JOB OFFER

Position in the project:	Young post-doctoral researcher
Scientific discipline:	Physics
Job type (employment contract/stipend):	Full-time employment
Number of job offers:	1
Remuneration/stipend amount/month *("X0 000 PLN of full remuneration cost, i.e. expected net salary at X 000 PLN"):*	Full renumeration cost: 10000 PLN Expected net salary: 6330 PLN
Position starts on:	1 December 2021 – 1 February 2022 (flexible starting date)
Maximum period of contract/stipend agreement:	20 months
Institution:	Jagiellonian University
Project leader:	Prof. dr hab. Marek Kuś / Group leader: Dr Kamil Korzekwa
Project title:	*Near-term quantum computers, optimal implementations and applications* ***Project is carried out within the TEAM-NET programme of the Foundation for Polish Science***
Project description:	The broad aim of the newly established Quantum Resources Group is to develop a theoretical framework underpinning quantum technologies, with a particular focus on quantum computing and quantum thermodynamics. The main goals of the group are: • Identifying resources responsible for quantum advantage over classical strategies in various information-theoretic and thermodynamic tasks. • Characterising allowed resource transformations in different regimes. • Finding optimal ways to experimentally implement protocols exhibiting quantum advantage, while taking into account realistic constraints. These goals will be achieved within three research objectives: 1. Development of a unified framework for classical simulations of quantum circuits. 2. Devising feasible thermodynamic protocols exhibiting quantum advantage. 3. Constructing operational scenarios within the resource theory of coherence. Quantum Resources Group is established as a part of a larger project *Near-term quantum computers, optimal implementations and applications*. Within this project a network of four closely collaborating research groups, working on cutting-edge aspects of quantum technology, has been formed. The remaining three research groups focus on quantum computing, quantum machine learning and quantum error correction.

Key responsibilities include:	1. Active scientific research. 2. Presenting results at workshops and conferences. 3. Participation in mentoring of PhD and Master students. 4. Active role in setting up local and international collaborations. 5. Involvement in group activities (seminars, group meetings, etc.).
Profile of candidates/requirements:	1. PhD degree in physics, mathematics or computer science (obtained up to 5 years before starting work in the project). 2. Research experience in at least one of the following fields: • Quantum information theory, • Quantum computing, • Quantum foundations. 3. Interest in quantum thermodynamics and resource theories will be an additional benefit. 4. Experience in mentoring and/or supervising students. 5. Fluent spoken and written English.
Required documents:	1. Curriculum vitae. 2. Research record with a list of publications, talks and academic awards. 3. Short motivation letter including the description of current research interests (max. 1 page). 4. Documents confirming the scientific degrees (copies of MSc and PhD diplomas). 5. Names and contact details (e-mail addresses) of at least two senior researchers who may provide references for the candidate. The candidate is expected to contact the referees and ask them to email reference letters to kamil.korzekwa@uj.edu.pl (the letters must be sent before the deadline).
We offer:	1. Full time employment for 20 months with negotiable starting date (but each month later than 1st of February 2022 means a month shorter contract due to a fixed ending date of the project on the 28th of September 2023). 2. 13 salaries a year, each up to 7660 PLN/1680 EUR before tax (expected after-tax salary up to 5840 PLN/1280 EUR), so up to 6330 PLN/1390 EUR per month after tax. 3. Travel funds. 4. Basic equipment and core facilities. 5. Scientific and organisational support.
Please submit the following documents to:	kamil.korzekwa@uj.edu.pl
Application deadline:	11 November 2021
For more details about the position please visit (website/webpage address):	http://kamilkorzekwa.com/group/research_agenda.pdf https://www.quantum-resources.com/
Euraxess job/stipend offer (in case of PhD, postdoc, leader and young leader positions):	https://euraxess.ec.europa.eu/jobs/694658

Due to the entry into force of Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016, we also require that your job advertisements include a clause requesting the candidate's consent to the processing of his or her personal data by the institution which carries out the recruitment process.

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