

# Austech 2012: Additive Manufacturing moves beyond prototyping

Melbourne, 15 March 2012 – From 8 to 11 May 2012, innovative companies will be showcasing “more than CNC machining” at Austech 2012 in Sydney. Additive Manufacturing (AM) is the watchword for eight companies presenting the latest technology for 3D printing and digital manufacturing solutions in a dedicated additive/digital manufacturing pavilion over the four days of the show. AM, also referred to as 3D printing, is now playing an ever increasing role in a range of industries such as aerospace, automotive, medical and defence because of the many benefits it offers compared to traditional subtractive technologies. As a consequence, new machines have been introduced on both the high and low ends of the cost spectrum over the past couple of years.

These new developments have led to direct digital manufacturing (DDM) not only being used for rapid prototyping of new product designs, but increasingly for manufacturing end-user parts such as jigs, fixtures and other tools used in production and assembly processes. It is also being used to create custom components as well as medical and dental parts because DDM processes are faster, more affordable alternatives to manufacturing such parts via machining or injection moulding.

“Additive manufacturing is an emerging trend, which is rapidly gaining acceptance within the manufacturing community,” comments Joel Brown from Solidtec Solutions. “Events like Austech help to educate the broader market ensuring the technology is propagated at a more rapid rate. The 3D CAD market acts as an enabling technology to accelerate adoption of technologies like additive manufacturing as companies which adopt 3D CAD for design are able to leverage 3D data in all aspects of their business.”

One of the many reasons why manufacturers should follow the AM developments is speed: AM processes require no tooling and have a digital foundation. There are virtually no delays in moving from a robust digital design to the manufacturing process. There is direct, uninterrupted progression from concept to part.

“Austech having a dedicated pavilion showcasing AM/3D Printing is an excellent medium for potential customers to see first-hand how companies are now actively saving time and money while accelerating the product to market timetables,” says Bruce Jackson from 3D Printing Systems Australia. “The costs for 3D printing systems are getting lower and it is now an affordable desktop addition to any product design department.”

Tasman Machinery Managing Director Dermid McKinley thinks that the market is in a point of transition, where early adopting Australian manufacturers are beginning to understand and invest in AM technologies. “Where previously AM was very much aimed at the prototyping and design sectors, we now have customers running their machines on a 24/7 basis, looking for maximum capacity utilisation and expecting service and support levels of our traditional manufacturing customers. This is quite a turnaround from the previous view of AM technologies.”

We all know we can never compete against the mass production of low cost economies, but Australia can certainly compete in manufacturing markets where complexity and sophistication of design is necessary. In almost all manufacturing environments, product designs are dictated by the constraints in the ability to manufacture parts. Product features are compromised. Multiple parts are used when a single part would suffice. AM eliminates many of those manufacturing constraints and makes mass customisation possible.

Thanks to the technology’s freedom in terms of shape and design, it enables customised, optimum products to be created. By virtue of the geometric freedom provided, and the high elasticity of the material involved, moreover, it is possible to manufacture snap-fit connections, complicated form-locking elements, spring-force connections and geometries like leaf springs or helical springs. This means fewer parts have to be mounted or connected with tools.

As a consequence, more and more businesses bring this technology in-house that previously was mainly provided through service bureaus. According to Complex Managing Director Fred Carlstrom, machine prices for smaller machines start from around \$10,000 which is quite affordable but you still pay up to a \$1,000,000 for a large SLA (Stereo-Lithography) machine.

“Metal sintering, laser or electron beam, is also generating a lot of interest because the technology unlocks all design constraints,” he adds. “With additive manufacturing you can pretty much design and manufacture any design without having to consider how it is going to be manufactured or consider what tooling to use because there is no tooling required.”

However, AM does not aim at replacing conventional machining processes. The technologies will co-exist and complement each other to optimum effect. As part of the Additive Manufacturing Pavilion, exhibitors will help interested visitors to find the right approach to define the correct application categories and to replace existing conventional technologies only where commercial and technical advantages are to be gained.

“The focus on AM and rapid prototyping at Austech is timely and appropriate,” concludes Anna Elliott, Marketing Manager at Memko. “In the rapidly evolving market, low volume and customised manufacturing will play an ever increasing role for Australian customers and it is important to have a platform for showcasing and promoting the diverse solutions available today.”

Participating companies:

3D Printing Systems [www.3Dprintingsystems.com.au](http://www.3Dprintingsystems.com.au)

3D Systems Asia-Pacific [www.3dsystems.com.au](http://www.3dsystems.com.au)  
Complex [www.complex.com.au](http://www.complex.com.au)  
Memko [www.memko.com.au](http://www.memko.com.au)  
Objective 3D [www.objective3d.com.au](http://www.objective3d.com.au)  
Solidtec Solutions [www.solidtec.com.au](http://www.solidtec.com.au)  
Tasman Machinery [www.tasmanmachinery.com.au](http://www.tasmanmachinery.com.au)  
WYSIWYG 3D [www.wysiwyg3d.com.au](http://www.wysiwyg3d.com.au)

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