

# Ph.D. Position

We are seeking a candidate for Ph.D. for our “**Photon Interaction in cold gases**”-Project with a starting date from now on (position fully funded in accordance to German standard tariff TV-L E13 50%).

Our research group “Experimental Quantum Optics and Quantum Information” at the Johannes Gutenberg-University Mainz focusses on investigating quantum optics and quantum information science with cold, neutral atoms.

Within this project we are investigating the controlled manipulation of stored quantum information by implementing an array of multiple storage sites by using cold atoms trapped in a multi-channel crossed dipole trap. The multiple sites of stored light pulses can be individually addressed and controlled to e.g. actively merge and split stored light pulses. This will pave the way to realize novel quantum devices such as an optical racetrack memory or quantum registers.

## What we offer:

Within the SIF project, we offer you the opportunity for independent hands-on work in a state-of-the-art quantum optics lab. Within your thesis, you will have the possibility to investigate a variety of interesting topics, including:

- the development and implementation of control schemes for multi-segmented memories for light storage
- the investigation of actively controlled splitting and merging processes for stored light pulses.
- the implementation of a racetrack memory for light

In addition to cutting edge research, you will also have the opportunity to present your work on international conferences and workshops.

## Requirements:

You should have an excellent university degree (Master of Science or equivalent) in physics. Previous experience in the field of experimental laser physics and/or quantum optics and/or the physics of cold quantum gases is favorable.

Please send your application including the common documents (cover letter, curriculum vitae and certifications) electronically to Professor Patrick Windpassinger.

In case of any questions, please also do not hesitate to contact us.

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