



Rapid.Tech 3D
14 to 16 May 2024
Messe Erfurt

AM and the chemical industry: The “silent revolution” is getting louder
DECHEMA to present the Chemistry & Process Engineering forum on 16 May 2024 at Rapid.Tech 3D

(Erfurt, 18 April 2024). Rapid.Tech 3D is providing a platform for the process industry for the second time. The Chemistry & Process Engineering forum on 15 May 2024 will be hosted by DECHEMA, Germany’s expert network for chemical engineering and biotechnology.

“The feedback from last year’s debut showed that there is a great need for dialogue between experts from the chemical industry and additive manufacturing. The pressing challenges of sustainable business mean that AM is destined to play a key role in the process industry. Behind the scenes, a ‘silent revolution’ has been under way as the industry evolves. Completely new areas of application are opening up in chemistry. Around the world, people are working on 3D-printed catalysts and microreactors. Heat exchangers, flow reactors and nozzles with bionic structures are already on the market. Bioprinters are now a fixture in laboratories. This forum shines a spotlight on the importance of AM for the entire process industry chain. We are particularly pleased to be working with DECHEMA, our ideal partner for this,” says Dr Özlem Weiss. Weiss is a chemist and the managing director of Expertants GmbH, as well as a member of the Rapid.Tech 3D advisory board.

What makes Rapid.Tech 3D special: Gaining new insights through dialogue with other user industries

For DECHEMA, Rapid.Tech 3D offers an ideal environment to showcase the diverse links between additive manufacturing and the process industry, as DECHEMA executive director Dr Andreas Förster points out: “For one thing, the process industry supplies materials for 3D printing. It also uses additive manufacturing for rapid prototyping in the laboratory and technical centre, as well as in plant maintenance to replace components on site without long supply chains. While this was an extremely hot topic a few years ago, it then faded into the background somewhat, but nonetheless became part of the routine toolbox. Our partnership with Rapid.Tech 3D offers us the opportunity to shine a light on these questions: Where does the process industry, especially the chemical industry, work for or with 3D printing? What developments are still on the way? And – and this is the special thing about Rapid.Tech 3D – how does it compare with other user industries? What new insights can be gained by exchanging ideas with each other?”

Keynote from InnoSyn: AM as a powerful tool for industrial chemical processes

The keynote speaker on day two of Rapid.Tech 3D, Dr Jan Brummund, will offer an expert introduction to the Chemistry forum. The business development manager will talk about additive manufacturing as a powerful tool for industrial chemical processes. The Dutch company InnoSyn offers research and production services for all phases of the development and scaling of chemical processes. InnoSyn plays a pioneering role in the development of 3D-printed flow reactors. “Flow chemistry, in which the raw materials are continuously pumped through narrow channels and intermixed, offers several advantages over traditional batch processes, in which – in simple terms – the substances are stirred in a large vessel. In particular, this means better process control, greater safety, higher productivity and more consistent product quality. 3D



printing can further enhance some of these advantages. This allows us to create much finer reactor structures and thus reliably produce even the smallest diameters. We can then manufacture reactors that adapt precisely to the requirements of the chemical processes, rather than the other way round,” explains Dr Brummond, adding, “This flexibility is a huge advantage.”

InnoSyn will be providing an insight into its 3D-printed flow reactor modules in the table-top exhibition. This show connects the Congress Center speeches and the exhibition hall not only in terms of space, but also in terms of content. At the 20th edition of Rapid.Tech 3D, the table-top exhibition will give companies the opportunity to showcase 3D versions of the exhibits and services that they present in 2D at the specialist conference.

How BASF and Evonik use AM to improve plant production and maintenance

Major players in the global chemical industry, such as the German companies BASF and Evonik, as well as start-ups such as CatIP from the Netherlands and Oqton from the USA, will be at the forum to present their AM applications and solutions for the process industry.

