



# High-precision 3D printing in research, prototyping and production

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EPIC Online Technology Meeting on 3D Printing

May 15, 2020

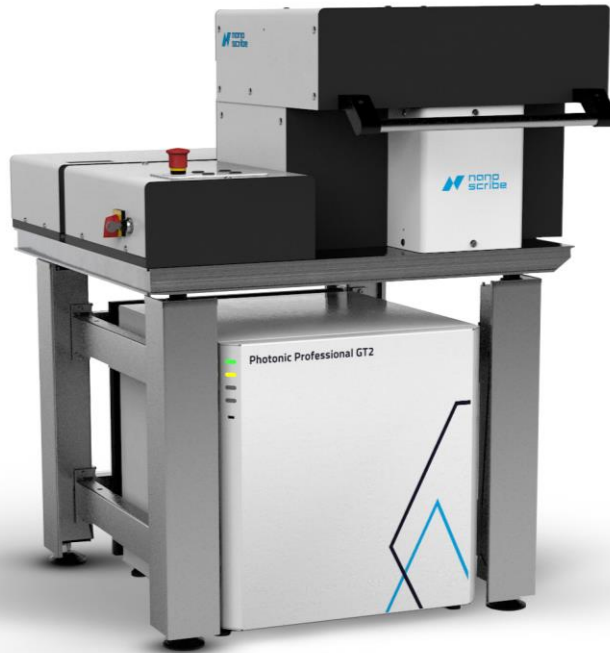


# What does Nanoscribe offer?

Comprehensive ecosystem for  
microfabrication



We offer cutting-edge  
**microfabrication systems**  
with matching resins,  
software tools, optimized  
processes, technical  
consulting and services.



Photonic Professional GT2

We offer cutting-edge  
**microfabrication systems**  
with matching resins,  
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consulting and services.



Quantum X

We offer cutting-edge  
**microfabrication systems**  
with matching resins,  
software tools, optimized  
processes, technical  
consulting and services.



# Who is Nanoscribe?

What we do and  
where we come from

# Nanoscribe worldwide in figures





In January 2020 we moved our headquarters to the brand-new **ZEISS Innovation Hub @ KIT** with modern facilities and  $>4,200 \text{ m}^2$  of space to take microfabrication to the next level.

Join our EPIC meeting on  
November 5+6, 2020



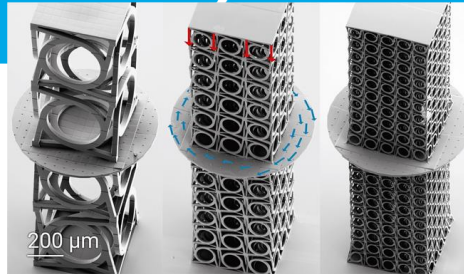
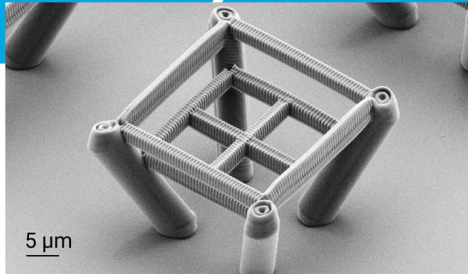
nano

micro

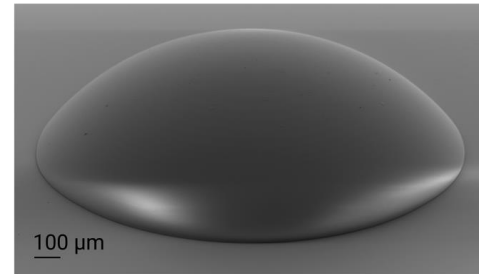
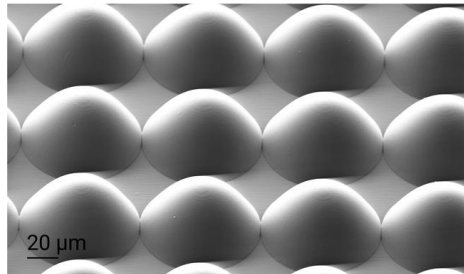
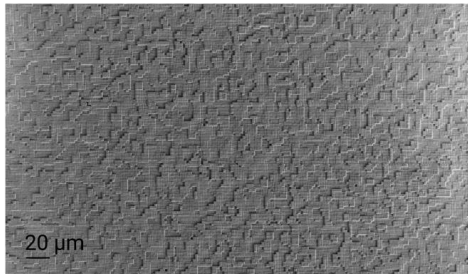
meso

