

Press release on the Digital Photonic Production research campus in the Photonics Cluster on the RWTH Aachen Campus, issued February 27, 2015

## **BMBF's Digital Photonic Production research campus opens with a key moment**

With the United Nations having declared 2015 the "International Year of Light and Light-Based Technologies," the opening of the BMBF's new "Digital Photonic Production (DPP)" research campus at the end of January was perfectly timed. Located on the RWTH Aachen Campus, the DPP research campus is destined to become well known as the home to a new kind of collaboration between science and industry. The aim of the DPP research campus is to research and further develop light as a tool in the production of tomorrow.

"Aachen is Germany's only university location to feature two research campuses funded by our ministry," explained Thomas Rachel, parliamentary state secretary at the German Federal Ministry of Education and Research (BMBF), at the DPP opening event held at the Fraunhofer Institute for Laser Technology ILT on January 23, 2015. BMBF-funded work at Aachen falls into two categories: While the Flexible Electrical Networks Consortium (FEN) is developing new ways of transporting energy using direct current, the DPP research campus will focus on the basic physical effects of light as well as on new methods of using it as a tool in the industrial production of tomorrow. Of course this refers to lasers, which have already become a truly universal manufacturing tool – whether for dental implants, automotive parts, or aircraft components.

Among the 20 industry partners are small and medium-sized enterprises as well as large companies such as Siemens AG. Dr. Nicolas Vortmeyer is Chief Technology Officer at Siemens' Power and Gas division, which manufactures turbines for power plants. He is convinced of the merits of 3D printing – a process that uses lasers to build parts up layer by layer. Vortmeyer explained why Siemens got involved in the DPP research campus: "3D printing removes

the limitations we've had to struggle with in manufacturing and development. This technology allows us to manufacture spare parts even for older power plant turbines we no longer have the plans for – and to do so relatively quickly.” Vortmeyer predicts that this collaboration will “speed up the creative process exponentially.” BMBF Parliamentary State Secretary Rachel, who was at Aachen to hand over the official approval notices for the DPP projects, also expects great things to come out this new location: “The DPP research campus is set to play a key role in connecting industry, science and society.”

It became clear just how fast these key Aachen technologies work when the opening event's host, Prof. Dr. Reinhart Poprawe, spokesman for the DPP research campus and director of Fraunhofer ILT, presented Rachel with an aluminum key that institute employees had made using a 3D printer.

Alongside additive manufacturing methods (direct photonic production), work at the DPP research campus will also harness manufacturing techniques that use ultrafast lasers (femto photonic production) as well as new kinds of VCSEL beam sources – for example to selectively functionalize nano-scale layers (nano photonic production). The BMBF is funding nine such research campuses across Germany and intends to fund the DPP research campus to the tune of 2 million euros per year for up to 15 years.

Captions:



High-tech key moment at Aachen (left to right): Dr. Nicolas Vortmeyer (CTO of Siemens' Power and Gas division), Christian Hinke (Managing Director of the Digital Photonic Production research campus), Rudolf Henke (member of the German Bundestag) and Thomas Rachel (parliamentary state secretary at the German Federal Ministry of Education and Research) marvel at an aluminum key made using a 3D printer at the Fraunhofer Institute for Laser Technology ILT. Photo: Fecht



Prof. Dr. Reinhart Poprawe (right) presenting Thomas Rachel, parliamentary state secretary at the German Federal Ministry of Education and Research, with a 3D-printed key that will really open doors: "The Digital Photonic Production research campus is set to play a key role in connecting industry, science and society." Photo: Fraunhofer ILT

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