

Faculty Electrical and Computer Engineering

At the Professorship for Measurement and Sensor Systems, there is now a position (www.tu-dresden.de/et/mst/)

Research Associate, Predoc/Postdoc
Computational and Secure Fiber Communication
(if the personal requirements E 13 TV-L are met, up to 100%)

for three years with the option of extension (length of employment according to WissZeitVG). There is the opportunity for your own further academic qualification (usually PhD or habilitation).

Secure optical communication through fiber optics is an essential part of the digital transformation. Fiber optic networks are the backbone of the global Internet infrastructure and must be prepared for the continuously increasing demands of digital innovations. In this context, multi-mode optical waveguides represent promising connection types that enable a significant increase in achievable network capacities through parallel spatial degrees of freedom. The task of our research is to explore new metrological methods based on classical and non-classical light in order to achieve a paradigm shift in information security on the physical layer.

Tasks: The focus is on research into innovative concepts for light control using multimode optical fibers, which enable (de)multiplexing of quantum states via the spatial degrees of freedom. For this purpose, spatial modulation techniques for the generation of structured light are investigated and single and entangled photons are used. Your activities include the realization of a measurement system, the characterization of the light transmission properties, the implementation of experiments and the scientific publication of the results.

Prerequisites: Above-average scientific HSA in the subject physics or related areas; Ability and willingness to work independently and conceptually in a team; Interest in practice-oriented, interdisciplinary cooperation with partners from research and industry; Knowledge of software development and digital signal processing; Previous knowledge of optics, quantum optics, MATLAB or Python is advantageous.

We offer: Laboratories with modern equipment; excellent contacts in research and industry; visiting international conferences and an interdisciplinary, flexible team

Women are expressly encouraged to apply. The same applies to people with disabilities.

You can send your complete application documents at any time to: **TU Dresden, Faculty of Electrical and Computer Engineering, Professorship for Measurement and Sensor Systems, Prof. Dr.-Ing. habil. J. Czarske, Helmholtzstr. 10, 01069 Dresden** or with a single email to grp-mst-sekretariat@msx.tu-dresden.de

Your application documents will not be returned, please only submit copies. Presentation costs cannot be covered. Technical questions will be answered with pleasure: Mr. Stefan Rothe, stefan.rothe@tu-dresden.de