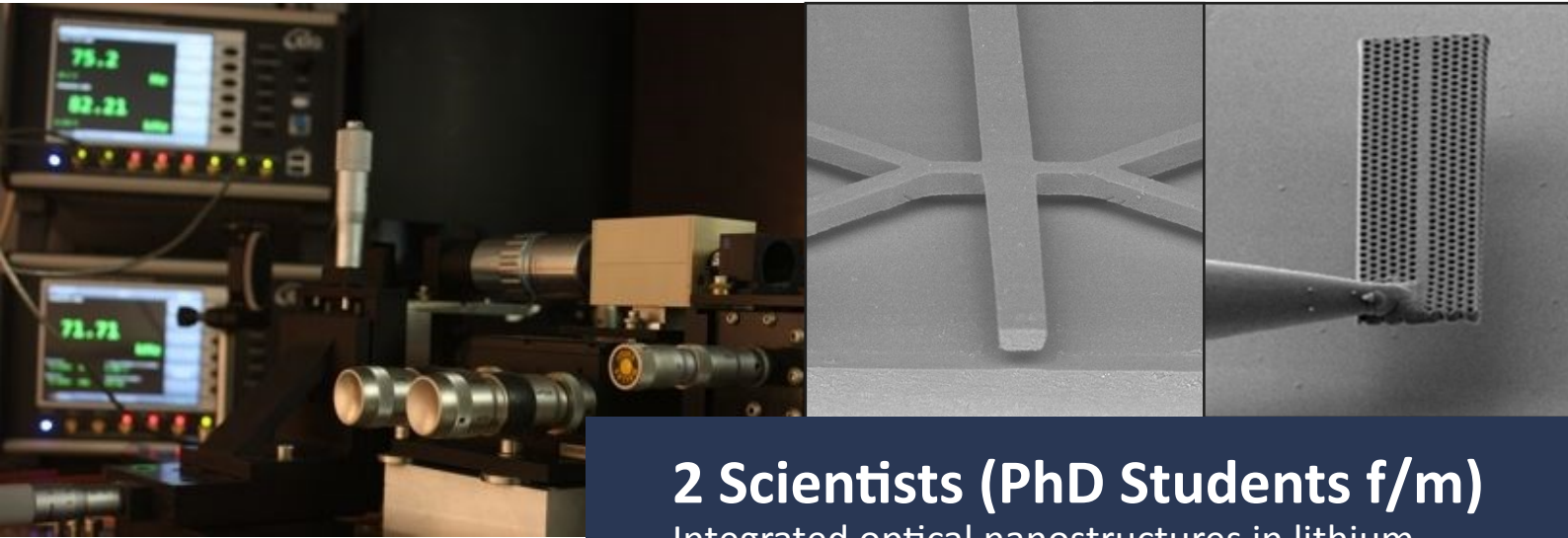


*Current research topics of the junior research group "3Dtransform" concern the development of nanoscaled functional optical elements and devices for quantum optics, nonlinear optics and imaging applications.*



## 2 Scientists (PhD Students f/m)

Integrated optical nanostructures in lithium niobate for applications in quantum optics

### JOB DESCRIPTION

The tasks of the PhD students are connected to developing lithium niobate into a high-quality platform for integrated nano quantum optics. To this end, several new technologies have to be developed and optimized, which allow the realization of different integrated optical devices, e.g. lasers, detectors, or modulators, on optical chips made from thin films of lithium niobate. Furthermore, the theoretical understanding of the interplay of nonlinear generation and propagation of photon states in highly dispersive waveguide systems on the optical chip has to be deepened and effects relevant for applications in quantum optics have to be identified. Finally, experimental characterization techniques have to be refined and applied to completely characterize and optimize realized samples.

### DESIRED QUALIFICATIONS

- Excellent master's degree in physics or photonics
- Fundamental knowledge of nonlinear and quantum optics
- Fundamental knowledge of integrated optics
- Experience in nanofabrication
- Practical experience in simulations for integrated optics
- Practical experience with experiments in nano optics and quantum optics
- Excellent skills in English (written and spoken), basic knowledge in German is appreciated
- Ability to work independently as a researcher and effectively in a team

The PhD positions will be paid in accordance with the German Public Services Regulations TV-L (E 13). The Friedrich Schiller University Jena is an equal opportunity employer. We also welcome applications from handicapped persons.

Please send your application by email with the usual documents (CV, Letter of motivation, references, list of publications, etc.) to:

Dr. Frank Setzpfandt  
Institut für Angewandte Physik  
Albert-Einstein-Str. 15, 07745 Jena  
Email: [f.setzpfandt@uni-jena.de](mailto:f.setzpfandt@uni-jena.de)  
web: [www.iap.uni-jena.de/setzpfandt](http://www.iap.uni-jena.de/setzpfandt)

Questions regarding the positions can be addressed to the same address.

Review of applications will start immediately and will be continued until the positions are filled.