TECHNISCHE UNIVERSITÄT DRESDEN

Faculty of Electrical and Computer Engineering, Chair for RF and Photonics Engineering

Integrated Solutions for Optical Orbital Angular Momentum Multiplexed Transceivers

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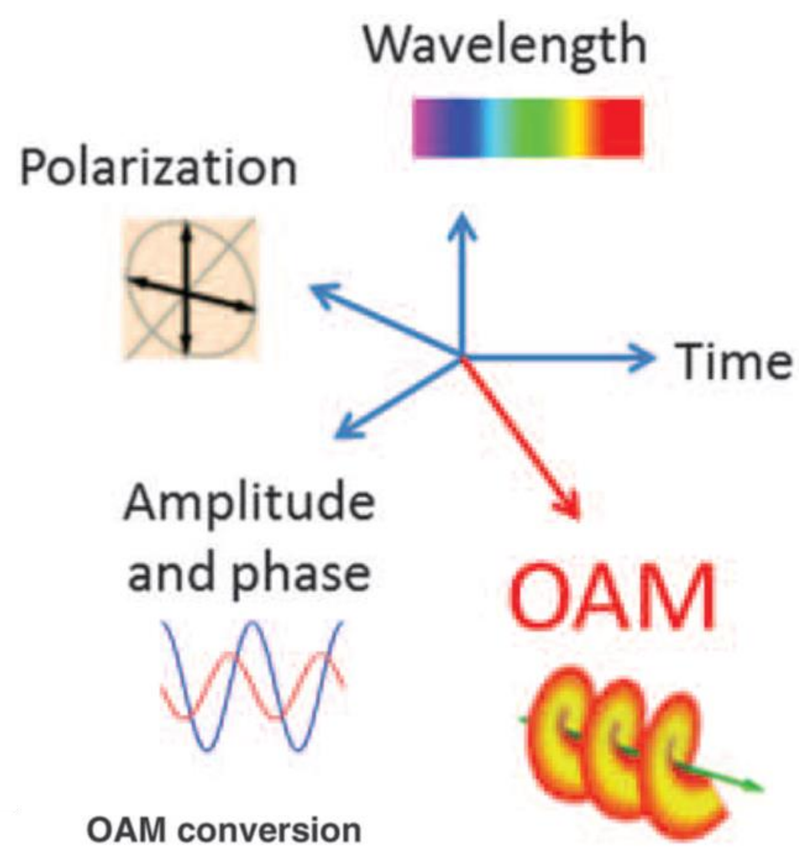
Introduction & goals

Development of compact integrated optical components for optical orbital angular momentum (OAM) multiplexed transceivers

- On-chip generation
- On-chip transmission
- On-chip processing of optical vortices

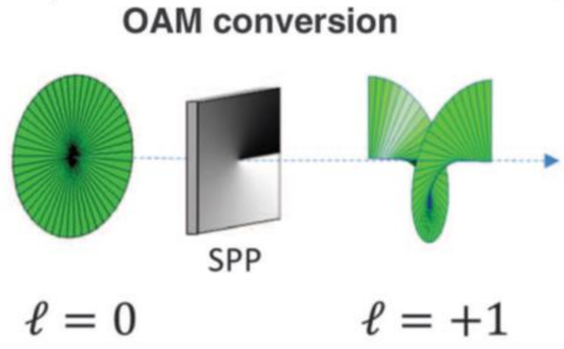
- short-range transmission scenarios

- fabrication process compatible with existing lithography and micromachining technologies

