

JOB OFFER

| | |
|---|--|
| Position in the project: | PhD student |
| Scientific discipline: | Physics (quantum optics/ photonics) |
| Job type (employment contract/stipend): | Stipend |
| Number of job offers: | 2 |
| Remuneration/stipend amount/month: | Stipend 4500 PLN/month (net) |
| Position starts on: | 01.01.2019 |
| Maximum period of contract/stipend agreement: | 36 months |
| Institution: | Faculty of Physics, University of Warsaw |
| Project leader: | Dr Michal Karpinski |
| Project title: | Phase-only shaping of light pulses for applications in quantum technologies <i>The project is carried out within the FIRST TEAM programme of the Foundation for Polish Science</i> |
| Project description: | <p>Optical pulses form the backbone of photonic technologies. Their key characteristics are their temporal profile and their frequency spectrum. Experimentally, only one of these two parameters can be easily accessed, due to the incompatibility of time and frequency resolutions of detection and manipulation devices. The power of quantum mechanics manifests itself chiefly through the superposition principle: if two states of a system are valid quantum states, then their superposition is also a valid quantum state. The emerging quantum technologies are based on the ability to create, manipulate and detect quantum superpositions, which relies on the ability to access conjugate variables, such as the time and frequency for single-photon pulses. Here we will use novel tools to experimentally access temporal and spectral characteristics of quantum light pulses. We will manipulate and detect their quantum superpositions, and demonstrate their applications in quantum networks and metrology.</p> <p>The project will be carried out in close collaboration with international partners from the UK (Opotelectronics Research Centre, University of Southampton), Germany (Saarland University) and France (Sorbonne University in Paris).</p> |
| Key responsibilities include: | <ol style="list-style-type: none"> 1. Carrying out research tasks within the project involving either electro-optic or nonlinear-optical spectral shaping of single-photon pulses. This will include experimental work, numerical simulations and experimental data processing and analysis. 2. Preparing reports and scientific publications 3. Presenting your work at meetings and conferences. 4. You will be required to spend several months at the University of Southampton and/or University of Saarland throughout the project duration to master the experimental techniques of chirped fiber Bragg grating fabrication or |

| | |
|---|---|
| | <p>single-photon frequency conversion.</p> <p>5. You will be required to transfer the skills learned from the international project partners to the laboratory in Warsaw.</p> |
| Profile of candidates/requirements: | <ol style="list-style-type: none"> 1. Master's degree in physics or a related discipline 2. Experience in carrying out experimental research in optics (experience in experimental quantum optics will be an advantage) 3. Understanding of key concepts in quantum information and quantum optics. 4. Good communication skills in English (written and spoken) |
| Required documents: | <ol style="list-style-type: none"> 1. Cover letter 2. Curriculum vitae 3. Diplomas and academic transcripts from BSc and MSc studies 4. Please request a senior academic to send a reference about yourself directly to the e-mail address below before the application deadline. <p>Due to the entry into force of Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016, please include a clause expressing your consent to the processing of your personal data by the University of Warsaw for the purpose of carrying out the recruitment process in your application documents.</p> |
| We offer: | <ul style="list-style-type: none"> • Work at the forefront of current research activities in quantum optics • Access to a state-of-the-art equipped laboratory • Joining a friendly research team • Work in collaboration with excellent international partners • Training. |
| Please submit the following documents to: | <p>The documents should be submitted by email to mkarp [at] fuw.edu.pl as a single attachment (e.g. a single zip-archive).</p> |
| Application deadline: | <p>18 December 2018, 3 pm Central European Time (GMT+1)</p> <p>Selected candidates will be invited to an interview which will be carried out at the Faculty of Physics of the University of Warsaw on 20 December 2018, in person or via Skype.</p> |
| For more details about the position please visit (website/webpage address): | <p>http://photon.fuw.edu.pl</p> |
| Euraxess job/stipend offer (in case of PhD and postdoc positions): | <p>https://www.euraxess.pl/jobs/358527</p> |