

Laser Micromachining

Technical equipment

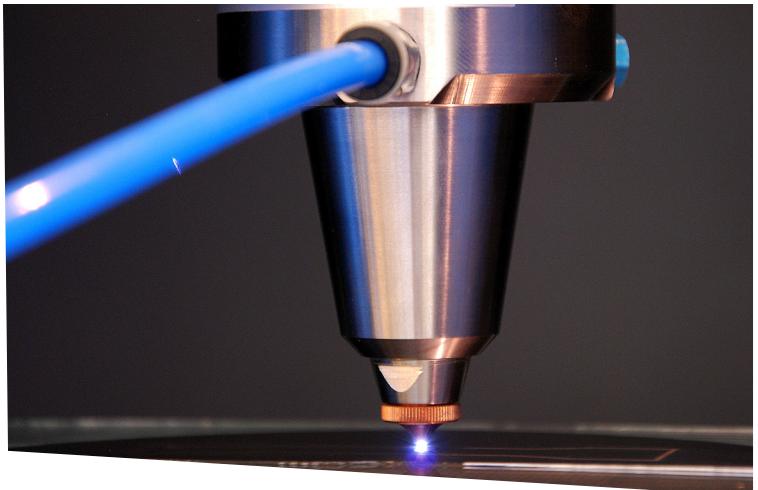
6 axis robotic arms



Laser system for micromachining



Measuring microscope

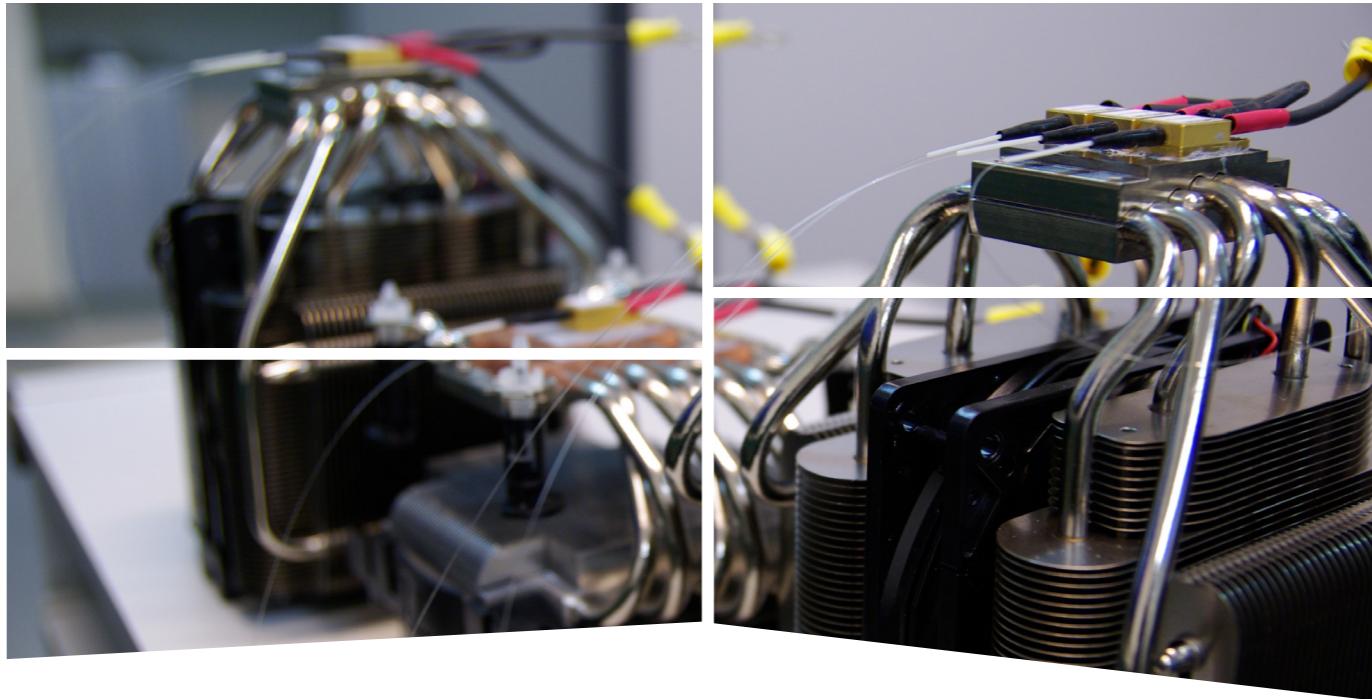


Micro head cutting

ALPhA NOV
Optics & Lasers Technology Center

LASERS

- Femtosecond laser 40 W @ 1030 nm, 40 µJ, 350 fs
- Femtosecond laser 20 W @ 1030 nm, 100 µJ, < 350 fs
- Femtosecond laser 4 W @ 1030 nm, 1 mJ, < 500 fs
- Femtosecond laser 5 W @ 1030 nm, 10 µJ, 350 fs
- SHG/THG module for femtosecond lasers
