Picosun delivers powder MEMS technology platform to Fraunhofer ISIT

ESPOO, Finland, 17th of February 2022 – Fraunhofer Institute for Silicon Technology (ISIT) has taken Picosun’s P-300B ALD system into use as their powder MEMS technology platform.

Fraunhofer ISIT PowderMEMS is a new innovative technology for creating three-dimensional microstructures from a multitude of materials on wafer level. The technology is based on bonding together µm-sized powder particles in a cavity with Atomic Layer Deposition (ALD). It has many advantages compared to other manufacturing techniques as it allows using much lower process temperatures compared to a traditional sintering process. The bonded porous structures are thermally and chemically resistant thus enabling their extensive post-processing in a clean room.

"The technology can be used for various applications, such as microelectronics, MEMS sensors, MEMS actuators and microfluidics. For example, it enables the integration of porous and magnetic 3D microstructures on wafer level", explains Dr. Björn Gojdka, Group Leader at Fraunhofer ISIT.

"We were looking for a solution for conformal high surface area coating of powder located in trenches. Picosun solution is a perfect fit for this need as we are also looking into scaling up the technology. We are especially happy about the tool’s hot wall reactor, versatile precursor sources and its easy maintenance", states Dr. Thomas Lisec, Chief Scientist at Fraunhofer ISIT.

"We are excited over this new technology coming to life and all the opportunities it will bring. I am especially impressed by the potential applications for the Fraunhofer ISIT PowderMEMS as they are exceptionally diverse. I’m looking forward to continuing working closely with Fraunhofer ISIT on bringing the technology up to industrial production", says Dr. Christoph Hossbach, General Manager of Picosun Europe GmbH.

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Picosun provides the most advanced ALD (Atomic Layer Deposition) thin film coating solutions for global industries. Picosun’s ALD solutions enable technological leap into the future, with turn-key production processes and unmatched, pioneering expertise in the field – dating back to the invention of the technology itself. Today, Picosun’s ALD equipment are in daily manufacturing use in numerous leading industries around the world. Picosun is based in Finland, with subsidiaries in Germany, USA, Singapore, Japan, South Korea, China mainland and Taiwan, offices in India and France, and a world-wide sales and support network. Visit www.picosun.com.

Fraunhofer ISIT in Itzehoe is one of Europe’s most modern research facilities for microelectronics and microsystems technology. At the heart of the institute are the clean room facilities, large enough not only to conduct research but also to manufacture the developed microchips on an industrial scale. In close cooperation with partners from industry, 160 scientists at ISIT develop power electronics components and microsystems with fine moving structures for sensor technology and actuator technology, including the necessary packaging technology. www.isit.fraunhofer.de