

We are seeking a highly qualified and ambitious candidate for a

PhD on Radiation pressure instabilities in cold atoms

within the framework of the Innovative Training Network (ITN) [ColOpt](#) (**Collective effects and optomechanics in ultra-cold matter**), an European Training Network involving eleven different partners from six European countries (Austria, France, Germany, Italy, UK, Switzerland). The training network is funded within 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 their host organisation for more than 12 months in the 3 years immediately before the reference date.

Research Programme

The research program of ColOpt in general focuses on collective interactions of light with laser-cooled cold and quantum-degenerate matter. A particular novelty is the integration of classical and quantum self-organization. It will 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, establishing new concepts in quantum information and simulation. The position opened at the Institut Non Linéaire de Nice (<http://www.inln.cnrs.fr/activites/themesrecherche/atomes-froids>) is in particular aimed at the experimental realization of **radiation pressure based instabilities in the multiple scattering limit using cold atomic samples**. This dominantly experimental project will address the formation of photon bubbles and analyze long-range interactions in large thermal clouds with diffusive light propagation. It will implement fast frame fluorescent imaging (>3000 fps) to monitor real time evolution of the spatial density of the atomic cloud. Novel pump-probe techniques will be tested to provide information of the distribution of atoms beyond the average density, with e.g. access to a Debye shielding length.

Ideal candidate

We are looking for an excellent and highly motivated candidate with a physics degree and strong interest and experience in at least some of the areas of cold atoms, atomic physics or laser physics. We expect dedication and enthusiasm for experimental research combined with openness and curiosity and the ability and willingness to work in a team.

Training provided

The research training provided will comprise a broad portfolio of technical and transferable skills training on local and network level. 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 are to our partners Quantel and the Universities of Strathclyde and Innsbruck.

The starting date of the appointment is foreseen **earliest at April and until August 2017**, offering flexibility of an earlier or slightly later start, if required.

How to apply

Please send a 2-page CV and 1-page cover letter (including names and contact details of at least two references), a copy of your BSc and MSc degree certificate and transcripts to Robin Kaiser at Robin.KAISER@unice.fr. ColOpt is devoted to promote gender equality and diversity and encourages female researchers to apply. Applications are invited till April 1st, but later applications are considered until the position is filled.