

## Press Release

### **Taking power electronics for hybrid and electric vehicles to a higher gear: Heraeus and Toshiba Materials to collaborate on development and production of silicon nitride ceramic substrates**

### **Development and production partnership to meet growing industry need for more efficient and higher-performing power electronics components**

HANAU, Germany- February 20, 2019- Heraeus Electronics, a leading provider of materials solutions for the semiconductor and electronic packaging industries, today announced a strategic partnership with Toshiba Materials to jointly develop and produce metal ceramic substrates made of silicon nitride (Si<sub>3</sub>N<sub>4</sub>), which are used in high-performance electronics. The growth of the e-mobility market, in particular, has created an increased demand for more efficient, economical, and reliable power electronic components for hybrid and electric vehicles. This full-scale collaboration will enable both companies to address this critical need.

Silicon nitride metal ceramic substrates possess excellent thermal conductivity and mechanical properties, which are used as heat-dissipating and insulating parts in power modules. It is expected that demand for silicon nitride metal ceramic substrates with high reliability will increase in the future by expanded use in power modules installed in electric vehicles.

Both companies gain by combining their expertise in ceramic substrate production, technology for the bonding of metal and ceramics, structuring, finalizing, and sales to better supply the market. Toshiba Materials provides the metal ceramic substrates, which Heraeus Electronics structures and finalizes to meet customer specifications. Toshiba Materials continues to supply finalized substrates on established markets.

“The European market wants a highly reliable and highly functional ceramic substrate, and we are convinced that silicon nitride will be a solution for it,” says Takao Shirai, Director of Toshiba Materials. “Because Europe is environmentally conscious oriented and a significant industrial base of automobiles and power modules, we believe it is a huge potential market of silicon nitride metal ceramic substrates with high reliability as well as in Japan.”

“Our collaboration with Toshiba Materials expands our product portfolio of Condura Metal Ceramic Substrates and enables us to offer our customers Condura.prime as the right product for high reliability applications,” says Dr. Klemens Brunner, President of Heraeus Electronics. “This way, we can launch new solutions much more quickly, be more agile, and respond more rapidly to trends.” The Japanese technology company Toshiba Materials benefits from the global customer base and local customer proximity of Heraeus Electronics.

“The competencies of both partners in the production and further processing of silicon nitride metal ceramic substrates complement each other exceptionally well,” explains Martin Sattler, Head of Customer Solutions at Heraeus Electronics. “Ultimately, this benefits the customer most of all.”

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**Condura is a Heraeus Electronics trade mark.**

## **About Heraeus Electronics**

Heraeus Electronics - a Global Business Unit of the Heraeus Group - is one of the leading manufacturers of materials for the packaging of integrated circuits in the electronics industry. The company deals with sophisticated material solutions for semiconductor and automotive industry, consumer goods, energy, industry electronics as well as communications and telecommunications. Core competences include bonding wires, assembly materials, thick film pastes, as well as roll clad strips and substrates. For more information, please visit [www.heraeus-electronics.com](http://www.heraeus-electronics.com).

## **About Toshiba Materials**

Toshiba Materials Co., Ltd. (<http://www.toshiba-tmat.co.jp/eng/>) was demerged from Toshiba Corporation in 2003. With material designing technology as a core, Toshiba Materials has supplied key material and key components which support development of society. Main products are metallic materials, components, fine ceramics parts and chemical materials.

## **For Additional Information**

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