

## Master Thesis:

# Design, Fabrication, and Experimental Evaluation of Microscale On-Chip Terahertz Antennas

Terahertz (THz) technology is key to future high-speed communication, sensing, and imaging systems. This thesis explores a novel additive manufacturing approach for **microscale on-chip THz antennas** using **direct laser writing (DLW)**.

### Research Focus:

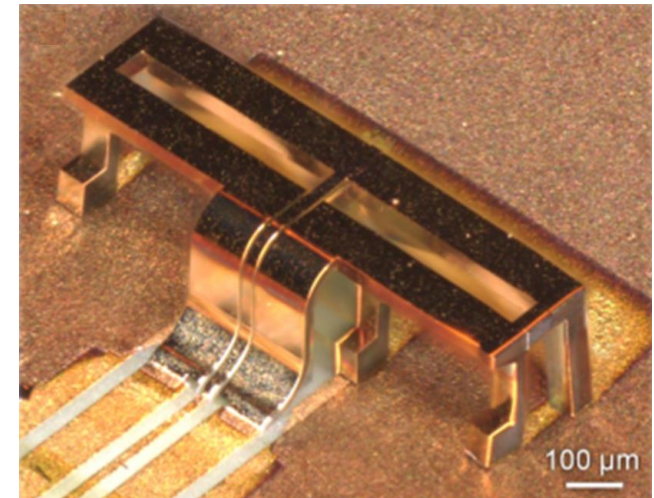
- Design of microscale THz antennas for on-chip applications
- Fabrication using femtosecond laser direct writing
- Maskless, 3D-capable metal printing directly on substrates
- Experimental evaluation of antenna performance at THz frequencies

### Research Goals:

- Design and realize microscale on-chip THz antennas
- Experimentally evaluate antenna performance at THz frequencies
- Assess the feasibility of multimaterial printed antennas for on-chip integration

### Impact:

- Enables compact and scalable THz on-chip systems
- Advances additive manufacturing approaches for THz components
- Supports future THz communication and sensing technologies



P. Maier, et al. *arXiv preprint arXiv:2401.03316* (2024)

### Your tasks:

- Literature Review and Background Research
- Design and Simulation
- Fabrication
- Testing and Characterization

### For detailed information contact:

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