JOANNEUM RESEARCH MATERIALS

FLICE – 3D Microstructuring Inside Glass

Precise. Selective. Mask-Free

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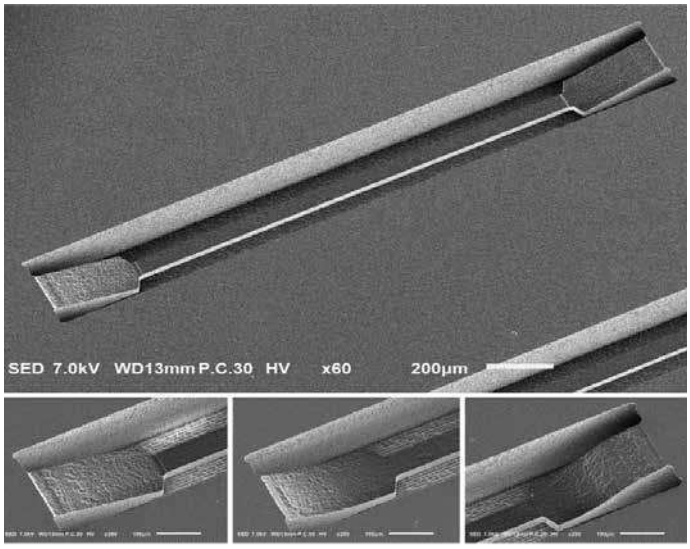
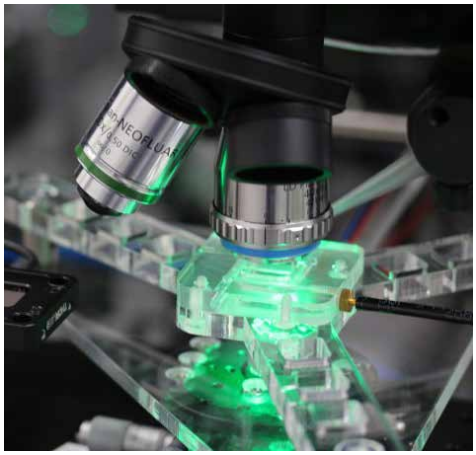


FLICE (Femtosecond Laser Induced Chemical Etching) enables the fabrication of **high-precision 3D hollow structures inside glass** — fast, flexible, and without masks. By combining **ultrashort laser pulses** with **selective wet etching**, we deliver custom microdevices for photonics, microfluidics, and quantum technologies.

Key Advantages:

- **True 3D structuring** inside transparent materials like fused silica and borosilicate
- **Resolution down to 2 µm,** aspect ratios > 1:500
- **Monolithic fabrication** – no bonding or alignment needed
- **Rapid prototyping** with short development cycles
- **Wafer-level processing** up to 200 × 200 mm



Application Areas:

- **Integrated optics:** waveguides, couplers, microoptics
- **Microfluidics:** channels, mixers, lab-on-glass systems
- **Quantum technologies:** photonic glass chips
- **MedTech & sensors:** diagnostic microdevices

One-stop development:

From concept to finished part – we offer complete in-house support for design, prototyping, fabrication, and testing. Let's turn your idea into a next-generation glass microdevice.

Wavetailor

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FFG Promoting Innovation.

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