

## Press release

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### **Higher yield of solar wafers and enhanced solar cell efficiency with new HeraGlaze® coating by Heraeus**

- **Enhanced crucible performance able to deliver close to additional 2GW per year without increasing wafer production capacity**

Heraeus Photovoltaics, the worldwide leading supplier of metallization solutions to the PV industry, introduced HeraGlaze, a high-purity SiO<sub>2</sub> diffusion barrier coating for enhanced crucible performance in wafer production. It is the first product of Heraeus Photovoltaics beyond metallization pastes and a leap in quality and yield for integrated PV-manufacturers. With HeraGlaze the wafer yield is increased by up to 4% and cell efficiency is improved by 0.1%. Assumed an annual wafer production of 50GW today, HeraGlaze will be able to deliver close to additional 2GW per year without increasing wafer production capacity.

HeraGlaze is used in the very first step of the of the solar cell manufacturing process, when poly-crystalline silicon blocks are melted into a single silicon ingot. This early process is crucial for the quality of the ingots and thus for the quality of the final product – the solar wafers.

The new product of Heraeus comes as a slurry, which is applied on the porous surface of the crucibles. This can be done directly at the production site of the customer and allows to retrofit or upgrade existing crucibles. As a result, the solution is very cost-efficient as no additional expenditures on new crucibles are required.

#### **A new chapter as technology leader**

HeraGlaze acts as a barrier and prevents that thermally induced impurities such as iron are transferred from the crucible into the silicon ingot during the melting and crystallization of silicon. The higher wafer yield is achieved by increasing the usable section of a silicon ingot.

“HeraGlaze opens a new chapter in our roadmap as a technology leader and provides our customers with more added value. It’s our first product beyond solar cell metallization and another R&D landmark, which enables our customers to realize further efficiency gains,” says Andreas Liebheit, President of Heraeus Photovoltaics”.

#### **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

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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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