BASF has set up an Additive Manufacturing (AM) Centre in its Global Engineering Services division. The AM team manufactures 3D-printed components, setting rigorous standards in component integrity, safety and certification. Based on this expertise, additively manufactured components are playing an increasingly important role in the maintenance strategy of chemical plants. Lisa Stolz, Team Leader of Additive Manufacturing and Precision Engineering Workshops, and Dr Daniel Urbanczyk, Senior Manager for Technical Services, report on the use of AM components for maintenance and reliability solutions.

By using modular plant construction and 3D-printed process equipment, Evonik is implementing next generation technologies in the form of technology platforms. Dr Senada Schaack, Head of the Evonik Competence Center for Simulation and Additive Manufacturing SAM 3D, will present examples of procedures and effects. Evonik has demonstrated in various projects that modular plant concepts increase flexibility and efficiency in the process industry thanks to standardised interfaces and the plug-and-produce principle. Modular approaches are also ideal for the use of 3D-printed components.

Exentis: New additive paths in the pharmaceutical sector

Dr Gereon Heinemann, CEO of Exentis Group AG, will give a talk on “New additive paths in pharmaceutical production and galenics – serial multi-active ingredient tablet production”. The Swiss company has developed a 3D technology platform that allows for large-scale production in many areas, including the pharmaceutical industry.

An advance look at the additively manufactured containment shroud from KSB at Rapid.Tech 3D

Stephan Braun, Business Development Manager Additive Manufacturing at pump manufacturer KSB, and Martin Boche, Deputy Head of Additive Manufacturing at the Materials and Welding Technology Certification Centre of TÜV SÜD Industrie Service GmbH, will discuss the use of additively manufactured components in critical applications. They will be looking at the present situation regarding standardisation as well as current materials for the chemical industry and the methods used for testing and qualification. KSB also has a preview in store for Rapid.Tech 3D. The company will be introducing the AM community to the first serial production 3D-printed containment shroud – the MagnoProtect – for mag-drive pumps in the process industry. MagnoProtect is an additively manufactured containment shroud designed with a comprehensive structure of vacuum channels, enabling any damage to the containment shroud to be identified before a leak occurs. It will make its full debut in June at AICHEM, the world forum for the process industry.

Gerald van Santen is to report on the advantages of 3D metal printing for enhancing the performance of catalytic reactors. The CEO and co-founder of the Dutch start-up CatIP B.V. will be presenting examples of applications from the environmental and energy sectors, among others.



To close the forum, AM and chemistry experts from industry and science will discuss how additive manufacturing contributes to CO2 neutrality in the process industry. Prof. Dr. Ingomar Kelbassa from Hamburg University of Technology takes a look at smart reactors, while Robert Larsson from the Swedish company SSAB will examine emission-free AM powders.

Specialist conference with eight industry and science forums

Alongside the Chemistry & Process Engineering trade forum, other forums at the Rapid.Tech 3D specialist conference provide insights into the latest AM developments and applications. On the first day of the event (14 May 2024), the AM4industry format organised by the Additive Manufacturing Working Group of the German mechanical and plant engineering association VDMA will welcome visitors for the first time. The established Aerospace forum is also set to take place that day, as is the Additive Manufacturing Science forum, which will continue into the second day (15 May 2024). On day two, the Software, AI & Design and Innovations in AM forums will also be welcoming visitors. The final day (16 May 2024) will see the second part of the Innovations in AM forum, as well as the Mobility and AM Science by Fraunhofer forums.

About Rapid.Tech 3D:

In just two decades, Rapid.Tech 3D – with the specialist conference as its centrepiece – has become one of Central Europe's leading additive manufacturing trade events. This year's event will be held from 14 to 16 May at Messe Erfurt.

More at: www.rapidtech-3d.de/en

About Messe Erfurt GmbH:

Central Germany's largest trade show and conference venue, Messe Erfurt has established itself as a forum for businesses, scientists, doctors, trade unions and many other institutions. Every year, it hosts over 220 events, conventions, conferences, trade fairs, exhibitions, corporate events and concerts, attracting over 650,000 visitors.

More at: www.messe-erfurt.de/en/

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