macro

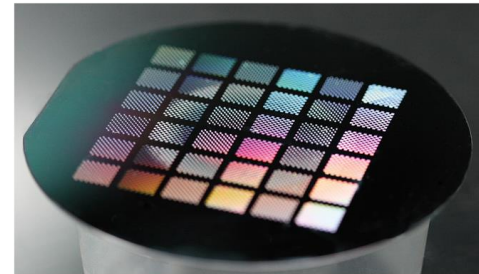
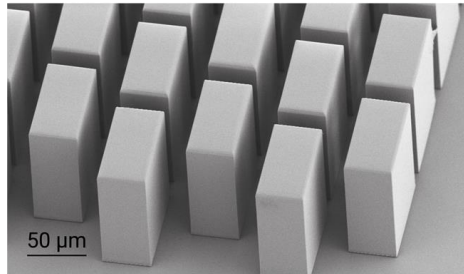
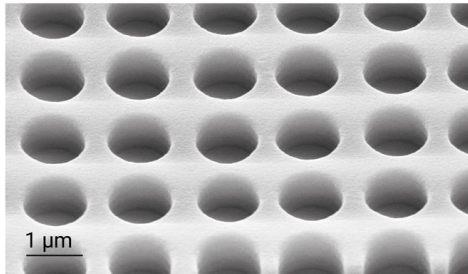
3D



2.5D



2D

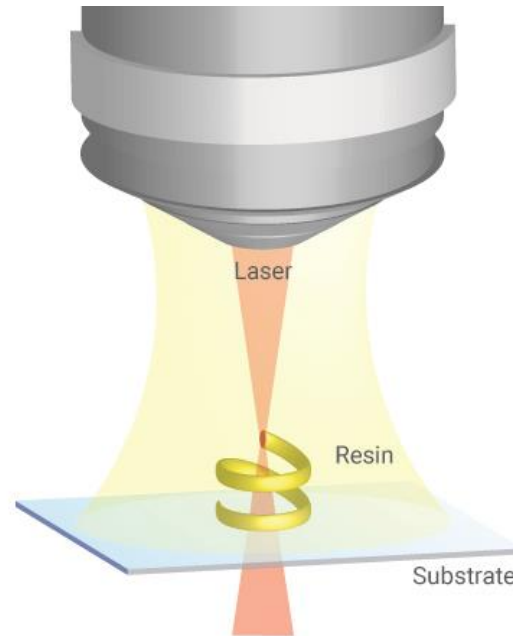


# Two-Photon Polymerization



- ▶ Additive manufacturing technique
- ▶ Submicrometer resolution
- ▶ Strongly confined exposure
- ▶ High-speed galvo scanning
- ▶ High-resolution printable resins
- ▶ Printing in one process step

Contact me to learn more about 2PP!

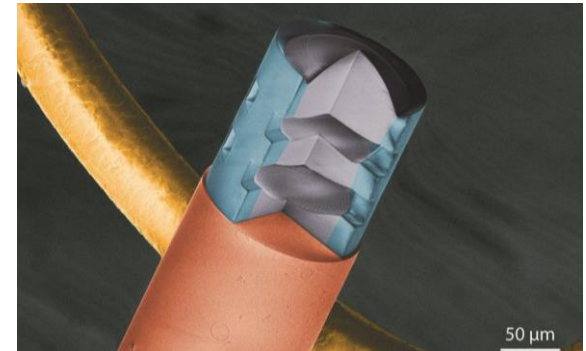
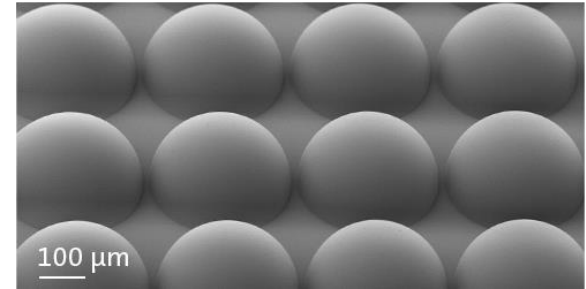


# Applications



Demonstrated success in applications like:

- ▶ Photonics
- ▶ Integrated photonics
- ▶ Refractive + diffractive microoptics
- ▶ Microfluidics
- ▶ Rapid prototyping
- ▶ Micro-mechanics/MEMS
- ▶ Life sciences
- ▶ Materials engineering

