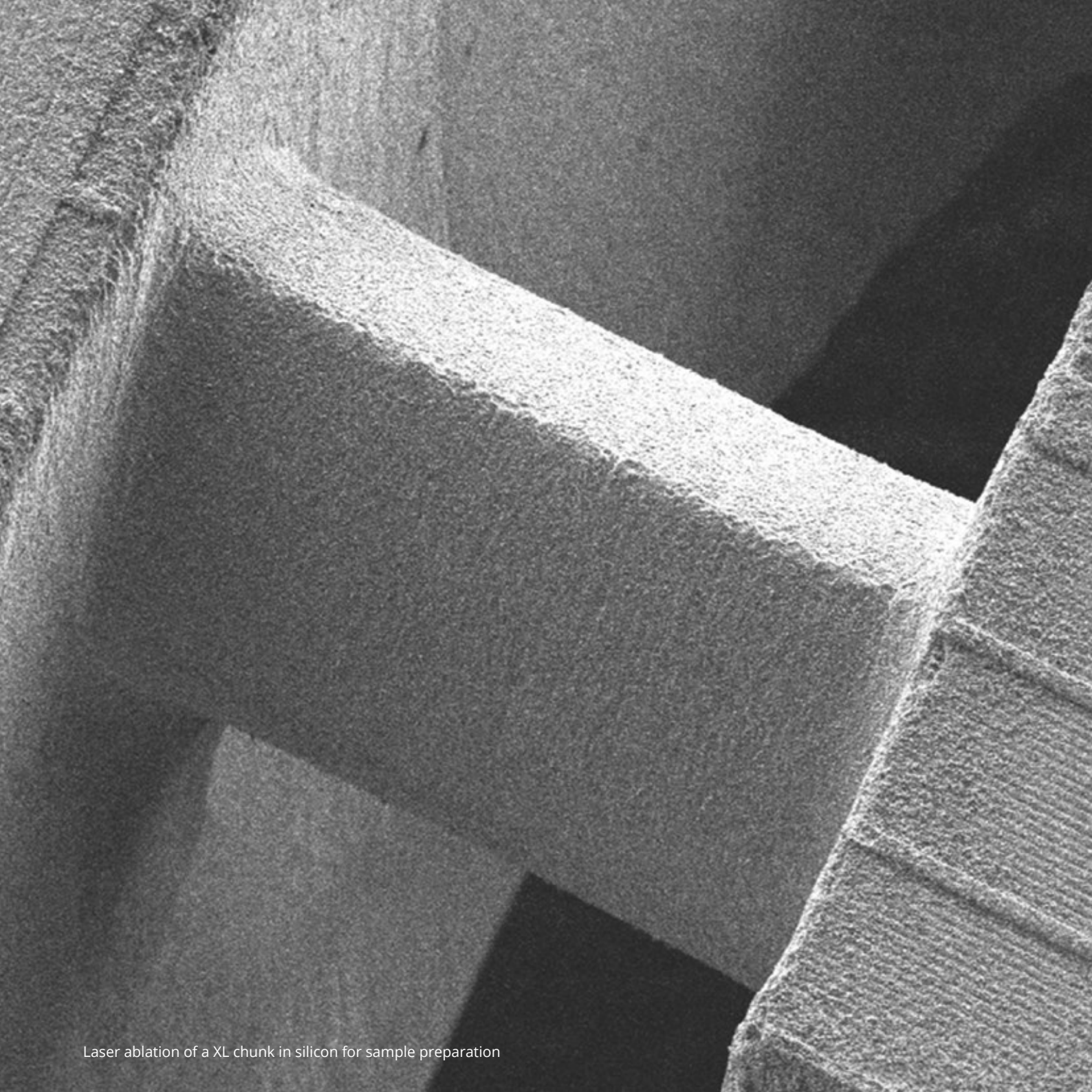




FROM IDEAS TO PRODUCTS

CONTRACT MANUFACTURING BY 3D-MICROMAC

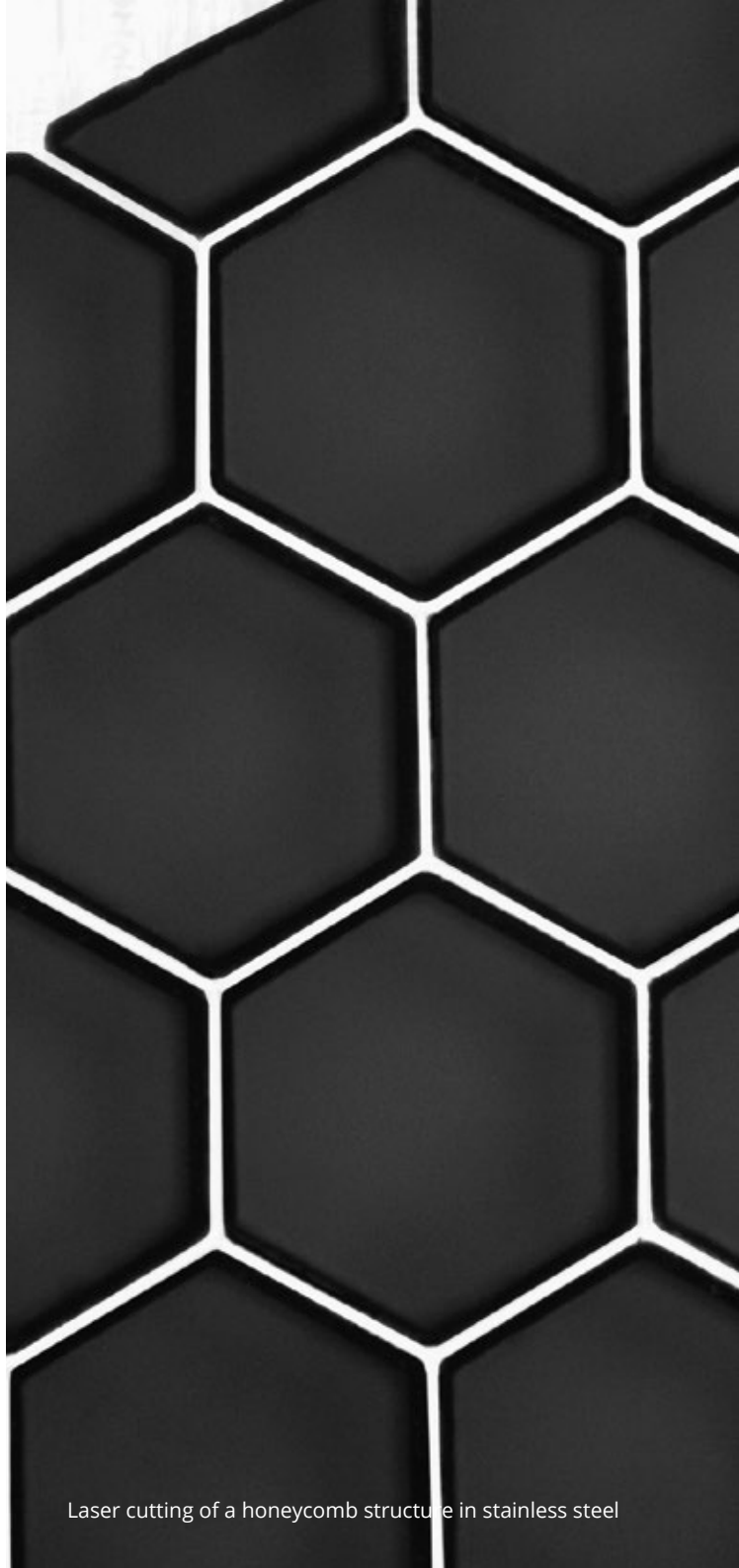


Laser ablation of a XL chunk in silicon for sample preparation

MICROMACHINING EXCELLENCE – FROM IDEAS TO PRODUCTS

3D-Micromac AG is the industry leader in laser micromachining. We develop processes, machines and turnkey solutions at the highest technical and technological level. In the business division of laser contract manufacturing, we offer customer-specific development of laser processes as well as contract manufacturing of components for small and large series.

The production is realized exclusively on laser machines of 3D-Micromac AG. Depending on your requirements, our laser application center offers industrial laser systems as well as versatile development systems. Our know-how in combination with various beam sources from the leading laser manufacturers helps us to manufacture high-quality components or devices. Production efficiency and cost awareness are the top priority. We are happy to offer you frame agreements for your part manufacturing with us. If the contract manufacturing is later to be transferred to your own production, we are happy to build the perfect laser system according to your requirements.

