



Rapid.Tech 3D
22–23 June 2021
Messe Erfurt

Get a glimpse of the near and distant future of additive manufacturing

The AM Science and AM News forums at the digital Rapid.Tech 3D specialist conference will present the latest findings from research and development

(Erfurt, 10 June 2021). Right from the start, alongside its strongly user-focused trade forums, the Rapid.Tech 3D specialist conference has provided a platform for the latest scientific discoveries in additive manufacturing. Strict criteria are being used to select the talks for the AM Science forum, with contributions being subjected to double-blind evaluation by experts to ensure their scientific quality and topicality. “We’ve tightened the procedure yet again for this year’s session. Instead of submitting an abstract as in previous years, potential speakers were asked to provide their talk in full when applying for one of the twelve slots. Despite the additional effort this requires, we’ve seen a significant increase in the number of papers submitted. They show that research is increasingly focusing on resource efficiency and sustainability. And this is consistent with the overarching theme of this year’s conference. Which is why we’ll also be publishing contributions in other ways, such as in the conference proceedings,” explains Dr Stefan Kleszczynski, Director of the Rapid Technology Center at the University of Duisburg-Essen, who is overseeing the content of the AM Science forum.

Presentations on the first day of the digital Rapid.Tech 3D on 22 June 2021 will include new developments in plastics, with Dr Jochen Schmidt of the Friedrich-Alexander University of Erlangen-Nuremberg reporting on innovative raw materials for the powder-bed-based fusion of polymers. Andreas Jaksch of the same institute will discuss the influence of flow additives on processing and component quality in the selective laser melting of Nylon 12. And Livia Wiedau of the University of Duisburg-Essen will talk about the effect of post-processing methods on the properties of laser-sintered polypropylene parts. Daniel Huber of BMW will speak about research into metallic 3D printing. His study analysed the effect of build direction on the mechanical properties of binder-jet manufactured micro-scale parts made from 17-4 PH stainless steel. Joachim Brinkmann of the Trier University of Applied Sciences will focus on the optimisation of resource requirements for additive manufacturing.

Part 2 of the AM Science forum on 23 June will be opened by Dr Wilhelm Meiners of Trumpf, who will present a methodology for the quantification of beam–plume interaction in multi-laser systems. Julia Förster of Fraunhofer IGCV will talk about the development of a powder-application module based on electrophotography, which improves additive powder-bed-based processes. And Karim Asami of the Hamburg University of Technology will report on resource-efficient design for support-structure connections in laser powder-bed fusion.

Daniel Beck of Bionic Production will demonstrate how artificial intelligence can help predict unplanned outages of metal-based additive-manufacturing systems at the start of production, leading to significant cost savings.

Other talks will focus on health and sustainability in connection with 3D printing. Alexander Mahr of Fraunhofer IPA will speak about a method for the systematic assessment of material-specific human-toxic hazards in additive-manufacturing processes. The contribution of peach kernel powder to sustainable additive-manufacturing processes will be the focus of the talk by Dr. Lisa Kühnel of Freiberg University of Mining and Technology, who will explain how this renewable raw material can be used in binder jetting.

The forum will conclude with a talk by Dr Jens Butzke of the Darmstadt Institute of Polymer Engineering, who will focus on the development of systems and processes that use extrusion-based additive manufacturing to produce rotationally symmetrical and asymmetrical components.



While the AM Science forum deals with work that is at an early stage of development, the AM News forum, which is new to the specialist conference this year, focuses on materials and processes that go beyond the technology currently in use but are already well suited to practical application. Matthias Schmidt-Lehr of Ampower will kick things off with a talk on market developments and new technologies in metallic 3D printing that will be ready for industrial application in the next five years. Current and future standards and quality-assurance measures that must be complied with under the Pressure Equipment Directive when using additively manufactured components will be the subject of the talk by Stephan Braun from fittings and pump manufacturer KSB.

Christoph Lindner of Stratasys will present a new technology platform for the production of plastic components: Selective-absorption fusion technology will enable the leading manufacturer of 3D printing systems to add cost-effective, rapid and traceable plastics manufacturing to its portfolio. Andreas Wegner and Timur Ünlü of AM Polymers will present new polymers for additive manufacturing, including a PBT that can be processed on standard AM systems with good elongation at break and a new high-performance, temperature-resistant polymer called Rolaserit X.

The AM Science and AM News forums are part of the digital Rapid.Tech 3D specialist conference on 22 and 23 June 2021. Sector-specific and technology-specific AM solutions will also be presented in sessions on Automotive & Mobility; AM in Construction Engineering & Architecture; Aviation, Medical, Dental & Orthopaedic Technology; Software; Processes & Construction; Tool, Model and Mould Making and in the Fraunhofer Competence Field for Additive Manufacturing.

The full conference programme is available at:

<https://www.rapidtech-3d.com/conference/conference-program.html>

Tickets can be booked online at:

<https://www.rapidtech-3d.de/fachkongress/ticketshop.html>

Alongside the conference from the Rapid.Tech live TV studio, exhibitors will present their products and services via a virtual exhibition. Messe Erfurt also offers a comprehensive range of digital networking services.

General information about the event: www.rapidtech-3d.com

The Rapid.Tech 3D specialist conference and accompanying exhibition is being broadcast online thanks to a partnership with Jena-based room AG. room AG provides all-round 2D, 3D, virtual-reality (VR) and augmented-reality (AR) solutions, and this practical solution is enabling the event to go ahead, even in the context of the pandemic. room AG has won multiple awards for its unrivalled start-up idea and for individual flagship projects, including at the German Innovation Awards 2019 and the Thuringia Innovation Awards 2020.

Website: www.room.com

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