

## Siemens offers industrialized 3D printing for complex challenges in various industries

- **Opening of the new state-of-the-art 3D printing facility at Materials Solutions Ltd. in UK**
- **Comprehensive approach to manufacturing high-end parts for customers in challenging industries**
- **End-to-end digitalized 3D-printing production facility to support serial production**

With the opening of the new state-of-the-art 3D printing facility at Materials Solutions Ltd. in the U.K., Siemens is continuing to drive the industrialization of additive manufacturing (AM). The investment of €30 million in the new U.K. facility enables the growth of the business by doubling the capacity of 3D-printing machines to 50 and will also increase its post-processing capabilities. Siemens is taking AM out of the traditional research laboratory into an industrialized production factory. By employing industrial methods to scale up production, Siemens can bring down the costs of AM by manufacturing high-end complex metal parts in serial production in a robust industrial environment. With an entire digital end-to-end chain, Siemens is efficiently solving complex customer challenges by producing high-end serial parts for Siemens Power and Gas and customers in the aerospace, automotive, motorsport, and other industries.

The new factory has a footprint of 4,500 m<sup>2</sup> and is adopting a true industrial approach, housing multiple machines across a shop floor. The parts move through a variety of processes, with engineers ensuring that they're compliant. The digital approach embedded in the factory site creates a modern digital factory and provides end-to-end service to customers. The factory employs many of Siemens' latest digital factory and AM technologies, including an end-to-end PLM chain, Siemens' computer-aided design software NX, and MindSphere, the Siemens cloud-based,

open IoT operating system that connects products, factories, systems, and machines with data analytics. Virtual production begins long before the actual printing. By leveraging Siemens' design experience and expertise, Materials Solutions Ltd. is offering various design services for AM. Siemens provides engineering services and consulting to help create a digital twin of the 3D printed component. The company's comprehensive experience is the ideal prerequisite for automating and thereby industrializing 3D printing, including post-processing, until qualification and certification – all under one roof.

“Siemens is the only company with such a comprehensive portfolio for driving the industrialization of AM. Built on the foundation of our global Siemens R&D and manufacturing footprint, the new facility is a huge step in pioneering the industrialization of high-end AM,” said Willi Meixner, CEO of the Siemens Power and Gas Division. “Combining the full power of Siemens with the strengths of Materials Solutions Ltd. offers unique and proven technologies for our in-house gas turbine business and for external markets and industries. We already have a significant number of core AM components in our portfolio.”

Siemens' leading metal AM technology has been validated through its in-house application in the company's Power and Gas and Power Generation Services businesses. It has been additively manufacturing hot rotating parts for use in its gas turbines, and the company has now gathered more than 110,000 hours of engine experience with 3D-printed gas turbine parts in fully operational power plants.

Materials Solutions Ltd. is also supporting Siemens' latest HL-class gas turbines with AM components in serial production to drive emission reduction and increased performance in the gas turbines. Siemens will use AM technology to manufacture combustion components for the SGT5-9000HL gas turbine, and they will be used for the first time by the Scottish energy company SSE plc at the combined cycle power plant Keadby 2 in Lincolnshire, U.K..

“Whether it's materials, machines, processes, or the digital value chain, we're always pushing the boundaries of technology. Printing components for gas turbines means the highest material and technology requirements. If you can print a gas turbine blade, you can print pretty much anything,” said Markus Seibold, Vice President AM at Siemens Power & Gas. “The end-to-end software and automation

solutions – combined with our comprehensive expertise and our large printer fleet – makes Siemens a world leader in industrializing additive manufacturing, driving productivity, and getting complex 3D-printed parts right the first time. We're in the unique position of being able to leverage our advanced user expertise to bring these solutions to external customers via Materials Solutions Ltd.”

Siemens recently brought a 100-year-old Ruston Hornsby vintage car back to life using reverse engineering to recreate its steering box. With no original technical drawings available, Siemens digitally reassembled the parts of the broken steering box and created a working model that could be additively manufactured.

Materials Solutions Ltd. has extensive experience serving its customers in some of the most challenging industries, from power generation, aerospace, automotive, and motorsport to tooling and processing. The company has already additively manufactured thousands of functional parts and provided legacy parts through reverse engineering and tooling to over 80 customers worldwide. In 2016, Siemens acquired a majority stake (85 percent) in Materials Solutions Ltd., which was established in 2006.



### **Siemens is driving the industrialization of additive manufacturing**

The investment of €30 million in the state-of-the-art 3D printing facility at Materials Solutions Ltd. in the U.K enables the growth of the business by doubling the capacity of 3D-printing machines to 50. The new factory has a footprint of 4,500 m<sup>2</sup> and is adopting a true industrial approach, housing multiple machines across a shop floor.

This press release and a press picture are available at

[www.siemens.com/press/PR2018120109PGEN](http://www.siemens.com/press/PR2018120109PGEN)

For more information on the Siemens Power and Gas Division, please see

[www.siemens.com/about/power-gas](http://www.siemens.com/about/power-gas)

For more information on additive manufacturing, please see

[www.siemens.com/press/3d-printing](http://www.siemens.com/press/3d-printing)

For more information on Materials Solutions Ltd., please see

[www.materialssolutions.co.uk](http://www.materialssolutions.co.uk)

### Contact for journalists

Susanne Weissmann

Phone: +49 9131 17-37750; e-mail: [susanne.weissmann@siemens.com](mailto:susanne.weissmann@siemens.com)

Follow us on Twitter at: [www.twitter.com/siemens\\_press](https://www.twitter.com/siemens_press)

**Siemens AG** (Berlin and Munich) is a global technology powerhouse that has stood for engineering excellence, innovation, quality, reliability and internationality for more than 170 years. The company is active around the globe, focusing on the areas of electrification, automation and digitalization. One of the largest producers of energy-efficient, resource-saving technologies, Siemens is a leading supplier of efficient power generation and power transmission solutions and a pioneer in infrastructure solutions as well as automation, drive and software solutions for industry. With its publicly listed subsidiary Siemens Healthineers AG, the company is also a leading provider of medical imaging equipment – such as computed tomography and magnetic resonance imaging systems – and a leader in laboratory diagnostics as well as clinical IT. In fiscal 2018, which ended on September 30, 2018, Siemens generated revenue of €83.0 billion and net income of €6.1 billion. At the end of September 2018, the company had around 379,000 employees worldwide. Further information is available on the Internet at [www.siemens.com](http://www.siemens.com).