

PRESS RELEASE

Number 67

WACKER HONORS RESEARCHERS FOR NEW 3D PRINTING PROCESS TO MANUFACTURE SILICONE PARTS

Munich, October 20, 2016 – Yesterday, Wacker Chemie AG conferred its “Alexander Wacker Innovation Award” on Dr. Frank Achenbach, Dr. Bernd Pachaly, Dr. Maximilian Peter and Dr. Ernst Selbertinger for their development of a new 3D printing process to produce silicone rubber parts. Previously, there was no mature industrial 3D printing technology available for silicones. That is why the process developed by the four WACKER researchers is considered a milestone in additive manufacturing. This year’s €10,000 innovation award, now in its eleventh year at WACKER, focused on process innovation.

The ACEO[®] technology developed by the researchers uses a drop-on-demand method. The printer head deposits tiny silicone droplets on a substrate. In this way, the workpiece is built up layer by layer. The silicone is formulated so that the droplets flow together before the curing process begins, activated by UV light. The silicone droplets and layers thus produce a homogeneous workpiece, which does not differ much from injection-molded parts. With the aid of water-soluble support materials, it is also possible to make parts with complex geometries, such as overhang materials and internal lattice structures.

The automotive and aerospace industries are currently the main customer sectors for 3D. At the moment, additive manufacturing is growing most rapidly in medical applications. Biomodeling and tailored, customer-specific geometries are particularly promising. In these types of applications, silicones can display their favorable properties particularly well. Silicones are heat resistant, flexible at low temperatures, transparent and biocompatible. They can furthermore be pigmented in any color and have good damping properties.

About ACEO®

WACKER offers services relating to 3D printing with silicone under the ACEO® brand. In a webshop, customers can upload their own designs and order 3D-printed silicone parts. These are then produced in the ACEO® print fab and shipped all around the world. Consultation and development services for the design and manufacture of silicone parts or assemblies round out the ACEO® team's range of services.

About the "Alexander Wacker Innovation Award"

Since 2005, the Munich-based chemical company has honored employees' outstanding R&D work at its annual research symposium. Named after the company's founder, the €10,000 "Alexander Wacker Innovation Award" alternates between the categories of product innovation, process innovation and basic research. Next year, this groupwide competition will focus on basic research.



WACKER Executive Board members Christian Hartel (left), Auguste Willems (2nd from right) and Rudolf Staudigl (right) with this year's winners of the "Alexander Wacker Innovation Award" (from left to right): Dr. Ernst Selbertinger, Dr. Bernd Pachaly, Dr. Frank Achenbach and Dr. Maximilian Peter. (Photo: Wacker Chemie AG)

Note:

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The company in brief:

WACKER is a globally active chemical company with some 17,000 employees and annual sales of around €5.3 billion (2015). WACKER has a global network of 25 production sites, 22 technical competence centers and 50 sales offices.

WACKER SILICONES

Silicone fluids, emulsions, rubber and resins; silanes; pyrogenic silicas; thermoplastic silicone elastomers

WACKER POLYMERS

Polyvinyl acetates and vinyl acetate copolymers in the form of dispersible polymer powders, dispersions, solid resins and solutions

WACKER BIOSOLUTIONS

Biotech products such as cyclodextrins, cysteine and biologics, as well as fine chemicals and PVAc solid resins

WACKER POLYSILICON

Polysilicon for the semiconductor and photovoltaic industries

Siltronic

Hyperpure silicon wafers and monocrystals for semiconductor components