

# Our Team



**Dipl.-Phys. Patrick Gretzki** is project- and research manager of the micro- and nanostructuring group for functional surfaces. Since the Fraunhofer Gesellschaft combines fundamental and process research with university and industrial partners, Patrick Gretzki is responsible for the acquisition and coordination of national and international projects.

**M. Sc. Matthias Trenn** is also a member of the micro- and nanostructuring group. He is working with ultrashort pulsed laser radiation to selectively remove and modify material in order to produce high-precision surface structures or selective thin-film removal. These processes can be applied in various sectors such as automotive, electronics, and medical technology.

**M. Sc. Karsten Braun** is working for the laser polishing group. By re-melting a thin surface layer, the surface of many materials such as metals, glasses, and thermoplastics are smoothed due to the interfacial tension. By precise application of laser irradiation the surface roughness can reach a near optical finish while maintaining the delicate details.

**Dr. Elke Bremus-Koebberling** faces new challenges in medical and biotechnology. Light as a non-contact instrument offers great advantages, both in the manufacture of appropriate instruments and in diagnostics itself. Also, processing materials with lasers makes it possible to functionalize specific areas of the surfaces when preparing them for medical technology applications.

## Additive Manufacturing of 3D Microfluidic MEMS for Lab-on-a-Chip applications.

[www.m3dloc.eu](http://www.m3dloc.eu)



Fraunhofer Institute for Lasertechnology

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# Who we are

The **Fraunhofer Institute for Laser Technology ILT** is part of the Fraunhofer-Gesellschaft, with 72 institutes, more than 25,000 employees and an annual research budget of 2.3 billion euros. The **Fraunhofer ILT** is worldwide one of the most important development and contract research institutes of its specific field. The activities cover a wide range of areas such as the development of new laser beam sources and components, precise laser based metrology, testing technology and industrial laser processes.

As a tool, light is indisputably an innovation driver. Germany occupies a top position worldwide in the field of optical technology and is holding its own as the world leader in laser manufacturing technology. And, thanks to the intensive research it carries out at the cutting edge between science and practice, the **Fraunhofer ILT** has been making its own contribution to this success - for more than 30 years. The range of services offered by **Fraunhofer ILT** covers the entire value creation chain from process development through the design and implementation of new system components all the way to the construction of system concepts for the specific customer requirements.

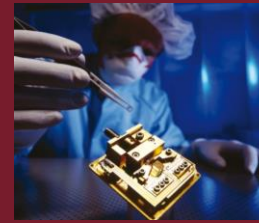
Inside the M3dloc project **Fraunhofer ILT** will develop a new laser based toolchain for the fabrication and measurement of micro-fluidic devices. From a fundamental understanding of the laser processes and the interaction with the material **ILT** will build a prototype production line.



# Our products & services



## LASERS AND OPTICS



- Optics Design
- UV, VIS- and Tunable Lasers
- Ultrafast Lasers
- Solid State Lasers
- Fiber Lasers
- Free-Form Optics
- Modelling and Simulation Tools

## LASER MATERIAL PROCESSING



- Laser Cutting
- Laser Welding
- Soldering
- Polishing
- Laser Metal Deposition
- Thin Film Processing
- Ultrashort Pulse Processing
- Micro/Nano- Structuring
- In-Volume Structuring

## MEDICAL TECHNOLOGY AND BIOPHOTONICS



- Bioanalytics
- Laser Microscopy
- Clinical Diagnostics
- Microsurgical Systems
- Microfluidic Systems
- Biofunctionalization
- Biofabrication
- Laser Therapy
- Implants

## LASER MEASUREMENT TECHNOLOGY



- Production Measurement Technology
- Material Analysis
- Recycling and Raw Materials
- Environment and Safety
- EUV Technology