

MEDIA INFORMATION

Hannover Messe: 3D-printed brake caliper at the Hamburg stand

At the joint Hamburg stand, Fraunhofer IAPT will be presenting the world's largest functional titanium component produced using generative technology. Also European XFEL, the world's largest X-ray laser facility, will be present. With a total of 11 exhibitors and a broad industry-network, the joint Hamburg stand at Hannover Messe will serve as a showroom for groundbreaking innovations.

Hamburg / Hanover, 19 April 2018. Hamburg-based research institution Fraunhofer IAPT will be presenting a milestone in additive production in the automotive industry at the joint Hamburg stand at Hannover Messe from 23 to 27 April. With the completion of a newly developed 3D-printed titanium brake caliper, the Fraunhofer Institute for Additive Production Technologies (Fraunhofer IAPT), Bugatti and Bionic Production AG have achieved a truly pioneering development in the automotive industry. This highly innovative 3D product will be entering series production in Hamburg.

3D printing revolution hits the car industry

Titanium is mainly used in the aviation and aerospace industries as it is much more resilient than aluminium. The new titanium brake caliper has a weight of only 2.9 kg and is thus 41% lighter – and considerably more resilient – than the traditional aluminium caliper (4.9 kg). The 8-piston monoblock caliper is not only the world's very first 3D-printed brake caliper for automotive vehicles, but also the largest 3D laser-printed functional component made of titanium as well as the largest caliper in the overall automotive industry. The first working trials for use in serial production are scheduled to begin as early as mid-2018.

With Fraunhofer IAPT, Hamburg is a leading location for the innovative 3D printing industry, especially in the niche segment of additive development and the production of metal parts. Bugatti's super sports cars have placed the company at the forefront of technological development and innovation at the automotive industry's extreme end of performance. Fraunhofer IAPT is one of the global leaders in the area of scientific-industrial 3D printing technology transfer.

"Hamburg is well on its way to becoming one of Europe's leading centres for research and innovation," says Hamburg's Second Mayor, Katharina Fegebank. "3D printing and nanotechnology are cutting-edge fields that will serve as key drivers for innovation and development in our city."

World's largest research X-ray laser

With European XFEL, one of the largest and most ambitious European research projects will also be featured at the joint Hamburg stand. Located in Hamburg and Schleswig-Holstein, the European X-ray Free Electron Laser (XFEL) is the world's largest X-ray laser facility. It generates extremely intense X-ray laser flashes and is used by researchers from around the world.

In March 2018 the UK joined European XFEL, becoming the research body's twelfth member state. In addition, Denmark, France, Germany, Hungary, Italy, Poland, Russia, Slovakia, Spain, Sweden, and Switzerland have signed the European XFEL convention.

The European XFEL is an international research facility of superlatives in the Hamburg Metropolitan Region: 27,000 X-ray flashes per second and a brilliance that is a billion times higher than that of the best conventional X-ray sources will open up completely new opportunities for science. Research groups from around the world will be able to map the atomic details of viruses, decipher the molecular composition of cells, take three-dimensional "photos" of the nanoworld, "film" chemical reactions, and study processes such as those occurring deep inside planets. The construction and operation of the facility is entrusted to the European XFEL GmbH, a non-profit company that cooperates closely with the research centre DESY and other organisations worldwide. The company has a workforce of about 300 employees and the facility went into operation in September 2017. With construction and commissioning costs of 1.22 billion euro (at 2005 price levels) and a total length of 3.4 kilometres European XFEL is one of the largest and most ambitious research projects in Europe.

Hamburg at Hannover Messe

Fraunhofer IAPT will be one out of 11 exhibitors at the joint Hamburg stand in Hall 2, "Research & Technology". At Stand A26, "Future Hamburg", the following stakeholders will be featured: German Electron Synchrotron DESY; European XFEL GmbH; Fraunhofer Institute for Molecular Biology and Applied Ecology IME ScreeningPort; Fraunhofer Center for Maritime Logistics and Services CML; Fraunhofer Institute for Additive Production Technologies IAPT; Hamburg Innovation GmbH; Hamburg Invest; Hamburg University of Applied Sciences (HAW Hamburg); Orokoko GmbH; Hamburg University of Technology (TUHH) as well as ZAL Center of Applied Aeronautical Research. The stand will be coordinated by Hamburg Invest, the one-stop agency for relocation and investment in Hamburg. Dr Rolf Strittmatter, managing director of Hamburg Invest, explains: "Hamburg has a long track record as an investment location. Many important processes and products have been developed here, and Hamburg continues to be one of Germany's main centres for development. And this is what we'll be presenting at the Hannover Messe." www.future.hamburg

Events at the Hamburg Stand:

Monday, 23 April 2018

11:30 a.m. Stand opening "Future Hamburg"

with Frank Horch, Minister for Economic Affairs, Transport and Innovation of the Free and Hanseatic City of Hamburg

Wednesday, 25 April 2018

6:00 p.m. Hamburg Evening

with Katharina Fegebank, Second Mayor of the Free and Hanseatic City of Hamburg

Hall 2, Stand A26

Electronic Press Kit

Media representatives can find further information on events, projects and interview partners from Hamburg at Hannover Messe at:

www.marketing.hamburg.de/hannover-messe.html

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www.lzn-hamburg.de/

Hamburg – free port of innovative ideas

With 1.8 million inhabitants, Hamburg is Germany's second largest city and takes a leading position within numerous fields of technology. Boasting strong industries such as civil aviation, wind power and port logistics, the city in Germany's north is thus more diversified than many other large cities. Hamburg is a leading technology centre e.g. in the following key areas: materials & processes, mobility, energy & marine technology, life sciences, as well as digitisation as a cross-cutting field.

Hamburg is a centre for laser and X-ray technology as well as for innovative lightweight construction. In the CFK-Valley in Stade, for instance, some 100 companies and research facilities develop innovative lightweight constructions using CFRP and fibre composite materials. At Fraunhofer IAPT, lightweight components for the aviation industry are developed via a 3D printing process. And at the ZAL Center of Applied Aeronautical Research, the German Aerospace Center (DLR) and other stakeholders are successfully involved in applying 3D printing and industry 4.0 to aircraft construction.

As an international business hub, Hamburg has a reputation for contributing to the world market and is home to numerous patent champions. Well-known brands from Hamburg and the Hamburg Metropolitan Region include e.g. Philips, Airbus, Beiersdorf, tesa, Hauni, Still, Jungheinrich, Olympus, Eppendorf, Lufthansa Technik, Navigon, Weinmann Medical Technology, Senvion, as well as Nordex and NXP Semiconductors. In addition, there are various "hidden champions" that create and develop products for the global marketplace from Hamburg. www.mediarelations.hamburg.de