Doctoral or Post-Doctoral Researcher (f/m/d) for the CRC 1173 Project C4 “Modeling, design and optimization of 3D waveguides”

Job description
The CRC 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 optimization of such structures using, e.g., artificial-intelligence (AI) approaches, 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.

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

- Excellent Master, PhD, 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.

Salary
Salary category 13, depending on the fulfillment of professional and personal requirements.

Organizational unit
Institute for Analysis (IANA), Institute for Applied and Numerical Mathematics (IANM)

Starting date
as soon as possible

Contract duration
limited to three years

Application up to
31.03.2021

Contact person in line-management
For further information, please contact Prof. Christian Koos, phone +49-721-608-42491 or Ms Laurette Lauffer, email: laurette.lauffer@kit.edu.

Application
Please apply online via https://www.waves.kit.edu/joboffers.php for this vacancy number 1021/2021.

Personnel Support is provided by
Ms Brückner
phone: +49 721 608-42016,
Kaiserstr. 12, 76131 Karlsruhe

We prefer to balance the number of employees (f/fm/d). Therefore we kindly ask female applicants to apply for this job. Recognized severely disabled persons will be preferred if they are equally qualified.