

PRESS RELEASE

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WACKER HONORS RESEARCHER FOR THE DEVELOPMENT OF NEW, HIGH-PERFORMANCE OPTICAL SILICONES

Munich / Burghausen, July 10, 2009 – Wacker Chemie AG bestowed its annual “Alexander Wacker Innovation Award” on Dr. Philipp Müller yesterday for his development of a new class of high-performance optical silicones. Uniquely, these novel silicone elastomers allow optical lenses for light-emitting diodes (LEDs) to be produced directly on an LED chip. This is accomplished in a single step without any complex injection molding or replication processes. The simultaneous shaping and mounting of LED optics is exceptionally efficient, making the technology a breakthrough for the cost-efficient mass production of LEDs. This year’s €10,000 innovation award focused on product innovation.

“LEDs have enormous potential because of their energy efficiency. Accordingly, there are huge opportunities for growth in this market,” Executive Board member Dr. Wilhelm Sittenthaler said in his laudatory speech. “We are expecting annual growth rates of 20 percent. So, this innovation promises to be a complete economic success for WACKER.”

Light-emitting diodes are considered the light source of the future because they are highly luminous yet consume only a fraction of the energy required by conventional light bulbs or energy-saving lamps.

While modern, high-performance LEDs are around 10 times more efficient than incandescent light bulbs, they require a lens system to outcouple and diffuse the light emitted by the diode. The tremendous increase in LED performance within the last few years has meant that traditional organic materials are no longer capable of withstanding the light flux. For this reason, most modern high-performance LEDs will be manufactured in the future using silicone-based encapsulation and lens materials. There is a drawback, though. Up till now, the shape of the lenses (the lens geometry) could only be produced using difficult injection molding or replication processes.

LUMISIL[®] silicone elastomers finally make it possible to produce a moldless optical lens directly on an LED chip, using a dispensing process in a single production step. Perfect replication of the lens geometry is accomplished through a novel, UV-activated curing mechanism. LUMISIL[®] 419 UV's excellent adhesion even makes it possible to forgo the use of a silicone encapsulant, since, in addition to providing the lens material, it also protects the LED chip. In this manner, LED components with silicone lenses can now be manufactured in very large quantities with comparatively modest plant and process investment. LUMISIL[®] is already being used by one of the global leaders in LED manufacturing, where this product's superb transparency, very good mechanical strength and long-term resistance to extreme UV exposure have been successfully demonstrated.

About the "Alexander Wacker Innovation Award"

Since 2005, the Munich-based chemical company has honored employees' outstanding R&D work as part of its annual research symposium. Named after the company's founder, the €10,000

“Alexander Wacker Innovation Award” rotates between the categories of product innovation, process innovation and basic research. Next year’s research competition focus will be on process innovation.



WACKER Executive Board member Dr. Wilhelm Sittenthaler with this year’s recipient of the “Alexander Wacker Innovation Award”, Dr. Philipp Müller.
(Photo: Wacker Chemie AG)

Note:

These photos are available for download at:
<http://www.wacker.com/presseinformationen>

For further information, please contact:

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The company in brief:

WACKER is a globally active chemical company with some 15,900 employees and annual sales of around €4.3 billion (2008). WACKER has 27 production sites and over 100 sales offices worldwide.

WACKER SILICONES

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

WACKER POLYMERS

Dispersible polymer powders and dispersions for applications in the construction industry; PVAc solid resins; VC copolymers; polyvinyl acetates

WACKER FINE CHEMICALS

Fine chemicals, biologics and other biotech products, such as cyclodextrins and cysteine

WACKER POLYSILICON

Polysilicon for the semiconductor and photovoltaics industries; solar wafers

Siltronic

Hyperpure silicon wafers and monocrystals for semiconductor devices