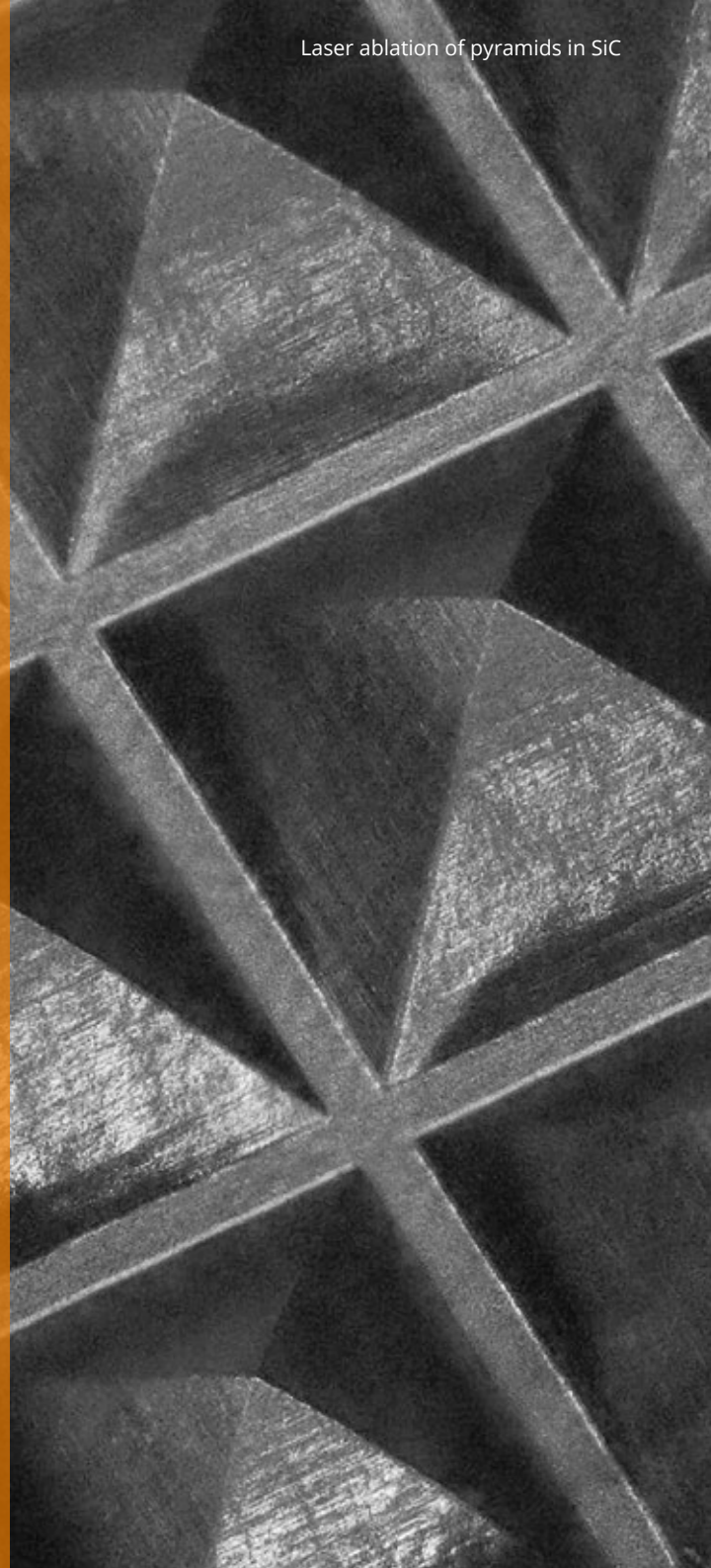


Laser cutting of a honeycomb structure in stainless steel

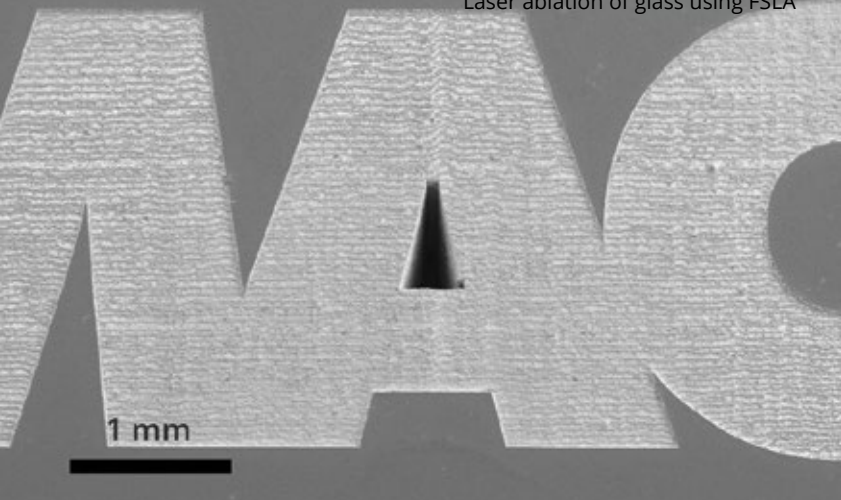
Microfluidic channels in glass using FSLA



