

JOB OFFER no. Postdoc_PH_2023_10

Position in the project:	Postdoctoral Researcher in project Maestro-13 no. 2021/42/A/ST2/0035
Scientific discipline:	quantum physics
Job type:	Full-time employment
Number of positions offered:	1
Remuneration:	PLN ~ up to 11.000 gross per month
Position starts on:	January 1st 2024 (negotiable)
Maximum period of contract:	24 months
Institution:	International Centre for Theory of Quantum Technologies, University of Gdansk, Poland
Project leader:	Prof. dr hab. Paweł Horodecki
Project title:	Relativistic causality and information processing <i>The project financed within the Maestro-13 program by the National Science Center.</i>
Project description:	<p><u>About ICTQT</u> We are looking for the Postdoctoral Researcher to work in the International Centre for Theory of Quantum Technologies (ICTQT), funded by the Foundation for Polish Science, and hosted by the University of Gdańsk (UG) - pioneering and leading center of quantum information research in Poland.</p> <p>The Centre consists of 6 groups: Multiphoton Quantum Optics for Quantum Information (leader Marek Żukowski); New Quantum Resources (leader Paweł Horodecki); Foundational Underpinnings of Quantum Technologies (leader Ana Belen Sainz); 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). More about the research groups please find at you will find here: https://ictqt.ug.edu.pl/.</p> <p><u>About the group</u> The broad aim of the New Quantum Resources Group would be to perform research concerning quantum phenomena which could be used for quantum information processing. Exemplary goals of the group are:</p> <ul style="list-style-type: none"> – Connections between quantum computational speedup and contextuality/Bell-“nonlocality” – New protocols on randomness amplification – Research on communication networks – Connections between violations of Bell inequalities and of non-contextuality and the quantum advantage in communication complexity – Quantum batteries as open quantum systems – Relativistic quantum information processing

	<p>About the “Relativistic Causality and Information Processing” project</p> <p>The project’s central goal is to study the information-processing properties within the broad framework of „within-and-beyond-quantum” theories (relativistic quantum physics, PR-boxes, GPTs, etc.). To this end and integrative methodology combining the tools from i.a. quantum information, quantum field theory, relativity, C*-algebras and cryptography will be developed. Finally, protocols for physical implementations and/or simulations of some of the theoretical findings will be developed.</p>
<p>Key responsibilities include:</p>	<ol style="list-style-type: none"> 1. Active scientific research. 2. Presentation and discussion of ideas and results with a diverse audience at the ICTQT and at external events. 3. Active participation in seminars, group meetings, and other activities organized by the ICTQT.
<p>Profile of candidates/requirement:</p>	<ol style="list-style-type: none"> 1. The candidate should hold a PhD degree in physics or mathematics. 2. The candidate should be interested in mathematical and conceptual foundations of quantum mechanics and quantum information, and related topics, especially those which are within the research agenda of ICTQT (visit https://ictqt.ug.edu.pl/). 3. The candidate should have experience, confirmed by a publication record, in at least one of the following domains: operator algebras, quantum information, quantum field theory, Bell non-locality. 4. The candidate should be committed to working collaboratively within an inclusive and diverse environment. 5. The candidate should have an advanced level of English (the language level will be verified during the interview).
<p>We offer:</p>	<ol style="list-style-type: none"> 1. Full time employment in a rapidly developing unit - the International Centre for Theory of Quantum Technologies at the University of Gdansk. 2. Monthly salary together with social security and health insurance. 3. Scientific and organizational support. 4. Basic equipment and core facilities. 5. Travel funds for scientific collaboration and participation in conferences. 6. Friendly, inspiring, interdisciplinary environment.
<p>Required documents:</p>	<p>All required documents should be prepared in English:</p> <ol style="list-style-type: none"> 1. Recruitment form. 2. Curriculum vitae. 3. A research resume with a list of publications and a list of ongoing research projects (with specification of candidate role in the research if unclear). 4. PDF files (or links if open access) of the 3 most relevant publications authored by the candidate. 5. A list of talks at conferences and workshops, and a list of prizes and awards. 6. Documents confirming academic degrees (a copy of a PhD diploma or a certificate of obtaining the title. NOTE: Before signing the employment contract, the person selected in the competition will be requested to submit to the University of Gdańsk the original of the PhD diploma. At the stage of employment, other documents will not be honoured). 7. Reference letters about the candidate sent directly by two senior researchers (the candidate is expected to contact the referees and ask them to send reference letters directly to ictqt-careers@ug.edu.pl. The letters must be sent before the deadline).

Recruitment process:	<ol style="list-style-type: none">1. The recruitment procedure has two stages: The pre-selection of candidates by the Selection Commission (SC) (based on the application form), and the Interview of the pre-selected candidates.2. A postdoctoral position can be offered to candidates who received their PhD degree in 2017 or later.3. An interview is expected in December, 2023.4. ICTQT Selecting Commission (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 a candidate.7. The decision will be made by SC within 1 months from the date of recruitment completion.8. In the event of resignation from accepting the position of the selected candidate, the SC has the right to send the offer to the person placed on the reserve list, and in the absence of such a list, the SC has the right to reconsider the applications submitted to the competition and to indicate a new candidate application submitted to the competition and to indicate a new candidate.
Submit the documents to:	ictqt-careers@ug.edu.pl
Application deadline:	November 30, 2023