

30 April 2012. Additive Manufacturing Technologies and Potential Benefit to Local SMEs

Additive manufacturing, also known as rapid prototyping, rapid manufacturing and 3D printing, is a manufacturing process that can make parts or components directly from a CAD model through a layer by layer process. It has a significant advantages compared with traditional manufacturing processes, including: 1. No design geometry limitation, i.e. ability to design and manufacture structures of parts or components in optimised size and locations with complex structures; 2. No tooling required; 3. Near net-shape process; 4. Much shorter product development time; 5. Easy for custom design and possibility to quickly change product design; 6. Much less waste etc.

As to the application of Additive manufacturing technologies in industry, so far only large companies have embraced these technologies and bought them in-house, and there are still a number of barriers for small and medium size companies to overcome to enable them to take full advantage of these technologies.

To help local SMEs to understand Additive manufacturing technologies, and the potential benefits to their companies that they can realise by applying these technologies, WMG are hosting two **free to attend**, one day workshops, funded through the EPSRC Enterprise and Entrepreneurship scheme. At these workshops, SMEs can start to learn about both low cost and more advanced CAD software and 3D printing technologies, and with the help of the experienced Warwick SME team and Additive Manufacturing Group within WMG, gain hands-on experience of a number of these intuitive and low cost technologies, and find out how they can access these technologies and use them within their companies to improve their product development processes.

The first workshop was intended for those who have little or no experience of 3D printing systems, and will cover low cost software packages for 3D modelling and inexpensive 3D printing systems that are within the reach of a smaller company. The programme included demonstrations of software and 3D printing equipment, as well as sessions presented by WMG academics and industrial contributors.

A total of 25 people from local SMEs and our university attended this workshop, ranging in a lot of areas, such as light design, solar mounting system provider, life saving devices manufacturer, TV media, e-learning, fabric and film welding and tools and equipment provider etc. Some of them do not know much about these technologies and they were surprised by their capabilities; some of them are already in use of the these technologies and just want update their knowledge; some of them were very keen to engage with service provider and our SME team and AM research group to apply these technologies. Overall, the attendees were very satisfied with what they learned in the workshop and there was some potential for WMG and local SMEs to have some future collaboration.