

LPKF opens cleanroom fab

Production of microstructure components from thin glass using LIDE technology

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The technology company LPKF has now put a new cleanroom fab into operation to produce thin-glass components for applications in the electronics and semiconductor industry. The LIDE process (Laser Induced Deep Etching) developed by LPKF enables rapid and high-precision structuring of thin glass without impairing surface properties. The original stability of the glass remains fully intact. This process facilitates the use of glass in, for example, the production of microsystems, sensors, display components, and microchips.

The cleanroom fab was constructed in record time. Due to the considerable interest shown by the semiconductor and electronics industry in this innovative method of processing thin glass, rapid completion was required. Despite the difficult circumstances encountered this year with travel restrictions among service providers and delivery issues involving some manufacturers, the fab was constructed within a tight schedule of just 13 months. Dirk Neizel, Operations Manager at LPKF, was the driving force behind organizing and expediting the construction. "We now have a very flexible hall that we can equip in accordance with customer requirements, thus allowing the required production processes in each case to be offered as quickly as possible. With a complete air exchange every 60 seconds and precisely controllable climatic conditions, the fab optimally meets all the requirements of a production cleanroom. We have also invested heavily in modern safety technology in all systems and laboratories," emphasizes Dirk Neizel.

Dr. Roman Ostholt heads the Electronics Business Unit, which also includes the LIDE service division under the brand name Vitrion. "We can now produce large quantities of thin-glass components and micro-components quickly and efficiently in our foundry and supply our customers worldwide," he reports. Together with his team, he will continue to intensify and develop the cooperation with customers and partners in the semiconductor and electronics industry. In addition to the sale of its sys-

tems, this foundry constitutes a significant extension to LPKF's business model.

For CEO Dr. Götz M. Bendele, the project is indicative of LPKF's innovative strength and customer proximity: "Our new fab enables easy access to our technology for a broad set of customers across industries, who from today can order structured thin glass components from LPKF for their high-volume applications. In doing so, they can quickly realize substantial value from our transformative platform technology, without the need to invest in both systems and process capabilities. This drives our customers' competitive advantage."

Glass is a material of particular interest to many areas in the electronics and semiconductor sector due to its properties. For a long time, the material was considered very difficult to work with. Surface defects associated with the production process have earned glass the reputation of being prone to brittle fracture and therefore, at best, suitable for simple tasks only. Thanks to Laser Induced Deep Etching technology (LIDE), deep microstructures can now be created in glass for the first time without causing micro cracks, stresses, or other surface defects. Processing is extremely precise, and the process is fast. Interest in using this inexpensive material is increasing at a corresponding rate. With the use of LIDE-processed glass, even better results than previously possible can now be achieved, for example, in advanced IC and wafer level packaging in heterogeneous integration. The process also opens up new opportunities for processing and using display glass or microfluidic arrays. Further information on this subject can be found at www.vittrion.com

Images

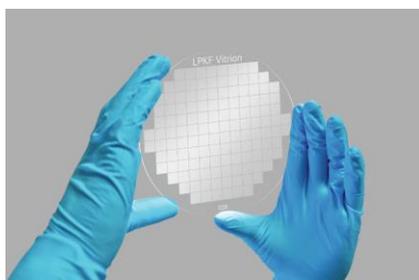


Fig. 1a: Glass wafers like this one are produced in the new Vittrion fab

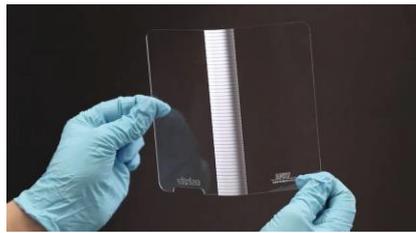


Fig. 1b: Foldable backplanes for smartphones can be created using LIDE technology

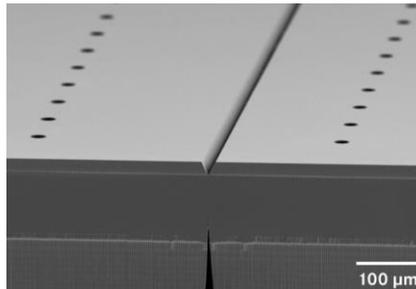


Fig. 1c: Precision in glass processing: Precise dicing structures can be created using LIDE technology



Fig. 2: Employees engaged in wafer production in the cleanroom



Fig. 3: Great joy at the opening of the cleanroom fab; Christian Witt, Dr. Roman Ostholt, Dirk Neizel, and Dr. Götz M. Bendele clear the way for the fab to start production.

About LPKF

LPKF Laser & Electronics AG is a leading provider of laser-based solutions for the technology industry. Laser systems from LPKF are key ele-

ments in the manufacturing of printed circuit boards, microchips, automotive parts, solar modules, and many other components. Founded in 1976, the company is headquartered in Garbsen, near Hannover, Germany, and has subsidiaries and representative offices throughout the world. Around 20 percent of the workforce is engaged in research and development.