PhD opportunity in structured light for optical trapping

We are seeking a highly qualified and ambitious candidate for a position as a

Research Associate with the aim of pursuing a PhD
(Wissenschaftliche/r Mitarbeiterin / Mitarbeiter)

for three years with a full-time salary at TVL E13 (39 hours and 50 minutes per week).

The position is offered within the framework of the Innovative Training Network (ITN) **ColOpt (Collective effects and optomechanics in ultra-cold matter)**, a European Training Network involving eleven different partners from six European countries (Austria, France, Germany, Italy, the United Kingdom, and Switzerland).

The training network is funded by the Marie Skłodowska Curie actions (MSCA). Researchers can be of **any nationality** but need to demonstrate transnational **mobility**; i.e., at the time of recruitment by the host organisation, researchers must not have resided or carried out their main activity (work, studies, etc.) in the country of the host organisation for more than 12 months in the 3 years immediately before the reference date. Details can be found at (http://colopt.phys.strath.ac.uk/).

Research programme and environment

In general, the ColOpt research programme focuses on collective interactions of light with laser-cooled cold and quantum-degenerate matter. Of particular interest is integrating classical and quantum self-organization. This area of research aims to explore innovative control of matter through optomechanical effects, identify novel quantum phases, enhance knowledge of long-range coupled systems, and advance the associated trapping, laser, and optical technologies, thereby establishing new concepts in quantum information and simulation. In particular, the position within the Nonlinear Photonics Group of the Department of Physics at the **University of Münster (WWU Münster)** is aimed at the experimental realization of **novel light structuring techniques based on spatial light modulators for advanced optical trapping.**

The **Department of Physics** at the University of Münster is one of the largest in Germany, offering bachelor's and master's degrees in physics as well as a structured PhD programme. In addition, the Department of Physics is world-renown for its excellence in nanophysics, nonlinear physics, and photonics; it houses a Center for Nanotechnology, a Center for Soft Nanoscience, and a Center for Nonlinear Science.

The **Nonlinear Photonics Group** focuses on developing techniques and advances in structuring light for novel optical trapping schemes for nano- and biophotonics and on developing material processing techniques for information processing applications. The main research topics are basic investigations in photonic crystals, femtosecond laser lithography, nanostructuring, holographic optical tweezers, biomedical applications in cells, and nonlinear optics. Further information is available at www.nonlinear-photonics.de.

Ideal candidate

We are looking for an excellent, highly motivated candidate with a physics degree and strong interest and experience in nonlinear optics, laser physics or structured light. We expect the candidate to be dedicated to and enthusiastic about experimental research as well as open and curios; the candidate should also be willing and able to work on a team.

Training provided

The research training will comprise a broad portfolio of training on technical and transferable skills at the local and network levels. The project will be part of a **vibrant and stimulating international and intersectoral collaboration** that will excellently prepare the candidate for a broad range of academic

and industrial careers. Strong participation of non-academic partners and the interaction of academic and industrial partners is meant to raise awareness of career opportunities and to foster a culture of knowledge exchange and fruitful interaction between the academic and private sector, in particular to drive the emerging quantum technologies. Major anticipated secondments will be to our partners Holoeye in Berlin and the Universities of Strathclyde and Glasgow, UK.

At WWU Münster, the successful candidate will be enrolled in the PhD program of the Department of Physics under the supervision of Prof. Dr. Cornelia Denz. The candidate will also be able to participate in the soft skills training provided by the WWU Münster Graduate Centre and will be a member of the Center for Nonlinear Science.

The start date of the appointment is **as soon as possible up to August 2017**, but we can accommodate a slightly later start date if required.

How to apply

Please apply by **30 June 2017** to Prof. Dr. Cornelia Denz, denz@uni-muenster.de. Please include a 2-page CV, a 1-page cover letter (including names and contact details of at least two references), a copy of your BSc and MSc degree certificates, and transcripts.

The University of Münster is an equal opportunity employer and is committed to increasing the proportion of women academics. Consequently, we actively encourage applications by women. Female candidates with equivalent qualifications and academic achievements will be preferentially considered within the framework of the legal possibilities. We also welcome applications from candidates with severe disabilities. Disabled candidates with equivalent qualifications will be preferentially considered.