-disciplinary, multi-partner research projects. Prof Hague's research interests are focused on AM specific processes, materials and design / design systems across a wide spectrum of industrial sectors with a particular interest in design / design systems; current research programmes are focused on the design and production of multifunctional additively manufactured devices. He is also Chair of the International Conference on Additive Manufacturing & 3D Printing and active within the ASTM F42 AM Standards initiative.