

# Master Thesis:

## Flexible and Tunable Circuits for THz Applications

### Research Focus:

- Develop **flexible and tunable circuits** using **laser-written metal structures** on **flexible substrates** (e.g., polymers).

### Research Goals:

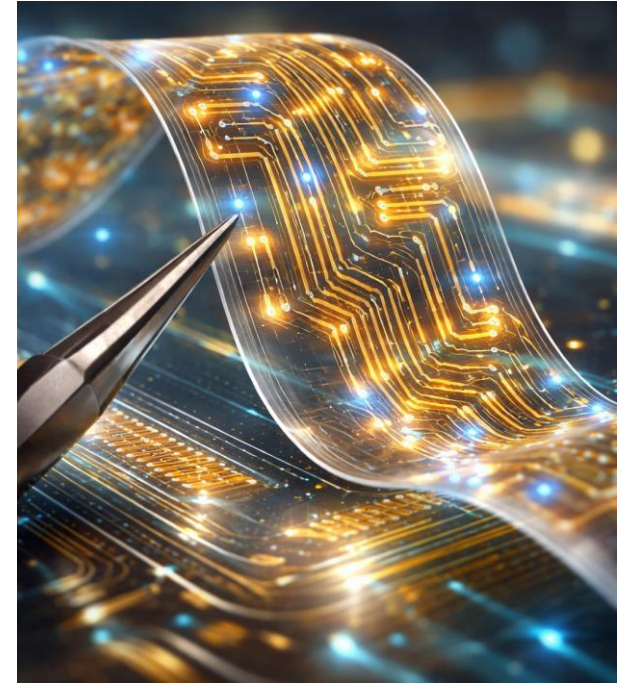
- Explore the fabrication of **flexible on-chip THz circuits**.
- Investigate **adaptive performance** under varying environmental and operational conditions.

### Applications:

- **THz communication systems**: Reconfigurable circuits for high-speed, low-power wireless transmission.
- **Adaptive sensing**: Real-time sensor networks for **health monitoring** and **environmental sensing**.
- **Wearable sensors**: Compact and flexible sensors for **personalized health tech** and **biosensors**.

### Impact:

This research aims to push the boundaries of **flexible electronics**, making **adaptive, on-chip THz systems** more efficient, portable, and versatile for future communication and sensor applications.



### Your tasks:

- Literature Review and Background Research
- Design and Simulation
- Fabrication of Flexible Circuits
- Testing and Characterization

### For detailed information contact:

M. Sc. Sina Foroutan Barenji

[Sina.barenji@kit.edu](mailto:Sina.barenji@kit.edu)

Tel. +49 721 608 41934

Prof. Dr. Christian Koos

[Christian.koos@kit.edu](mailto:Christian.koos@kit.edu)

Tel. 0721-608-42481