

Call for applications for a group leader of the project

“Near-term quantum computers, optimal implementations and applications”

The project

We are looking for a group leader in a project funded by Foundation for Polish Science run by a consortium of three Polish scientific institutions: Center for Theoretical Physics of the Polish Academy of Sciences (CTP PAS, the leader of the consortium), Jagiellonian University (JU), and Institute of Theoretical and Applied Informatics of the Polish Academy of Sciences (ITAI PAS). Professor Marek Kuś from CTP PAS is the leader of the entire project.

The consortium runs three research groups: Quantum Computing Group (leader Michał Oszmaniec, CTP PAS), Quantum Machine Learning Group (leader Zbigniew Puchała, ITAI PAS) and New Quantum Resources group led Kamil Korzekwa at Faculty of Physics, Astronomy and Applied Computer Science of the Jagiellonian University. The call concerns the position of the leader of the fourth group working on **Quantum Error Correction** at the JU in Kraków. The part of the consortium established at the Jagiellonian University is led by Karol Życzkowski.

Quantum Error Correction Group

The broad aim of the group would be to develop new techniques to cope with noise and imperfections affecting quantum systems and to render processes useful for quantum computing and other applications. In particular, the goal is to design novel quantum error correction codes and to extend known schemes of fault-tolerance quantum information processing.

The applicant is welcome to add other goals, provided they fit into the broad topic of the group, and general aims of the project.

Key responsibilities of the Leader

1. Planning, execution, and management of a research program.
2. Training of the group in quantum information processing; coordination of the work of the group.
3. Mentoring of PhD students and post-doctoral scientists.
4. Development of a Master and a PhD training program.
5. Research leadership involving expansion to new fields of quantum information processing and active role in setting up of international research networks.
6. Active procurement of new research grants from external sources (Flagship, ERC, National Science Centre, etc.).
7. Bearing the responsibility for professional integrity of the group.

We offer

- Full time employment from June 1, 2020 till 30 September 2023 (40 months), subject to periodical evaluations, monthly gross salary around 15 400 PLN.
- Chance and challenge to create your own team.
- Funds guaranteed to set up a team including
 - a) a senior post-doctoral researcher (monthly gross salary up to 11 500 PLN);
 - b) a junior post-doctoral researcher (monthly gross salary up to 7 700 PLN);
 - c) two PhD students positions (each with a monthly gross salary 6 000 PLN);
 - d) funds for master students (2 000 PLN scholarship per month);for the entire period of the project (40 months).

- Scientific and organizational support.
- Basic equipment (with additional funds for necessary supplements) and core facilities.
- Travel funds.

Candidate's profile

A candidate for a Leader of a Research Group should be a scientist of global recognition in his/her field, with an outstanding scientific achievements, and an experience in managing of a research group. We are looking for an exceptionally motivated candidate with at least a PhD degree in physics, mathematics or computer science, with a proven track record, solid knowledge and working experience in quantum information or related fields. The applicant should have the ability to independently run research projects and supervise graduate students (preferably PI experience in grants, and experience in supervising). Experience in cooperating with industrial partners or in patenting would be highly welcome.

Required documents

- filled in recruitment form (basic formal information);
- curriculum vitae;
- research record with a list of publications, and list of research projects (especially those in which the candidate was the principal investigator); PDF files of five most important papers (or just hyperlinks, in the case of open access publications); a list of invited talks at conferences and workshops, and a list of academic prizes and awards;
- letter of motivation (including description of immediate and, separately, long-term research plans, innovation potential and possible prospects to establish industrial connection, all discussed in relation with the research aims of the project) – up to five pages;
- documents confirming the scientific degrees (copies of Master, PhD, habilitation diplomas and professorial nominations);
- names and contact details (e-mail addresses) of at least three senior researchers who may act as references for the candidate. The candidate is expected to contact these senior researchers and ask them to send reference letters *directly* to Mrs. Agata Hadasz at the Jagiellonian University. The letters must be sent before the deadline.

How to apply:

Applications should be submitted by e-mail: agata.hadasz@uj.edu.pl no later than **April 15th, 2020**.

General rules of the recruitment process

- *Candidates may run simultaneously for all positions offered by the project. This must be declared in the application form*
- *The decision will be made by the Scientific and Economic Committee (SEC) of the Consortium within six weeks from the date of closing the call*
- *An interview is expected. SEC reserves the right to invite for the interview only pre-selected candidates*
- *SEC's decision is final and is not subject to appeal. However, it must be approved by Foundation for Polish Science*
- *SEC reserves the right to close the competition without selecting the candidate*
- *In the case of resignation of a candidate recommended for the position of a Leader of Research Group, or failure to receive the Foundation for Polish Science's approval, SEC is re-assembled to re-evaluate the candidates earlier short listed for the interview, or may ask to publish a new call for the position.*

Deadline of application submission: **April 15th, 2020**.