Graz University of Technology
Institute of Electrical Measurement and Sensor Systems

Master‘s thesis (30 ECTS)

Working title: Photonic *design IP block* specification, design, characterization and documentation on passive Silicon Nitride waveguide technology

In cooperation with: ams AG

Objectives/deliverables:

- Specification and optical design of 2 optical design IP blocks
- Description of the operating principle, theory, physics, device structure, and key design parameters of the selected design IP blocks
- Optical device simulations of the selected design IP blocks
- Design of the test structure test chip required for the optical characterization measurements
- Specification and description of the optical measurements required for the optical characterization measurements
- Optical measurement and analysis of the designed test structures. Comparison between simulated optical design and the measurement results. Extraction of the key design performance parameters.
- Documentation of the designed IP block into a device data sheet format.

Additional:

- Designed test chip will be manufactured on ams waveguide technology
- Optical measurements at TU Graz
- Optical simulations at TU Graz

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Organizational matters:

- Contractual partner: ams AG
- Duration: 6 months

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