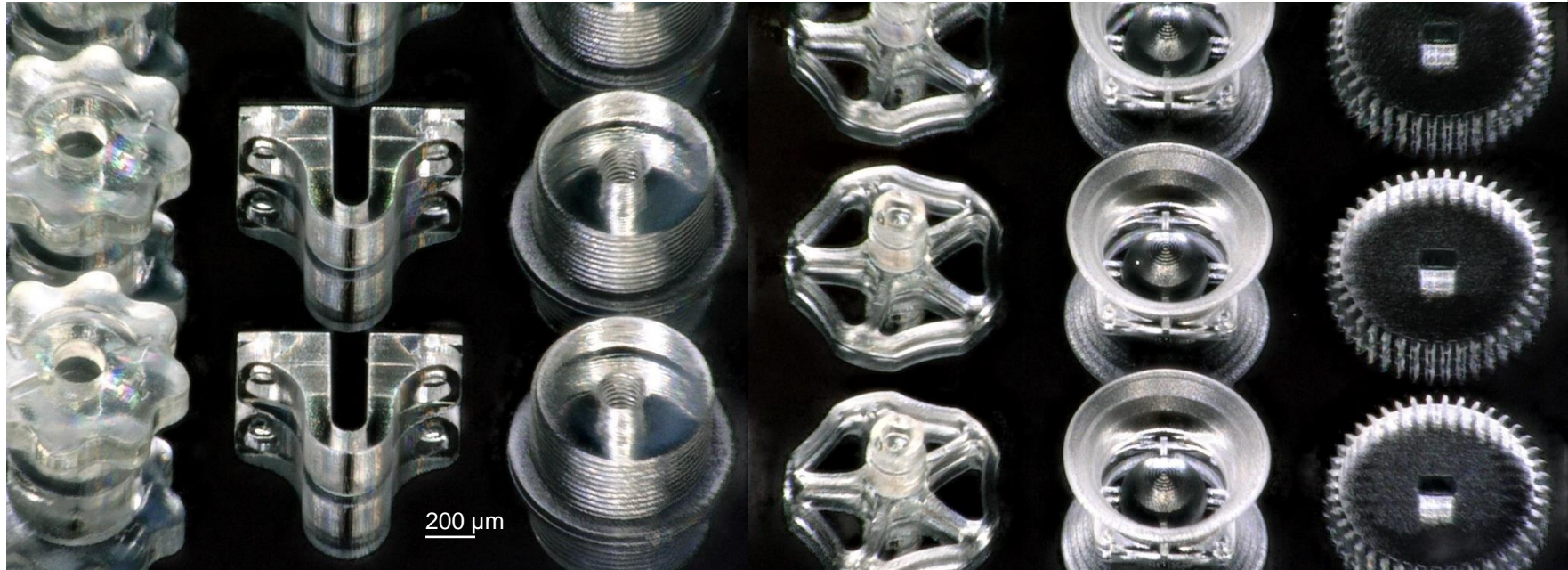


T. Gissibl et al., Nature Phot. 10, 554 (2016)

## 3D printing of meso scale objects



## 3D printing of meso scale objects



Print time: 5 min for each mechanical part with 1mm diameter



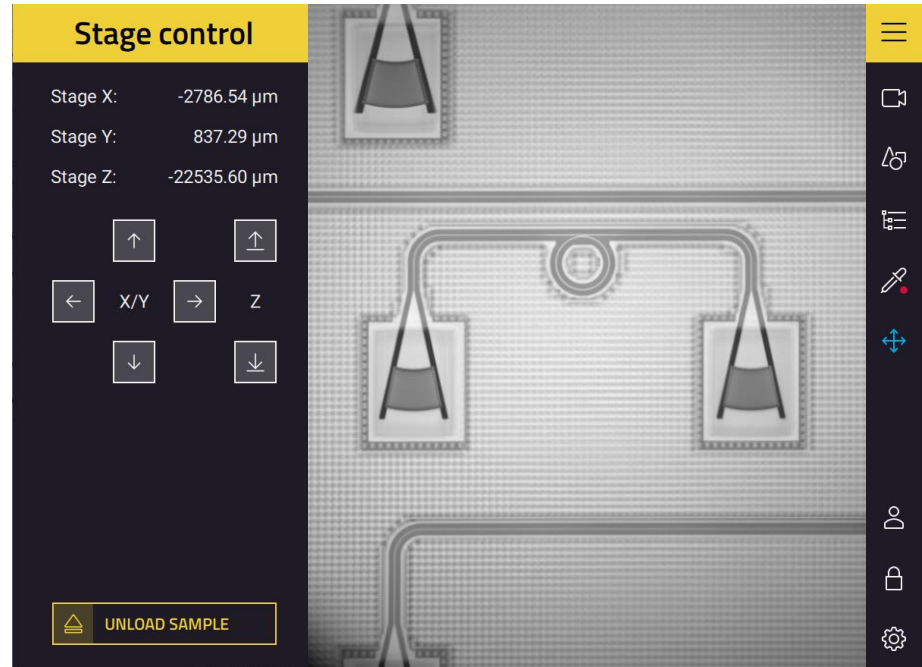
# Additive photonic packaging



We drive assembly-free production of optical components - without further assembly, alignment, or fixing steps.

- ▶ On chip
- ▶ On fiber
- ▶ On laser
- ▶ Wafer-scale or die

Contact us to discuss your challenges!





# What is Nanoscribe looking for?

# Nanoscribe – what we look for



- ▶ Pioneers and innovators driving industrial applications requiring 3D microfabrication
- ▶ Partners seizing the benefits of assembly-free photonic integration to bring enhanced products to the market
- ▶ We offer feasibility demonstrations to show the compatibility with your application.



Contact: [legant@nanoscribe.com](mailto:legant@nanoscribe.com)



World's highest resolution  
3D printer





# Think big. Print nano.

Questions?

Alexander Legant

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