

The Chair for Applied Physics is a leading research facility in quantum optics, polaritonics, and nanostructure opto-electronic devices. We operate the Gottfried Landwehr Laboratory for Nanotechnologies, a 550 m² clean room facility equipped with a complete semiconductor technology line, including epitaxial growth as well as nanostructure fabrication and characterization. Our research is conducted within numerous national and international projects and collaborations with other universities, research centers and the industry.

We are looking for a

PhD candidate in the field of quantum optics and laser physics

Research project

In the project (Project PI: Prof. Dr. Sebastian Klemmt), we investigate coupled optical resonators for the creation and investigation of exceptional points. The study of open wave or quantum systems has been an important topic in physics for many decades. In the last years, the focus has shifted to non-Hermitian systems including those exhibiting parity-time symmetry. The main reason for the strong interest are exotic degeneracies, so-called exceptional points (EPs) in parameter space. These points are of substantial fundamental interest as well as offer potential for sensing applications. In this project, we will design, fabricate and study non-Hermitian phenomena in coupled optical resonators utilizing the group III/V-based semiconductors. The designs will involve coupled ring resonators as well as coupled vertical resonator systems. In order to theoretically support the project, excellent national and international theoretical collaborations are additionally involved.

Requirements

- Master's degree in physics (or equivalent)
- basic knowledge of solid state physics and quantum physics
- experience with semiconductor microcavities (fabrication/investigation), ideally
- originality and productivity in research
- excellent English skills (working language is English)

What we offer

- a 2/3 position for a duration of 3 years with a possible extension of 1 year
- payment based on the German TV-L scale
- a unique opportunity to join a strong interdisciplinary multi-national team of researchers with a shared interest in quantum physics and semiconductors
- working in a state-of-the-art technological infrastructure
- mentoring and career development opportunities
- possibility to contribute to scientific publications
- Earliest starting date: 1st April 2023

How to apply

Please send your application including your cover letter, CV, list of publications and recommendation letters in one single pdf file (no more than 10 MB) to **Prof. Dr. Sebastian Klemmt** (sebastian.klemmt@physik.uni-wuerzburg.de). The deadline is **31st March 2023**.

The University of Würzburg is an equal opportunity employer. All qualified applicants will be considered for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, disability or age.



For questions

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