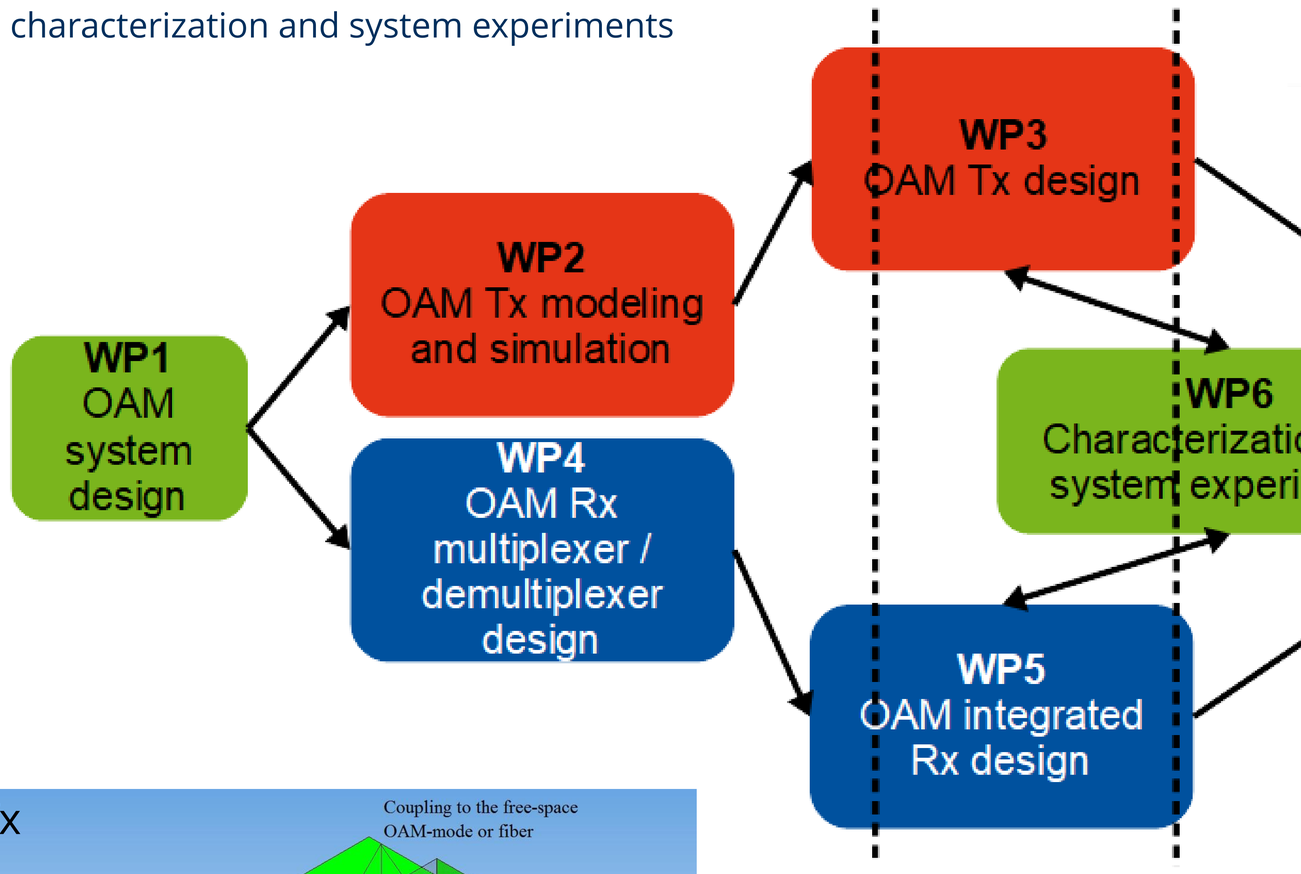


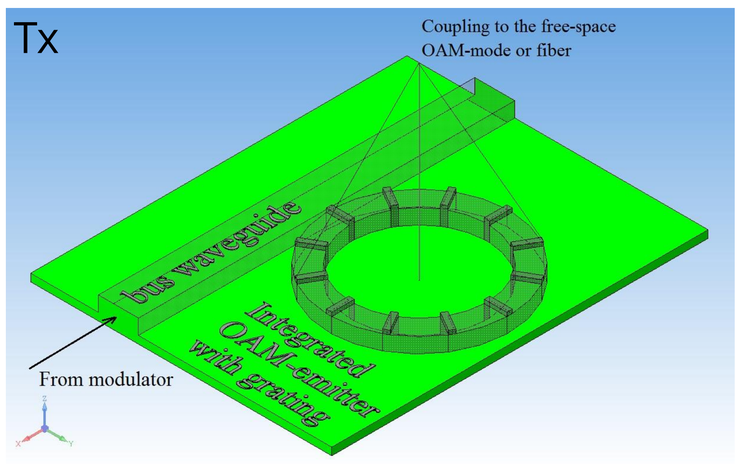
Work plan

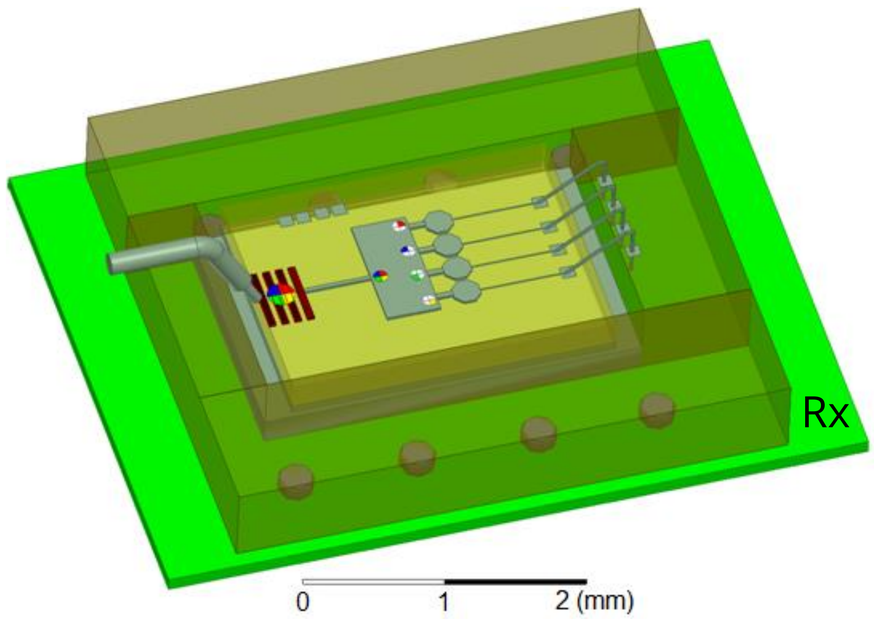
- theoretical and numerical investigation of vortex propagation in (on-chip)-waveguides
- system specification
- design of integrated OAM multiplexer / demultiplexer
- design of OAM integrated Rx
- design of OAM integrated Tx
- characterization and system experiments



Bozinovic, Nenad, et al. "Terabit-scale orbital angular momentum mode division multiplexing in fibers." *science* 340.6140 (2013): 1545-1548.







Mitglied im Netzwerk von: DRESDEN concept

Collaboration
Ufa State Aviation Technical University

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