- Sub picosecond laser 100 W @ 1030 nm, 25 µJ, < 1 ps
- SHG/THG for picosecond laser
- Fiber laser 80 W @ 1030 nm, 12 ns
- Fiber laser 30 W @ 515 nm, 12 ns
- Fiber laser 14 W @ 343 nm, 12 ns
- Vanadate laser 17 W @ 1064 nm, 35 ns
- Vanadate laser 4 W @ 355 nm, 35 ns
- Vanadate laser 1,6 W @ 266 nm, 35 ns



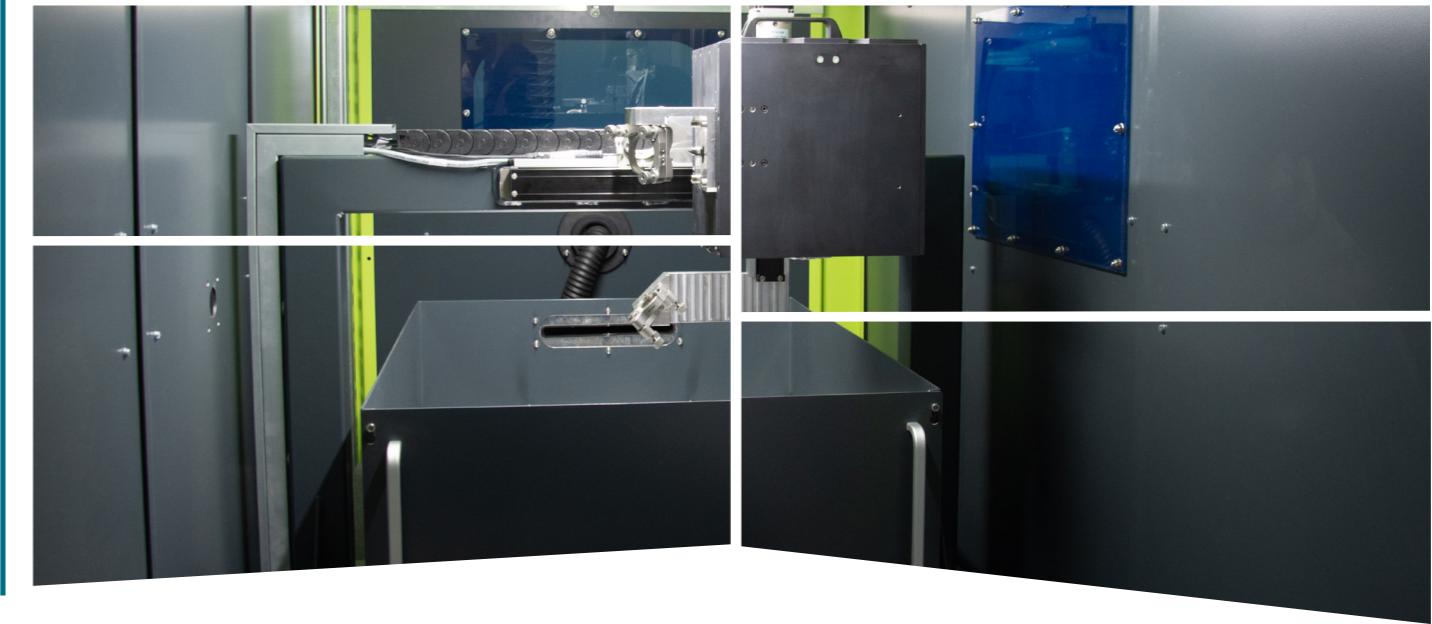
NEW TECNOLOGIES 2019

Lasers

- Femtosecond laser 35 W @ 1030 nm, 200 µJ, < 350 fs
- Femtosecond laser 300 W @ 1030 nm, 30 µJ, < 500 fs
- CW fiber laser diode 1 KW @ 915 nm
- Fiber laser continuous wave 10 KW @ 1070 nm

