

Formnext Connect

Siemens industrializes additive manufacturing with polymers with EOS and DyeMansion as partners

- **Siemens presents the first virtual additive manufacturing reference factory for selective laser sintering and industrial post-processing with its partners EOS and DyeMansion**
- **End-to-end software and automation solutions from the Digital Enterprise portfolio drive the industrialization for leading technology providers and users of additive manufacturing**

Under the motto "Partnering for the next step to industrialize Additive Manufacturing", Siemens is going to present at Formnext Connect its Digital Enterprise Portfolio for the industrialization of additive manufacturing as well as innovations with partners around new achievements in various additive manufacturing technologies. One highlight is the partnership with EOS and DyeMansion. Together, the three companies will present the first virtual additive manufacturing reference factory for selective laser sintering with polymers. Using the example of a midsole for footwear applications in which parameters such as design, fit and color are individually and economically taken into account, Siemens, EOS and DyeMansion will demonstrate what the next step towards the industrialization of selective laser sintering with polymers can look like along the entire production chain. "The automated chain of coordinated production steps from all suppliers, from design and printing to post-processing, as well as end-to-end IT integration, is crucial for high productivity and maximum flexibility. This applies to series parts as well as to a highly flexible lot-size-1 production for individualized products or

SIEMENS

Siemens AG
Werner-von-Siemens-Straße 1
80333 Munich
Germany



EOS GmbH
Electro Optical Systems
Robert-Stirling-Ring 1
82152 Krailling / Munich
Germany



DyeMansion GmbH
Robert-Koch-Straße 1
82152 Planegg / Munich
Germany

**Joint press release
by Siemens, EOS and DyeMansion**

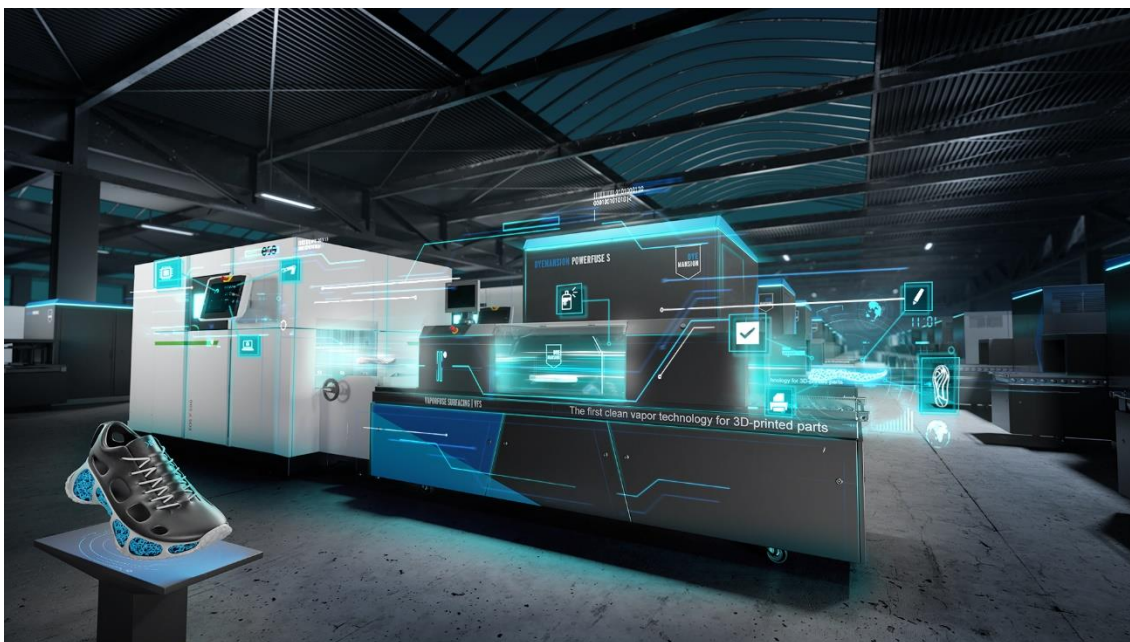
spare parts," explains Dr. Karsten Heuser, Vice President Additive Manufacturing at Siemens Digital Industries, and continues: "With the end-to-end digitization and automation solutions from Siemens, we have succeeded, together with our partners EOS and DyeMansion, in creating a seamlessly integrated end-to-end value chain for industrial additive manufacturing with selective laser sintering and industrial post-processing solutions using polymers."

For volume production, the EOS P 500, which can be seamlessly integrated into an automated production, is being used within this cooperation. Markus Glasser, Senior Vice President EMEA at EOS explains: "Our EOS P 500 manufacturing platform is ideally suited for laser-sintering of plastic parts on an industrial scale: One of the key advantages is the extensive automation capability for comprehensive productivity while maintaining consistently high part quality. This ensures economical component costs and allows the production of additive-manufactured components even overnight". For small, highly flexible AM factory cells, the FORMIGA P 110 systems are being used, which can now also access the Siemens NX design tools directly thanks to the EOSPRINT integration. With the NX design tools, users can design complex lattice structures and, using the example of the footwear application, simulate the digital twin of the created midsole in action on the people who wear it. Starting in December, NX will allow the seamless integration of arbitrarily complex shapes and structures into the design process using mathematical equations in order to make even greater use of the advantages of additive manufacturing for product design.

