

## Press Release

### **First of its kind Selectively Coated Ribbons (SCR™) offer significant power gain to solar module manufacturers**

#### **Heraeus Photovoltaics and Ulbrich Solar Technologies begin production of industry's first "plug and play" power-enhancing ribbons for PV interconnection**

HANAU, Germany- September 24, 2018- Heraeus Photovoltaics, a leading technology solution provider for the renewable energy industry, today announced a joint manufacturing and sales partnership with Ulbrich Solar Technologies, a global leader of PV ribbon products. Under this agreement, Ulbrich will manufacture and market the new Heraeus line of patented advanced Selectively Coated Ribbons (SCR™) for module manufacturing customers. This first of its kind coated ribbons deliver increased power while providing solar module manufacturers a "plug and play" solution that easily integrates into their existing manufacturing process without requiring any additional equipment.

PV ribbons play an important role in the manufacture of solar cell modules, interconnecting the cells together to a string that is placed inside the module. Heraeus Selectively Coated Ribbons (SCR™) represents a breakthrough with its unique design. While traditional PV ribbons typically have a solder coating on them, the Heraeus SCR™ is a tabbing ribbon designed with stripes of highly-reflective white coating running across its edges, with the solder coating in the middle. As a result, the new design delivers significant improvements in functionality and performance, namely:

- A power gain of up to 2.2 watts on module level;
- All relevant soldering technologies tested and compatibility with different stringers proven;
- Reliability tests have been successfully completed: TCT 400 passed and 240 kWh/m<sup>2</sup> UV-DH passed;
- Versatility to work on conventional module designs as well as modules made with half-cut cells and bifacial modules.

Dr. Weiming Zhang, Executive Vice President and Chief Technology Officer of Heraeus Photovoltaics, added, "Solutions like our Selectively Coated Ribbons are another example of why we invest so heavily into R&D. This partnership with Ulbrich will help us bring this innovation to market quickly so the industry can continue to make solar the most efficient and important renewable energy source." Peter Berghofer, the General Manager of Ulbrich of Austria GmbH, said, "New products for module manufacturing need to meet demanding requirements and must be cost competitive, innovative and reliable. The new SCR fulfils those expectations by increasing the power of every single module without any investment or additional effort for the module manufacturers. We expect this product to be a real game changer in module manufacturing."

Heraeus announced that Ulbrich will initially sell its Selectively Coated Ribbons in Europe, Russia, Turkey, the Middle East, Mexico and the United States. Sampling to key customers will begin by September 2018, with several hundred megawatts of module manufacturing projected to be supported by 2019.

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#### **About the Heraeus Photovoltaics Global Business Unit**

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**

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 2017 financial year, the FORTUNE Global 500 listed company generated total revenue of €21.85 bn. With approximately 13,000 employees worldwide in more than 100 subsidiaries in 40 countries, Heraeus holds a leading position in its global markets has been awarded as one of the “Top 10 Family Owned Businesses” in Germany.

## **Media Contacts**

Jeff Oddo  
Sr. Manager, Communications  
Heraeus, Inc.  
Phone: +1 (215) 944-9981 or Mobile: (215) 666-3390  
e-mail: [jeffery.oddo@heraeus.com](mailto:jeffery.oddo@heraeus.com)

Fezan Sayed  
Head of Strategy & Sales - Americas  
Heraeus Photovoltaics  
Phone: +1 (610) 825-6050 x291  
E-Mail: [Fezan.Sayed@heraeus.com](mailto:Fezan.Sayed@heraeus.com)  
Website: [www.pvsilverpaste.com](http://www.pvsilverpaste.com)