

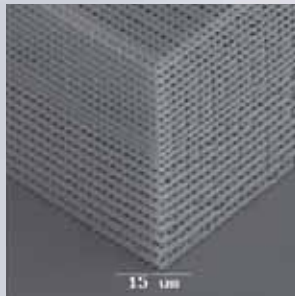
# NANOPHOTONICS AND APPLIED LASER PROCESSES

2PP – Process development  
with customized machine  
design:

- Stand alone or lab systems for 2-D and 3-D micro- and nanostructuring
- Integration of on-site available femtosecond laser-systems is possible

The LZH offers  
the complete process chain:  
suggestion of materials,  
process parameters,  
and customized machines

Uniquely large area (>10x15cm<sup>2</sup>)  
3-dimensional structuring:



Information and Consulting



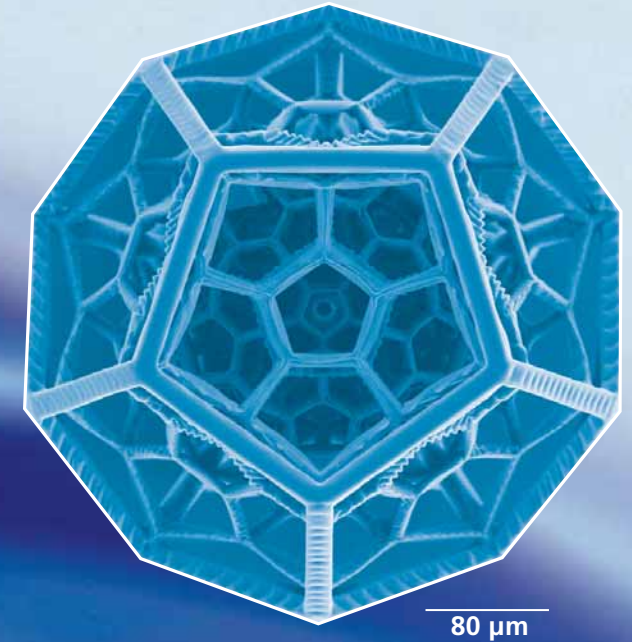
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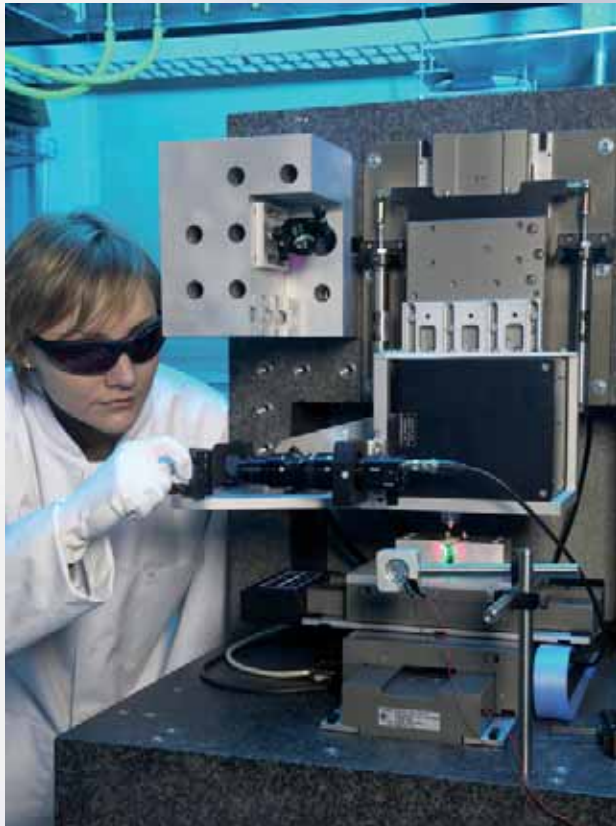
Advanced laser technologies and  
industrial process development for the  
generation of 2-D and 3-D micro- and  
nanostructures

#### Applications in:

- micro-optics
- micro-fluidics
- micro-mechanics
- surface structuring
- biomedicine
- photonic crystals
- and more ...

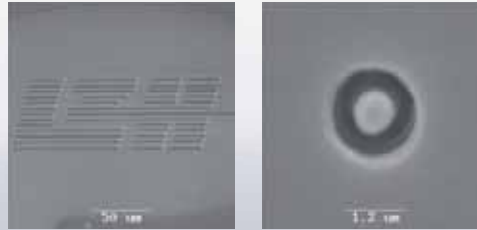
# M3D – Real 3-Dimensional Micro-Structuring System

- industrial ready turnkey system
- high resolution (100nm) and high quality 3-D fabrication
- use of commercially available photosensitive materials
- compatible to industrial standards
- stereolithography data format (STL)
- high fabrication speed (>mm/s)
- standard or customized systems
- working area of >10x15cm<sup>2</sup>



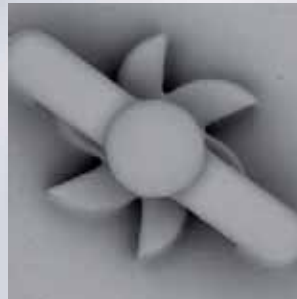
## Application examples

### Surface patterning:



- mask generation
- high resolution large area patterning
- pattern transfer

### Micromechanics:



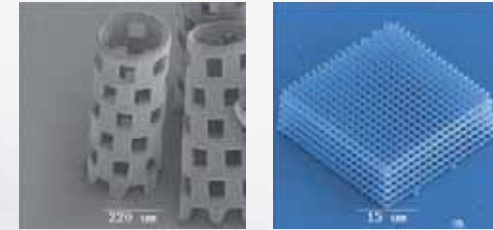
- movable 3-D structures
- microactuators

### Microfluidics:



- novel microfluidic systems
- microchannel networks and devices

### Biomedical applications:



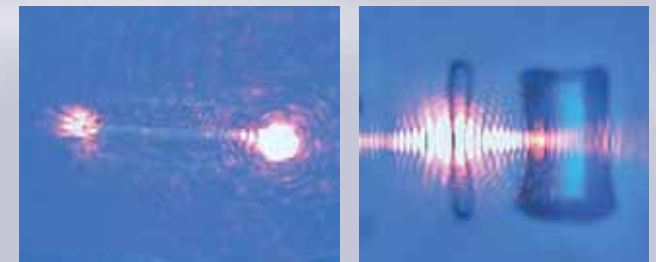
- drug delivery systems
- micro-implants and stents

### Optics:



- 2- and 3-D waveguides
- various optical elements in arbitrary configuration (lenses, prisms, ...)

### Surface Plasmonics:



- dielectric and metallic microstructures and waveguides for manipulating surface plasmon polaritons