

The Collaborative Research Center “Wave phenomena – analysis and numerics” (CRC 1173), is currently seeking to recruit, as soon as possible, limited to three years, a

Doctoral Researcher (f/m/d) **Project C4 “Modeling, design and optimization of 3D waveguides”**

The CRC 1173 has been funded by the German Research Foundation (DFG) since 2015. Its goal is to analytically understand, numerically simulate, and eventually manipulate wave propagation under realistic scenarios by intertwining analysis and numerics.

The Project C4 “Modeling, design and optimization of 3D waveguides” (www.waves.kit.edu/C4) aims at developing, implementing, and experimentally verifying techniques for fast and reliable description of light propagation in 3D-printed freeform waveguides. To this end, the project brings together researchers from electrical engineering, physics, and mathematics that jointly work on building the base for numerically efficient theory-guided design of such structures.

We seek a doctoral researcher or a post-doc with strong interest both in experimental and theoretical aspects of wave propagation in complex 3D waveguide structures. Your work will focus on the experimental aspects of the project and comprise concept development, simulation, and design of 3D freeform waveguides and waveguide-based photonic devices, the development, refinement and adaptation of fabrication techniques based on 3D laser lithography, as well as the characterization and functional demonstration of the fabricated devices. You will closely cooperate with peers from physics and mathematics to advance and refine the underlying quantitative models and to use them for exploring novel device concepts. You will have the opportunity to attend conferences, workshops and summer schools. Engagement in teaching is encouraged.

We provide an inspiring, attractive, interdisciplinary, and internationally recognized scientific environment with access to excellent facilities of the KIT, a wide scope of advanced training options within our integrated research training group, and flexible working time models. Our CRC aims at the implementation of equal opportunities, it promotes diversity and supports persons with childcare or eldercare responsibilities as well as persons with disabilities. Funds for travel and guests are available through the CRC.

The following qualifications are required seeking your consideration for this position:

- Excellent Master or an equivalent degree in Electrical Engineering, Photonics or Physics.
- Strong theoretical and/or experimental background in optics, particularly guided-wave optics or photonic integration.
- We expect excellent writing and oral communication skills along with the ability to work independently within an international team.

We offer an attractive and modern workplace with access to excellent facilities of KIT, diverse and responsible tasks, a wide scope of advanced training options, supplementary pension with the VBL (Pension Authority for Employees in the Public Service Sector), flexible working time models, a job ticket (BW) allowance, and a cafeteria/canteen.

We prefer to balance the number of employees (f/m/d). Therefore, we kindly ask female applicants to apply for this job.

If qualified, severely disabled persons will be preferred.

Please apply online (<http://www.pse.kit.edu/karriere/joboffer.php?id=54924&language=en>) until **November 30th, 2020**, using the vacancy number 1029. Personnel support is provided by Ms Brückner Personalservice, Karlsruhe Institute of Technology (KIT), Campus Süd, Kaiserstraße 12, 76131 Karlsruhe for further information, please contact Prof. Christian Koos, phone +49-721-608-42491, or Ms Laurette Lauffer, email: laurette.lauffer@kit.edu.