

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
Tel. +49 721 608 41934

Prof. Dr. Christian Koos
Christian.koos@kit.edu
Tel. 0721-608-42481