

## University of Stuttgart

Institute of Robust Power Semiconductor Systems

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Our research group develops analog frontends for THz wireless communication systems operating at millimeter-wave (mmW) and sub-mmW frequencies (up to 330 GHz).

In scope of that, several components must be developed, e.g.:

- Amplifiers
- Phase shifters
- Variable attenuators
- Vector modulators
- Analog pre-distortions

You will use the 100-nm GaN on SiC HEMT technology for the mmW designs and the 35-nm InGaAs HEMT technology for the sub-millimeter wave designs, both provided by the Fraunhofer Institute of Applied Solid-State Physics.

The goals of the theses are the development and evaluation of different circuit topologies for a selected front-end component. This involves literature research, circuit design using Keysight's Advanced Design System, electromagnetic simulations, and layout of the circuit.

The workload will be adjusted according to which kind of thesis you execute.

Research/ Bachelor/Master Thesis



Integrated Circuit Design für mmW/sub-mmW Communication [various topics]







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