When it comes to post-processing, DyeMansion's coordinated three-step print-to-product workflow allows scaling from prototyping or small series production to additive series production. The integrated Siemens automation can be implemented in industrial shop-floor IT and offers optimized maintenance and operator handling. Felix Ewald, CEO & Co-Founder of DyeMansion about the new partnership: "Bringing the manufacturing technology of the future to series production level together with Siemens and EOS is a major task that we are proud to accomplish. Digitally integrated, automated and with the clear goal of providing solutions at the highest industrial level, we are united on this path. When three market leaders in their field join forces and take on a pioneering role together, this is not only a strong signal for the international industry, but also for Germany as a business location."

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With its Digital Enterprise Portfolio, Siemens offers the full use of digital twins, which reflect the real world for technology providers and users, to ensure that a component is manufactured right the first time it is printed. Based on the digital twin, a flexible and scalable manufacturing concept is being developed and validated that meets the productivity and cost requirements of traditional mass production even before the production starts. Siemens is going to present the first virtual Additive Manufacturing reference factory for selective laser sintering with EOS and DyeMansion at its virtual Siemens Additive Manufacturing Summit @ Formnext Connect. With the virtual reference factory, Siemens is also simultaneously expanding its digital Additive Manufacturing Experience Center and opening it with the beginning of Formnext Connect. In 2021, Siemens plans to install the key processes along the value chain of this use case in the physical Additive Manufacturing Experience Center too, in order to further accelerate the industrialization of additive manufacturing together with partners



Using a footwear application, Siemens, EOS and DyeMansion demonstrate what the next step towards the industrialization of selective laser sintering with polymers can look like along the entire production chain.

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This press release and press pictures are available at <https://sie.ag/35Xz0t7>

For further information about the Siemens Additive Manufacturing Summit @ Formnext Connect, please visit www.siemens.com/press/formnext2020

Take part at the Siemens Additive Manufacturing Summit @ Formnext Connect register here www.siemens.com/formnext. With the attached calendar file, you can reserve the keynote and the presentation "How Siemens industrializes the SLS high-volume production with EOS and Dyemansion" from 01pm to 02pm (CET).

Contact for journalists

At Siemens AG:

Katharina Lamsa

Phone: +49 172 841 35 39

E-mail: katharina.lamsa@siemens.com

At EOS GmbH Electro Optical Systems:

Martin Grebner

Phone: +49 89 893 36-2284

E-mail: martin.grebner@eos.info

At DyeMansion:

Sabrina Gugel

Phone.: +49 151 61064724

E-mail: sabrina.gugel@dyemansion.com

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Siemens Digital Industries (DI) is an innovation leader in automation and digitalization. Closely collaborating with partners and customers, DI drives the digital transformation in the process and discrete industries. With its Digital Enterprise portfolio, DI provides companies of all sizes with an end-to-end set of products, solutions and services to integrate and digitalize the entire value chain. Optimized for the specific needs of each industry, DI's unique portfolio supports customers to achieve greater productivity and flexibility. DI is constantly adding innovations to its portfolio to integrate cutting-edge future technologies. Siemens Digital Industries has its global headquarters in Nuremberg, Germany, and has around 76,000 employees internationally.

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. Active around the world, the company focuses on intelligent infrastructure for buildings and distributed energy systems and on automation and digitalization in the process and manufacturing industries. Siemens brings together the digital and physical worlds to benefit customers and society. Through Mobility, a leading supplier of intelligent mobility solutions for rail and road transport, Siemens is helping to shape the world market for passenger and freight services. Via its majority stake in the publicly listed company Siemens Healthineers, Siemens is also a world-leading supplier of medical technology and digital health services. In addition, Siemens holds a minority stake in Siemens Energy, a global leader in the transmission and generation of electrical power that has been listed on the stock exchange since September 28, 2020. In fiscal 2019, which ended on September 30, 2019, the Siemens Group generated revenue of €58.5 billion and net income of €5.6 billion. As of September 30, 2019, the company had around 295,000 employees worldwide on the basis of continuing operations. Further information is available on the Internet at www.siemens.com

EOS is the world's leading technology supplier in the field of industrial 3D printing of metals and polymers. Formed in 1989, the independent company is pioneer and innovator for comprehensive solutions in additive manufacturing. Its product portfolio of EOS systems, materials, and process parameters gives customers crucial competitive advantages in terms of product quality and the long-term economic sustainability of their manufacturing processes. Furthermore customers benefit from deep technical expertise in global service, applications engineering and consultancy www.eos.info

DyeMansion is the global leader in Additive Manufacturing finishing systems that turn 3D-printed raw parts into high-value products. From perfect fit eyewear to personalized car interiors, their technology makes 3D-printed products become a part of our everyday life. Starting in 2015 with the first industrial coloring solution for powder bed fusion parts, the Munich-based company extended its portfolio with advanced part cleaning and surfacing solutions for a wider range of 3D-printing technologies in the field of plastics. Today, DyeMansion's Print-to-Product workflow combines industry-leading hardware with the widest range of color options on the market. Their systems are applicable for Industry 4.0 and can be integrated seamlessly into various production processes. The ability to provide a flexible solution for both small batches and high volumes makes DyeMansion a trusted partner for future factories. Through close collaboration with customers across all industries, the 3D-finishing technology and expertise continuously grow with the market. Reduced cost per part, unmatched quality, and high sustainability are core values that drive each innovation of the fast-growing company. In addition to these principles, finding the right finish for every application is what drives them. www.dyemansion.com