

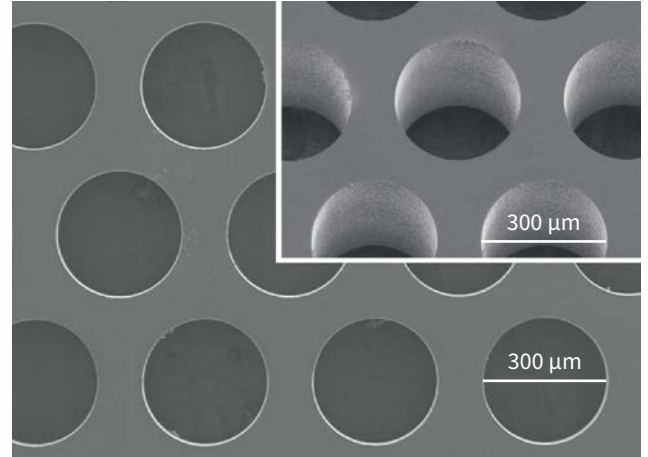
Micro- and Nanofabrication

Birefringent volume modification in glass



Form induced birefringence-retardance variation results in different colors in parallel polarized light.
Source: Workshop of Photonics.

High precision glass drilling



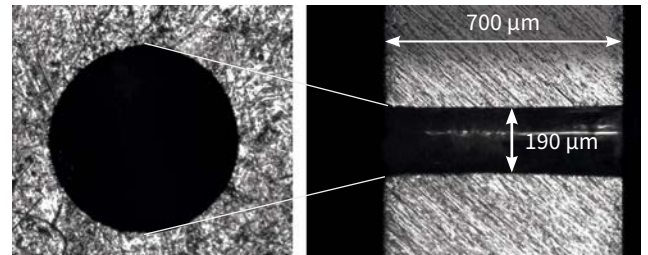
Various glass drilling.
Source: Workshop of Photonics.

Glass needle microdrilling



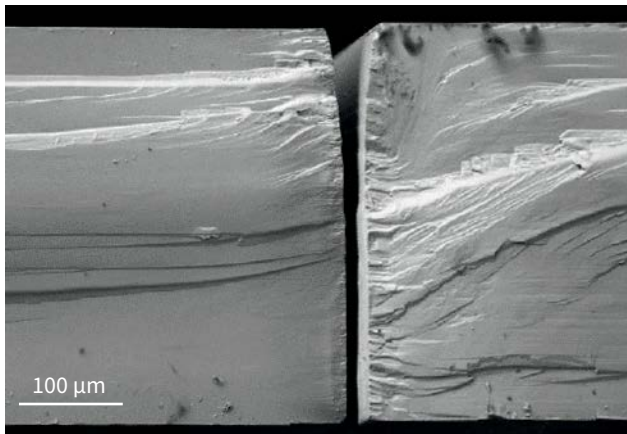
Glass needle microdrilling.
Source: Workshop of Photonics.

Steel drilling



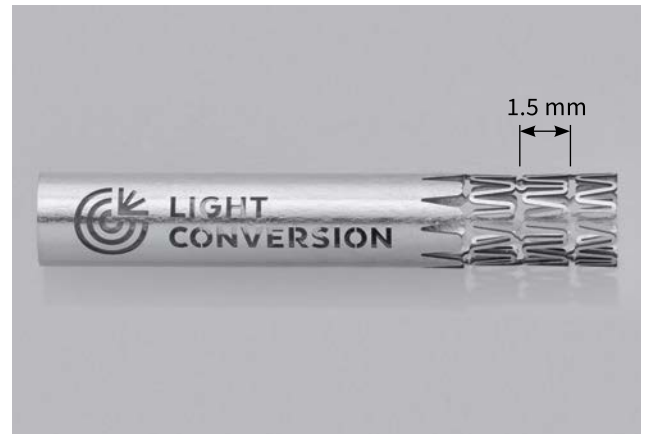
Taperless hole microdrilling in stainless steel alloys.
Source: Workshop of Photonics.

Brittle & highly thermal-sensitive material cutting



Multi-pass cadmium tungstate cutting.
No cracks. All thermal trace effects eliminated.
Source: Micronanics Laser Solutions Centre.

Stainless steel stent cutting



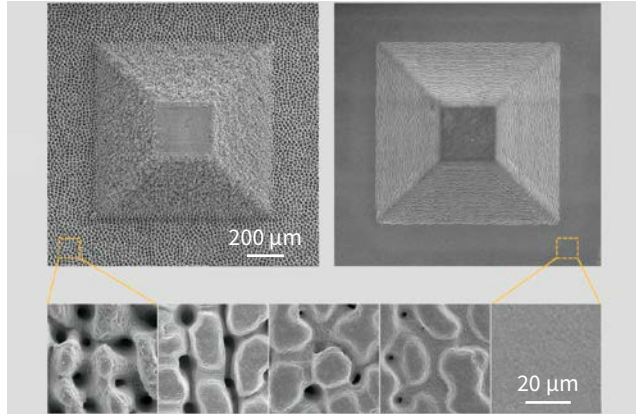
Cutting from stainless steel.
Example of stent cut from stainless steel.

