

JOB OFFER

| | |
|---|--|
| Position in the project: | Student |
| Scientific discipline: | quantum physics (quantum information science) |
| Job type (employment contract/stipend): | stipend |
| Number of positions offered: | 1 |
| Remuneration/stipend amount/month: | monthly stipend 1 500 PLN (tax free) |
| Position starts on: | 01.04.2020 (for those only who are already students the starting date is negotiable) |
| Maximum period of contract/stipend agreement: | up to 24 months |
| Institution: | International Centre for Theory of Quantum Technologies at the University of Gdansk, Poland |
| Project leader: | Marek Żukowski |
| Project title: | <i>International Centre for Theory of Quantum Technologies (ICTQT)</i> [Project within the International Research Agenda programme of the Foundation for Polish Science] |
| Project description: | <p><u>About project</u></p> <p>We are looking for a student to work in the Multiphoton Quantum Optics for Quantum Information Group of the newly created International Centre for Theory of Quantum Technologies (ICTQT), funded by the Foundation for Polish Science, and hosted by the University of Gdansk. The founders of ICTQT are Marek Żukowski as the director, and Paweł Horodecki as a co-applicant. The Centre's official foreign partner is IQOQI-Vienna of the Austrian Academy of Sciences. Gdansk is the pioneering and leading center of quantum information research in Poland. Gdansk, and the whole Tri-City, is one of the most beautifully located urban areas in Poland, with sandy sea beaches, lakes, and woods within in it and in the nearby area. It is the birthplace of Polish jazz and rock festivals, and vibrant in many fields.</p> <p>The Centre consists of 6 groups: Foundational Underpinnings of Quantum Technologies (leader Ana Belen Sainz), Multiphoton Quantum Optics for Quantum Information (leader Marek Żukowski), New Quantum Resources (leader Paweł Horodecki), New Quantum Resources and Thermodynamics (leader Michał Horodecki), Quantum Cybersecurity and Communication (leader Marcin Pawłowski), Quantum Open Systems in Relation to Quantum Optics (leader Łukasz Rudnicki).</p> <p><u>About the Multiphoton Quantum Optics for Quantum Information Group</u></p> <p>The broad aim of the group is to develop theoretical quantum information science of immediate experimental testability as well as to study the fundamental issues like causality, new concepts in theoretical quantum optics, and efficiency of quantum (optical) protocols.</p> <p>Specific goals include:</p> <ul style="list-style-type: none"> - Operational translation of the schemes proposed by the other groups of ICTQT into experimental optical setups and feasibility studies. - Direct collaboration with experimental teams of our IQOQI partner as well as other laboratories. - Investigations concerning device independent or self-testing quantum communication, quantum information processing schemes, aimed at commercialization. - Search for new research avenues in quantum optics allowing demonstrations of quantum protocols or various kinds. - New indicators of non-classicality in quantum optics. - Application of theoretical/operational/experimental methods of quantum multiphoton interferometry to other processes of potential value for quantum communication and information processing. - Quantum optical implementations of secure data transmission. - Theory of optical test of quantum mechanics. |

| | |
|---|---|
| Key responsibilities include: | <ol style="list-style-type: none"> 1. Active scientific research. 2. Presentation of project results to internal and external parties. 3. Active involvement in seminars, group meetings etc. 4. Participation in organizational activity of ICTQT. |
| Profile of candidates/requirements: | <ol style="list-style-type: none"> 1. Bachelor's degree (or an equivalent) in physics, computers science or mathematics. 2. Interest in mathematical and conceptual foundations of quantum mechanics. 3. Optionally: experience in programming (C++, Python or Matlab). 4. Interest in the subject and motivation to scientific work. |
| We offer: | <ol style="list-style-type: none"> 1. Scholarship monthly 1500 PLN 2. Work in a rapidly developing unit, the International Centre for Theory of Quantum Technologies at the University of Gdansk; 3. Scientific and organizational support; 4. Basic equipment and core facilities; 5. Friendly, inspiring, interdisciplinary environment, including "entanglement" with National Centre for Quantum Information (KCIK) and Institute for Theoretical Physics and Astrophysics (IFTiA) at UG. |
| Required documents: | <p>All required documents should be prepared in English:</p> <ol style="list-style-type: none"> 1. filled-in recruitment form; 2. curriculum vitae; 3. motivation letter (including statement of current scientific interests)– up to 2 pages; 4. documents confirming scientific bachelor's, or equivalent, degree; 5. name and contact details (e-mail addresses) to one senior researcher who may provide reference for the candidate (<u>the candidate is expected to contact the referee and ask him/ her to send reference letters directly to ictqt@ug.edu.pl. The letters must be sent before the deadline</u>). ICTQT may also contact the referee directly, to request the letters, or to send reminders. |
| General rules of the recruitment process: | <ol style="list-style-type: none"> 1. The recruitment procedure has two stages: <ul style="list-style-type: none"> o Interview of pre-selected candidates by the Selection Commission(SC); o Formal recruitment at studies of either physics, or computer science, or mathematics. Recruitment is obligatory for those only who are not already students at Polish universities in the disciplines. 2. The student position is also offered to candidates who are already students at UG or other Universities. 3. The decision will be made by ICTQT Selecting Commission (SC) within 3 months from the date of recruitment completion. 4. SC reserves the right to invite for the interview only pre-selected candidates. 5. SC's decision is final and is not subject to appeal. 6. SC reserves the right to close the competition without selecting the candidate. |
| Please submit the documents to: | ictqt@ug.edu.pl |
| Application deadline: | March 12, 2020 |
| For more details about the position please visit: | https://ictqt.ug.edu.pl |