

PRESS RELEASE

Number 23

WACKER Confers Innovation Award for Optimized Polysilicon Manufacturing Process

Munich / Burghausen, June 26, 2023 – Munich-based chemical group WACKER has given this year's Alexander Wacker Innovation Award to a project team from Burghausen. The award was conferred for improvements to the polysilicon manufacturing process that further increase production efficiency. Paul Bönisch, Markus Wenzels and their team succeeded in optimizing the control system such that the parameters for polysilicon deposition can now be adjusted in real time. The flexible modification to the process conditions enables optimized growth of the polysilicon rods. The €10,000 prize was awarded last Friday during the WACKER Innovation Days at the company's Burghausen site.

WACKER produces polysilicon using the so-called "Siemens process," which involves feeding gaseous trichlorosilane into reactors at a temperature of about 1,000 °C, at which point ultrapure polysilicon deposits onto seed rods. After several days, when the rods have grown to the desired diameter, the reactors are shut down and opened, and the polysilicon rods are removed and broken into smaller pieces. These then undergo an additional, complex cleaning process for semiconductor applications. Finished and packaged, the polysilicon pieces go to the customers – manufacturers of semiconductor and solar wafers all over the world.

Until now, the deposition process has been controlled according to conventionally set parameters. Using a newly developed sensor-based setup, Paul Bönisch, Markus Wenzeis and their team have been able to optimize the programming of the process control system via the detailed analysis of extensively collected data. This means that adjustments to the reactor conditions are now possible in real time. The efficiency of the entire process can be improved, and the quality of the end product further stabilized. The production process also becomes considerably more sustainable. "With this pioneering approach, we are strengthening our position as technology and market leader in the production of ultrapure polysilicon. At the same time, the new process makes an important contribution to achieving our CO₂ reduction targets," said WACKER Executive Board member Angela Wörl in her opening speech.

Thanks to their innovative approach to the optimization of polysilicon manufacturing, the Burghausen-based team managed to prevail against strong competition. This year, 24 teams from China, Germany, South Korea, the Czech Republic and the USA participated in the competition for the Innovation Award.

About the Alexander Wacker Innovation Award

Since 2006, WACKER has been presenting the Alexander Wacker Innovation Award to successful research and innovation projects as part of its annual research symposium. Named after the company's founder, the €10,000 award recognizes outstanding achievements in the categories of product innovation, process innovation and basic research.



WACKER CEO Christian Hartel (left) and Angela Wörl, Member of the Executive Board (right), confer this year's Alexander Wacker Innovation Award to Paul Bönisch (second from left) und Markus Wenzeis (second from right) from WACKER POLYSILICON. (Photo: WACKER).

Please note:

This photo is available for download at:
<http://www.wacker.com/pressreleases>

For further information, please contact:

Wacker Chemie AG
Media Relations & Information
Christof Bachmair
Tel. +49 89 6279-1830
christof.bachmair@wacker.com
www.wacker.com
follow us on:   

The Company in Brief:

WACKER is a global chemical company with some 15,700 employees and annual sales of around €8.21 billion (2022).
WACKER has a global network of 27 production sites, 26 technical competence centers and 50 sales offices.

WACKER SILICONES

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

WACKER POLYMERS

Polyvinyl acetates and vinyl acetate copolymers and terpolymers 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