WORKSTATIONS

- Machines and workstations for 3D micromachining [Scanlab scanners, Motorized stages from Newport IMS/RV series or Aerotech ALS/PRO series and ADRT/ACS series]
- Machine for high precision micromachining 900 x 600 cm
- Machine for precision machining (focalisation < 5 µm) equipped with a hybrid hexapode ALIO
- Galvo-scanner ExcelliSCAN 1030 nm and 515 nm
- Galvo-scanner Intelliscan 1030 nm, 515 nm and 343 nm
- Galvo-scanner Hurryscan II and III 1030 nm
- Polygonal IR and Vert scanner, scanning speed up to 100m/s
- Scan solution for synchronously controlling a scan head and translation stages / Scanlab XLScan
- Dynamic focus module
- IR, vert et UV cutting and drilling heads
- Dynamic laser beam shaping head / SLM
- Cutting-edge optical components for beam shaping (top-hat profile, polarization converter, DOE)
- Evaluation and development of innovative optical systems
- Trepanning head for deep drilling and non-tapered applications
- 6 axis robotic arm KUKA, STAUBLI, FANUC field of 1x1m²
- Caterized on-the-fly drilling platform



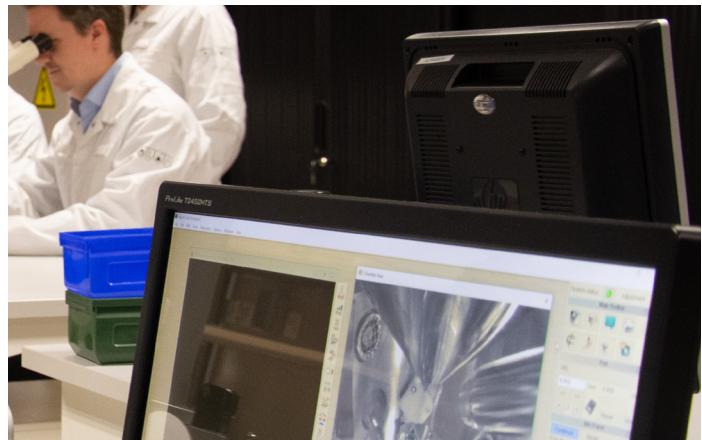
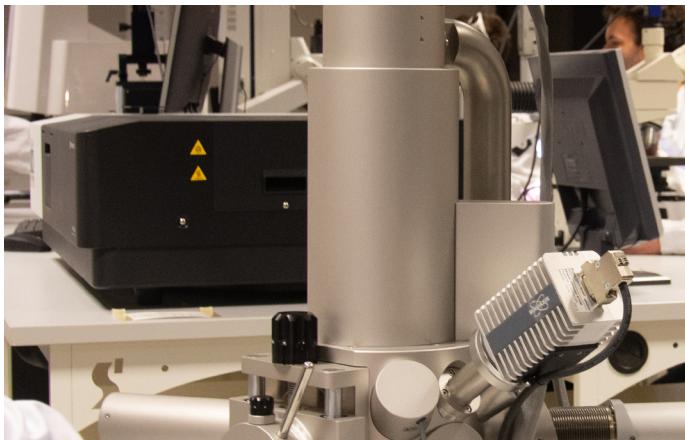
NEW TECHNOLOGIES 2019

Workstations

- Polygonal IR scanner, scanning speed up to 200 m/s
- Scan head and robotic arm synchronisation module Blackbird

RELATED METROLOGY

- Optical microscope with image analysis system
- Optical system for 3D surface measurement
- Measuring microscope with calculator
- UV-VIS-NIR beam diagnostic
- Desktop scanning electron microscope (SEM)
- 3D reconstruction module for scanning electron microscope
- 4-point measuring stand for resistivity measurement
- Measuring microscope with analysis measurements
- Goniometer for contact angle measurements
- Colorimeter in the visible range
- Spectrophotometer equipped with integrating sphere
- Chainsaw, wrapper and polisher for metallographic analysis



NEW TECHNOLOGIES 2020

Lasers

- Optical reflectometer
- Tension and compression tester