Rapid.Tech (14–16 June 2016), Messe Erfurt

13th Rapid.Tech – first "Automotive Industry" trade forum features high-profile speakers

Additive Manufacturing – potential and challenges for the automotive industry

Erfurt, February 2016: ***Additive Manufacturing processes and 3D Printing have become well established in the automotive industry. Applications now go far beyond prototype production, but developments are usually kept out of the public eye. Rapid.Tech's first "Automotive Industry" trade forum promises to deliver new insights, with high-profile representatives from industry and research.***

The automotive industry has once again proven to be an engine of innovation for technology, this time for Additive Manufacturing (AM) and 3D Printing. For example, the Volkswagen Group revved up development at the start of 2014 by networking the AM-related activities of its individual brands via a corporate technology workstream. Dr Steffen Landua, Director of Technology Development, Toolmaking and Press Shop, heads up the related Metal 3D Printing Working Group together with his professional peers. Messe Erfurt is proud to have engaged this expert to present the keynote lectures on the third day of this year's Rapid.Tech, which runs from 14–16 June.

Dr Steffen Landua's speech will cover the opportunities offered by metal 3D Printing in the manufacture of equipment and series components in the automotive industry, and what the resulting benefits are for manufacturers. In addition, Landua will illustrate the requirements placed on Additive Manufacturing by the automotive production sector with respect to aspects such as productivity, material selection, and installation spaces, as well as the readiness of 3D Printing technology for series production. The AM expert will also present real-world applications and describe the challenges inherent in the Additive Manufacture of series parts, thus indicating the essential areas of development that will enable further innovations.

The keynote lecture kicks off the inaugural "Automotive Industry" trade forum, which will cover a wide variety of subject areas. Accordingly, the presentation by Martin Friedrich of the BMW Group will focus on the use and validation of an indirect process route, using additive

tooling, for the manufacture of components for small series and niche applications with series-like properties. He will first examine the suitability of various tool materials and manufacturing technologies and then analyse the thermal tool properties, such as heat conductivity, and their effects on processes and component properties. Marc Vetterli, Inspire AG (Switzerland), will present the results of an industry project in which an innovative vehicle air conditioning system was produced using selective laser sintering (SLS) and optimised material. The system enables a reduction of around 50 per cent in the emissions caused by the air conditioning system. Robert Stache, Volkswagen AG, will first demonstrate that the high design freedom and accuracy of selective laser melting (SLM) makes it possible to produce tools that enable an increase in productivity of up to 20 per cent in series production. However, the special material that has been used up to now represents a compromise due to its high cost and limited material properties. Stache will then present new test results with regard to the capability of using the SLM process to produce leak-tight parts from a tool steel that is well established for use in hot forming. He will also discuss the open issues relating to its use in series production. Kay Sauber, Audi AG, will talk about the process chain and the fields of action in Additive Manufacturing. He will illustrate the production process, from Additive Manufacturing-compliant design, to the generation of suitable files for 3D Printing, to the actual printing process including powder right through to aftertreatment and quality inspection. Sauber will also discuss open issues and the challenges which arise from the requirement for a digital process chain. Johannes Triebs, member of the Faculty of Production Engineering of EMobility Components (PEM) at RWTH Aachen University, will present the latest studies and applications in plastic-based Additive Manufacturing processes for the construction of prototypes and small series of electric vehicles. The presentation will cover overall vehicle concepts as well as rapid tooling. Christian Schilling, 3D Schilling GmbH, will describe an approach for the manufacture of large plastic parts from common industrial thermoplastics, with which Additive Manufacturing can be integrated in complex production processes. Thiemo Fieger, Daimler AG, will present a new approach for generic design guidelines for additive processes in the automotive industry as well as the results of initial testing on laser-beam-welded and resistance-spot-welded samples.

The presentations at the new “Automotive Industry” trade forum, like all presentations at the Rapid.Tech conference, will be simultaneously interpreted (German<>English).

Regarding both content and organisation, this forum has been prepared by Dr. Bernhard Mueller. The member of Rapid.Tech's advisory board has been a recognised expert for Additive Manufacturing processes for more than 20 years. Since 2014 Mueller also acts as the spokesman of the Fraunhofer Additive Manufacturing Alliance, which coordinates the research expertise of the 15 Fraunhofer Institutes in this field.

Celebrate the première at the 13th Rapid.Tech international trade show and conference for Additive Manufacturing, as well as the trade forums "Additive Contract Manufacturing", "3D Metal Printing" and "Electronic", "Engineering". "With the expanded conference programme and the extended, three-day duration of Rapid.Tech, we are keeping abreast of the latest developments in Additive Manufacturing and 3D Printing," explained Wieland Kniffka, CEO of Messe Erfurt.

The new conference areas, in addition to the well-established specialist forums "Medical Technology", "Dental Technology", "Design", "Aviation", "Tools" and "Science" and the User´s Conferences, will provide opportunities for intensive professional exchange on specific AM topics. For twelve years, the specialist conferencehas been the platform used by experts and newcomers to discuss the current state of Additive Manufacturing as well as developing trends.

Rapid.Tech in Erfurt, with its unique combination of trade fair and specialist conference, is among the world's most renowned events in the field of Additive Manufacturing and 3D Printing. For the fourth time FabCon 3.D, Germany's 3D Printing fair for semi-professional users and prosumers, will be held in parallel with the event.

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Contact for editorial matters:

SCHULZ.PRESSE.TEXT. , Doris Schulz, Journalist (DJV), Landhausstrasse 12,
70825 Korntal, Germany, Phone +49 (0)711 854085,
doris.schulz@pressetextschulz.de, www.schulzpressetext.de

Messe Erfurt GmbH, Thomas Tenzler, Gothaer Strasse 34, 99094 Erfurt,
Germany, Phone +49 (0) 361 400-1500, tenzler@messe-erfurt.de,
www.rapidtech.de; www.fabcon-germany.com