Micromachining Transparent Materials

Selective laser etching

3D selective laser etching in fused silica.

Source: Femtika.

Color marking in glass

Source: Workshop of Photonics.

Glass cutting

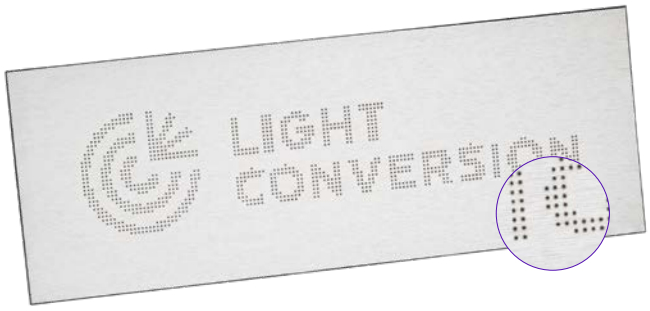
Structure fabricated in fused silica.

Glass cutting

Bottom-up glass cutting with GHz bursts: a map of Lithuania cut from 4,8 mm-thick glass.

Source: M. Mackevičiūtė et al., Fast and efficient bottom-up cutting of soda-lime glass using GHz bursts of short laser pulses, Opt. Lasers Eng. 183 (2024).

Metals



Conical drilling

A hole array produced in a 100 µm-thick stainless steel sheet at a rate of 1 ms per hole.

Nozzle drilling

Precision drilling of the nozzle holes.

Source: Posalux SA.

Selective ablation

Selective ablation of tungsten carbide.

Cutting and welding

Cut and welded parts from brass using a single laser system.

Surface texturing

Moon-like surface texturing on a watch bezel.

Source: LASEA.

Micromachining

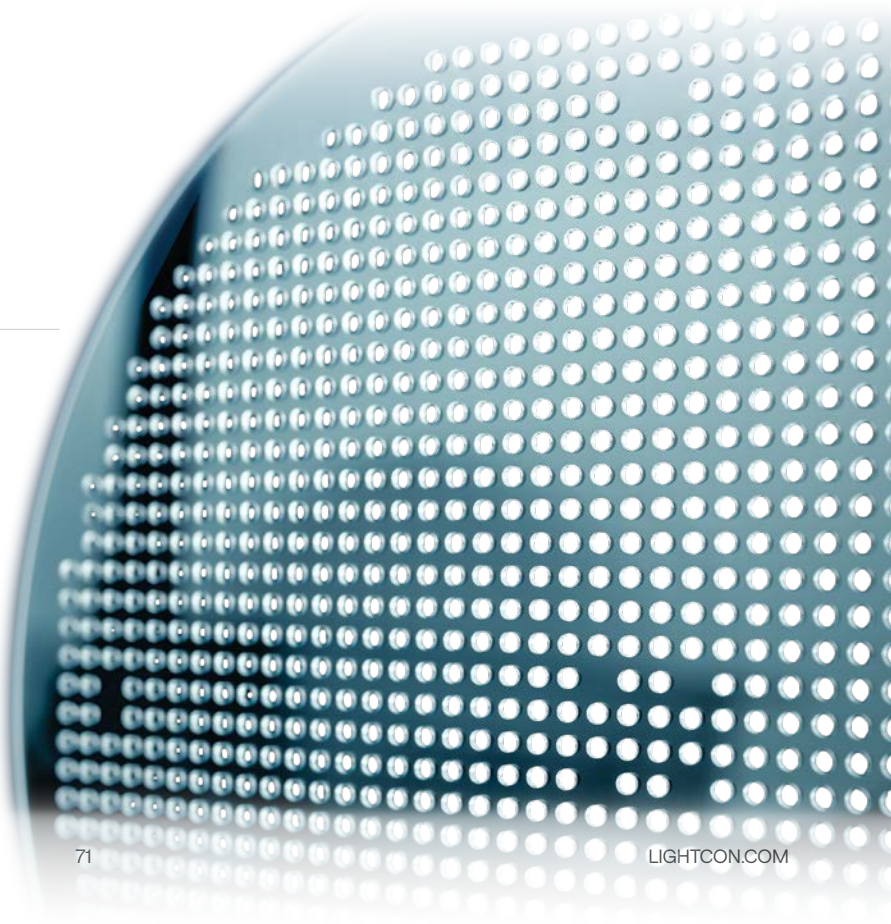
Semicon Industry

Silicon carbide dicing

Single-pass (300 mm/s) dicing
of a 500 µm-thick 4H-SiC wafer.

Silicon dicing

Precise dicing of a silicon wafer.



Through Glass Via drilling

Example of glass drilling with densely packed holes.

Source: Workshop of Photonics.

Medical Industry

Nitinol stent cutting

Source: Lighteum.

High-contrast marking

Corrosion-free black-and-white marking on a stainless steel hemostatic clamp using the BiBurst option.

Stainless steel stent cutting

Glass ablation and welding

Microfluidic chip manufacturing with channel sealing.

Source: Workshop of Photonics.

Intraocular lens cutting

Source: Lasea.

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