Milling of complex 3D surfaces



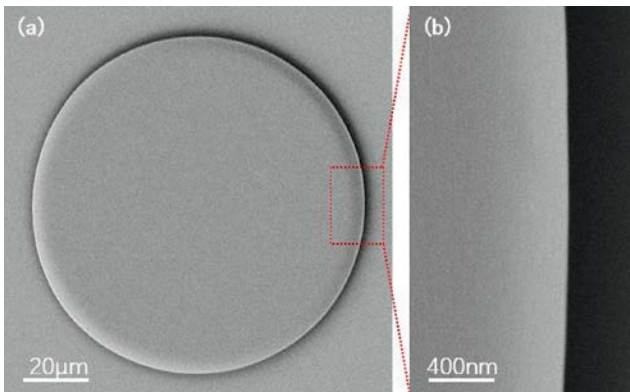
3D milled sample in copper. Zoom in SEM image.
 Source: “Highly-efficient laser ablation of copper by bursts of ultrashort tuneable (fs-ps) pulses”, A.Žemaitis, P.Gečys, M.Barkauskas, G.Račiukaitis, M.Gedvilas. Scientific Reports (2019).

Stainless steel polishing



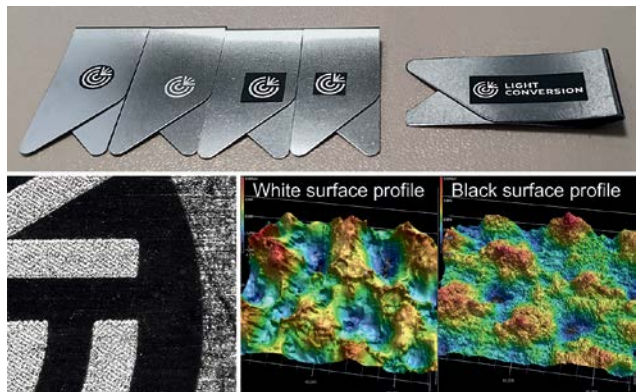
SEM imgs of structures ablated in stainless steel, before and after polishing using GHz burst (from left to right).
 Source: “High quality surface treatment using GHz burst mode with tunable ultrashort pulses”, D.Metzner, P.Lickschat and S.Weißmantel. Applied Surface Science (2020).

Selective ablation



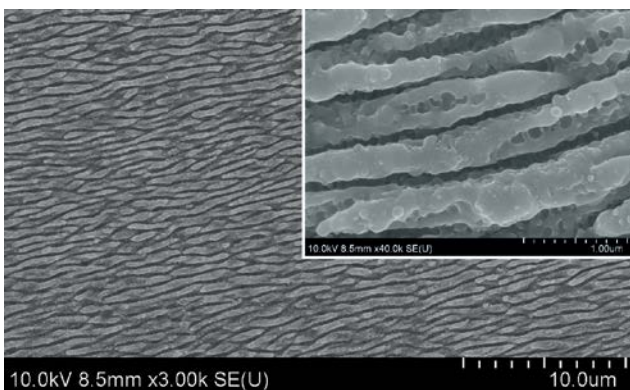
Lithium niobate microdisks fabricated using selective ablation.
 Source: “Fabrication of crystalline microresonators of high quality factors with a controllable wedge angle on lithium niobate on insulator”, J.Zhang, Z.Fang, J.Lin, J.Zhou, M.Wang, R.Wu, R.Gao, Y.Cheng. Nanomaterials (2019).

High-contrast marking



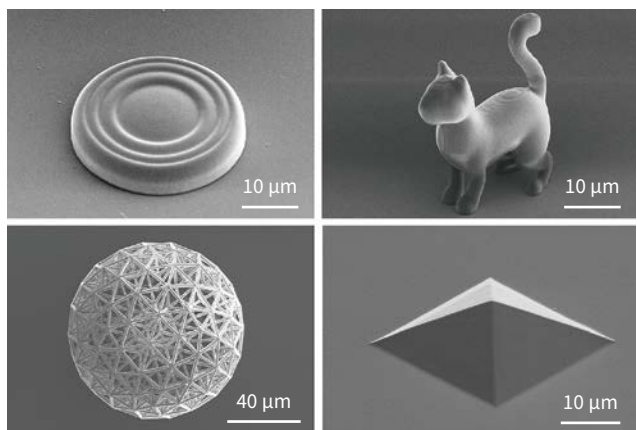
High-contrast black-and-white marking on stainless steel clips using the BiBurst option.

SERS sensor fabrication



SEM image of the Ti-6Al-4V (TC4) surface after irradiation with progressive laser scan.
 Source: “Large-scale fabrication of nanostructure on bio-metallic substrate for surface enhanced Raman and fluorescence scattering”, L.Lu, J.Zhang, L.Jiao, Y.Guan. Nanomaterials (2019).

3D multiphoton polymerization



Various 3D structures fabricated in SZ2080 polymer using multi-photon polymerization.
 Source: Workshop of Photonics.