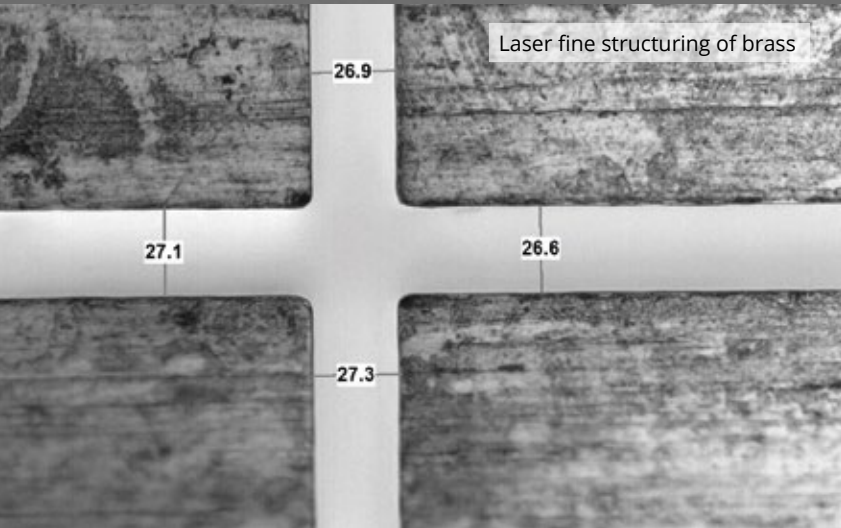
Laser ablation of pyramids in SiC



Laser ablation of glass using FSLA



Laser fine structuring of brass



ENABLING MANUFACTURING SOLUTIONS

BRING REAL BENEFITS TO YOUR PRODUCT

In our application and service center, we offer the development of customized laser processes for the industrial production as well as laser contract manufacturing of parts with small to large batch sizes.

Based on our long-term experience of several decades in the field of laser micro machining we are able to offer a large variety of applications. These include among others:

- Separating, drilling, structuring of glass wafers and panels with different glass materials
- Processing of optical devices
- Generation of micro fluidic channels for medical, biological, chemical applications in glass, metal or ceramic materials
- Laser Lift-Off (LLO) of glass and sapphire substrates for the semiconductor industry, as well as for production of organic light-emitting diodes (OLEDs) and microLED-displays
- Laser-Lift-Off (LLO) of flexible electronic systems based on transparent glass substrates
- Laser processing of flexible electrical systems, e.g. in the field of medical devices and sensors using roll-to-roll procedures
- Fabrication of micro drillings for fluidic applications, e.g. inkjet printing nozzles, micro filters with drilling diameters of only a few micron and with defined hole geometries

- Cutting, drilling, structuring of polymers and polymer composites for sensor and medical technology
- Laser supported sample preparation of specimens for diagnostics of microstructures and failure analysis
- Separation of semiconductor wafers and solar cells with TLS-dicing technology

You cannot find your preferred application?

Our core competence is the development of solution-oriented applications on the highest technological standard. We are able to find the most efficient solution for you.

STATE-OF-THE ART LASER TECHNOLOGIES FOR EVERY APPLICATION

As a specialist in the field of laser micro machining we offer you a broad variety of processing technologies for the production of your required parts. We can offer you the processing of nearly all materials using short pulse lasers and ultrashort pulsed lasers as well as short wave lasers (UV). Our laser contract manufacturing is performed on the proven machine platforms of 3D-Micromac.

- Laser material processing with short and ultra-short pulsed lasers
- Laser material processing with excimer lasers
- Roll-to-roll laser processing with short and ultra-short pulsed lasers

Our excellent trained staff consisting of laser technicians and process engineers know the requirements of our customers. Those come most frequently from the fields of medical technology, microelectronics, automotive, glass and display industry as well as from the semiconductor and material science background.

We gladly support you in process development and optimization. Together with our costumers, we develop the most economic production solution.





3D-MICROMAC LASER EQUIPMENT GUARANTEES MAXIMUM PRECISION

Our application and service center is equipped with more than ten laser systems for micro material processing, partly placed in a clean room class ISO7.

The spectrum of our laser sources includes all systems suitable for micro machining, e.g.:

- Solid-state laser
- Gas laser (excimer laser, CO₂-laser)
- Continuous-wave laser (cw), short-pulse laser and ultrashort-pulse laser
- Wavelengths of 10600 nm, 1070 nm, 1064 nm, 532 nm, 355 nm, 248 nm

For the laser processing galvanometer scanners and fixed optics with different focal distances are available. The positioning is achieved by high precision axis systems, image processing and measurement systems. The laser process can be selected to run in a "on-the-fly" or roll-to-roll mode, depending on your application. We offer several measurement systems for quality assurance, as for instance confocal laser scanning microscopes, light microscopes, SEM, TEM, and tactile profilometry.

The logo consists of the text "3D MICROMAC" in a bold, sans-serif font. The "3D" is positioned above "MICROMAC". The text is white and is placed on a white, wavy ribbon that curves across the page. The background is a dark, abstract geometric pattern of triangles and lines, with a bright light source in the upper left corner creating a lens flare effect.

3D MICROMAC

The logo features the text "3D MICROMAC" in a bold, sans-serif font. The "3D" is in orange and white, while "MICROMAC" is in black. The "3D" is stylized with a white outline and a shadow effect.

3D MICROMAC