

## Press release

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### **Heraeus enables significant higher efficiency gains with three new metallization pastes**

- **SOL9641B for ULDE mono and PERC cells boosting efficiency up to 0.2%**
- **9641AX/BX for zero degree mesh printing screens (“Knotless screens”)**
- **SOL570 for emerging solar cell architectures such as heterojunction (HJT) or organic pv (OPV) solar cells**

Heraeus Photovoltaics, the worldwide leading supplier of metallization solutions to the PV industry, introduces at the World Smart Energy Week in Tokyo a new generation of highly efficient metallization pastes. Whilst SOL9641B enables higher efficiencies gains, the other two metallizations pastes 9641Ax/Bx and SOL570 pave the way for emerging solar screen technologies.

#### **Substantial efficiency boost with SOL9641B**

On mono- and multi-crystalline ULDE and PERC cells Heraeus' brand new SOL9641B series with improved finger geometry helps boosting efficiencies significantly by up to 0.2%. Better contact formation and less shading enable this efficiency boost. The metallization paste demonstrates superior contact behavior on demanding emitters such as ultra-low doped emitters (ULDE). In addition, the organic vehicle system for ultra-fine line printing has been improved.

A unique glass frit developed by Heraeus Photovoltaics enables a wider firing window toward lower temperature side. It is tailored to the low temperature processing needs of PERC solar cells and can be paired with the award winning SOL326 PERC backside paste to realize higher efficiencies and mass production yield.

#### **SOL9641AX/BX – made for emerging printing technologies**

The new SOL9641AX/BX series is designed to realize the full advantages of zero degree mesh printing screens, also known as knotless screens. This emerging technology gives the paste more room to pass through. It features a unique paste rheology, enabling much better aspect ratio on ultra-fine-line fingers compared to conventional paste. An outstanding 0.1% efficiency gain can be achieved and the pastes are perfectly suited also for black silicon texturing. The aspect ratio achieved by SOL9641Ax/Bx on knotless screen is 0.6-0.64, compared to the aspect ratio on conventional screen of 0.48.

#### **Enhancing heterojunction and organic solar cells with SOL570**

For emerging solar cell architectures such as heterojunction (HJT) or organic solar cells (OPV) Heraeus introduces the new SOL570 series as

low temperature paste. The improved paste chemistry combines the latest breakthrough silver powder development and organic design, allowing improved sintering of the silver at low curing temperatures. The SOL570 is perfectly tailored for fine-line printability for screen printing. It features an outstanding conductivity and improved adhesion on HJT cells with an efficiency gain of up to 0.05%

## **About Heraeus Photovoltaics**

The Heraeus Photovoltaics Global Business Unit is an industry leading developer and manufacturer of silver metallization pastes for the photovoltaic industry. For over 40 years, Heraeus has built a reputation of innovation, extensive research and new product development in thick film technologies for some of the most prominent companies within a variety of industries. In the field of photovoltaics, the Heraeus Photovoltaics Business Unit applies this history and its innovative technology to offer metallization pastes for solar cell applications. The Heraeus SOL Series of silver pastes is specially formulated to provide higher efficiencies and wider processing windows, resulting in better yields and higher output for cell manufacturers.

## **About Heraeus Group**

Heraeus, the technology group headquartered in Hanau, Germany, is a leading international family-owned company formed in 1851. With expertise, a focus on innovations, operational excellence and an entrepreneurial leadership, we strive to continuously improve the businesses of our customers around the world. We create high-quality solutions for our customers and strengthen their long-term competitiveness by combining material expertise with technological know-how. Our ideas are focused on important issues such as the environment, energy, health, mobility and industrial applications. Our portfolio ranges from components to coordinated material systems which are used in a wide variety of industries, including the steel, electronics, chemical, automotive and telecommunications industries. In the 2015 financial year, Heraeus generated revenues without precious metals of €1.9 bn and a total revenue of €12.9 bn. With approximately 12,500 employees worldwide in more than 100 subsidiaries in 38 countries, Heraeus holds a leading position in its global markets. In 2016, the Foundation for Family Businesses named Heraeus as one of the "Top 10 Family Businesses" in Germany.

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