

Hennigsdorf, October 24, 2023

## **Tresky presents metallic sintering for power electronics at productronica 2023**

**Tresky GmbH from Hennigsdorf near Berlin will present various metallic pre-sintering processes, including the Die Transfer Film (DTF) process, at this year's productronica 2023 in Munich. Especially for bonding semiconductors such as IGBTs, SiC MOSFETs or GaN HEMTs with Ag on DBC or AMB substrates or for connecting power modules on heat sinks, metallic sintering offers a high-performance solution with maximum reliability.**

"The demand and interest for our pre-sintering technologies remains resolute. There is a very high level of interest, particularly from the e-mobility sector," explains Daniel Schultze, Managing Director of Tresky GmbH. In sintering, the chip is bonded to a substrate by using sintering paste with and aided by heat and pressure. Typically, copper or silver sintering pastes are used. During the actual sintering process, the metal particles are bonded together by diffusion processes. The advantage over soldering processes is better thermal conductivity, longer service life and high thermomechanical stability. These properties are crucial in electromobility and power electronics.

"Energy efficiency and cost effectiveness of modules are essentially defined by energy efficiency and lifetime.. State-of-the-art assembly and packaging technology is the solution to today's problems in the production of power electronics ," explains Schultze. In metallic sintering, the paste application and the placement of the semiconductor are the most important process steps. To optimize the entire sintering process in terms of costs and cycle times, Schultze's team has developed and implemented its own process technologies. Tresky uses the SQ Nozzle Dispenser, which enables very homogeneous and large-area application of silver or copper sintering paste. This also applies to highly thixotropic silver pastes. The sinter paste can thus be dispensed onto the substrate in a defined layer height and width in a single process step. For process control, the paste depot can be optically gauged directly in the machine. The combination of SQ Nozzle, process optimization and sinter paste gives the Tresky team the ability to reduce the dog-bone effect to a minimum.

"Furthermore, we investigated the Die Transfer Film (DTF) process. As a part of this development step, we used an ARGOMAX 8020 film from Alpha," Schultze said. A DTF-process starts by picking up a thin silver sinter layer, called transfer film, together with the DIE. The film used by Tresky has high thermal and electrical conductivity, making it perfect for the sintering process. In the process set up by Tresky, the picked-up DIE is pressed into the film with a defined force and temperature. a uniformly thick, defined layer of this film remains adhered to the underside of the DIE when the component is subsequently lifted due to adhesion. The DIE coated in this way is then placed on the Ag or Au pad of the DBC or AMB substrate and fed into the sintering process. After sintering, a high-purity bond is formed between the component and the surface, which presents excellent thermal and electrical conductivity.

# Press release

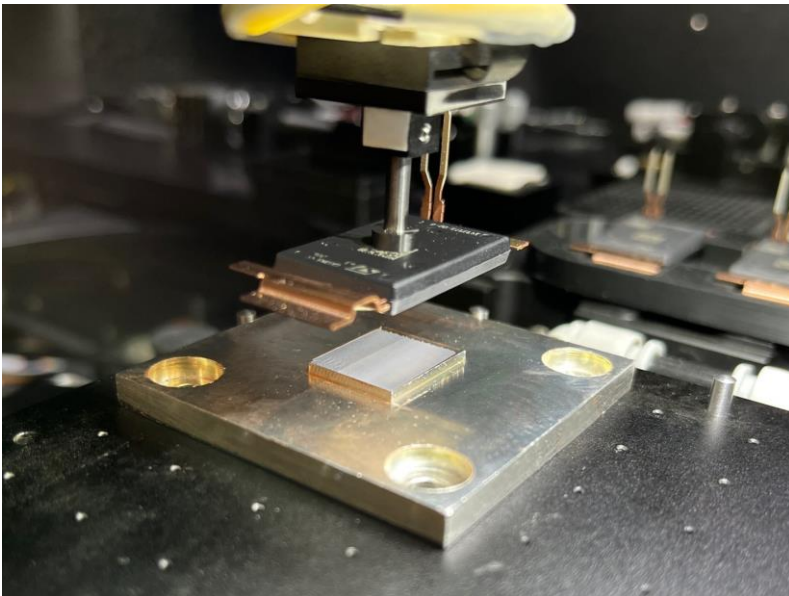
Furthermore, Tresky's pre-sintering process can be combined with other options, such as processing wafers, pressing components with high forces up to 350 N, and dispensing a tacking agent to help position and fix the DIE on the sinter paste-added substrate.

Tresky will present the entire DIE bonding portfolio, including pre-sintering technology, to the trade public at productronica 2023 in Munich, Germany, November 14-17, in Hall B2 Booth 312.

## About Tresky

Since 1980 the name TRESKY stands for the highest quality, unmatched flexibility with maximum reliability. Tresky GmbH is one of the world's leading machine manufacturers for placement systems in the high-precision sector offering more than 40 years of experience in the semiconductor industry. The company is headquartered in Hennigsdorf near Berlin, in the middle of a technology park that is home to numerous highly specialized companies from the automation, electrical engineering, communications technology and life science sectors. Quality "Made in Germany" - Tresky develops, produces and sells Die Bonders from its headquarters in Hennigsdorf. More information: <https://www.tresky.de/en/>

## Picture:



## Picture captions:

Bonding of a SiC-MosFET

## Deeplinks:

<https://www.sintering.eu/>

# Press release

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