

JOB OFFER

Position in the project:	Student
Scientific discipline:	quantum physics (quantum cybersecurity and communication)
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 Quantum Cybersecurity and Communication Group (leader Marcin Pawłowski) 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 Zukowski as the director, and Pawel 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 Zukowski), 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 Quantum Cybersecurity and Communication Group</u></p> <p>The broad aim of the group would be to perform research concerning quantum phenomena which could be used for quantum methods for information transfer, coding and processing, aimed towards applied physics and possible commercialization.</p> <p>The goals of the group are:</p> <ul style="list-style-type: none"> - Development of self-testing protocols - Security analysis of information processing protocols - Research towards increasing efficiency and reliability of quantum protocols - Studies of general rules for information processing - Studies on quantum hacking and cryptanalysis to identify possible attacks and ways of preventing them - Investigations of the role of information processing protocols as a tool to analyze the fundamental laws of Nature - Finding experimental, applied physics, and industrial partners and collaborating with them towards building commercial quantum devices, prototypes, or obtaining patents.
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