**Call for applications for a junior group leader of a new project
"Near-term quantum computers, optimal implementations and applications"**

The project
We seek for a group leader in a new 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 leads the entire project.

The project aims at characterizing the computational power and to investigate possible practical applications of quantum computing devices consisting of a limited number of imperfect qubits. To realize the goals we will form a network of closely collaborating research groups working on cutting-edge aspects of quantum computing: quantum machine learning, control of quantum systems, quantum error-correction and identification resources responsible for quantum speedup.

The consortium will run four research groups: Quantum Computing Group (leader Michał Oszmaniec, CTP PAS), Quantum Machine Learning Group (leader Zbigniew Puchała. ITAI PAS), Quantum Error Correction Group, and Quantum Resources Group. Two last groups will be established at the Jagiellonian University in Kraków (Faculty of Physics, Astronomy and Applied Computer Science). The part of the consortium established at JU will be supervised by Karol Życzkowski.

Quantum Resources Group
The broad aim of the group would be to identify resources allowing for attain quantum advantage over classical strategies in various tasks. It is expected that the focus of the group will focus on quantum computation (near-term quantum computers, quantum supremacy and universal quantum computation). In particular, we are going to investigate the boundary between classically simulable and universal models of quantum computing in order to clarify necessary conditions, under which the advantage of quantum information processing becomes dominant.

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.
3. Mentoring of PhD students and post-doctoral scientists;
4. Research leadership involving expansion to new fields of quantum information processing and active role in setting up of international research networks.
5. Active procurement of new research grants form external sources (Flagship, ERC, National Science Centre, etc.).
6. Bearing the responsibility for professional integrity of the group.

We offer
- full time employment from 1 October 2019 till 30 September 2023 (48 months), subject to periodical evaluations, remuneration12 200-16 200 PLN/month (total gross earning)
- chance and challenge to create your own team,
- funds guaranteed to set up a team including
  a) two junior post-doctoral researcher positions (monthly gross salary up to 8 100 PLN),
  b) two PhD student positions (each with a monthly scholarship up to 6 200 PLN)
  c) funds for master students (2 000 PLN per month),
  d) travel funds for the whole period of the project (4 years)
- scientific and organizational support

- basic equipment (with additional funds for needed supplements) and core facilities,

Candidate's profile
A candidate for a (Junior) Leader of Research Group should be a scientist of global recognition in his/her field, with an outstanding scientific achievements, and some experience in management of a research group. We are looking for an exceptionally motivated candidate with at least PhD in physics, mathematics or informatics, with a proven track record, solid knowledge and working experience in quantum information related fields. He/she should have ability to run independently research projects and supervise graduate students (preferably experience in grants as PI or co-PI, and experience in (co)-supervising). An experience in cooperation with industrial partners or in patenting would be highly welcome.

Required documents
a) filled in recruitment form (basic formal information);
b) curriculum vitae;
c) 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 of the candidates, a list of talks at conferences and workshops, and a list of academic prizes and awards;
d) 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;
e) documents confirming the scientific degrees (copies of Master, PhD, habilitation diplomas and professorial nominations);

f) names and contact details (e-mail addresses) of at least two senior researchers who may act as references for the candidate (The candidate is expected to contact the references and ask them to email reference letters to jobs@nisq.eu. The letters must be sent before the deadline.).

How to apply:
Applications should be submitted by e-mail: jobs@nisq.eu no later than June15th, 2019

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) within two months from the date of closing the call.
- An interview is expected. SEC reserves the right to invite for the interview only pre-selected candidates. We expect that the interview will be held in the first of July in Warsaw (the confirmation will be sent to the prospect candidates shortly after the 15th of June)
- -SEC's decision is subject to appeal within 7days from its announcement . The final decision 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.

According to Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016, we also require that by applying, a candidate expresses his/her consent to the processing by the Jagiellonian University of his/her personal data needed for the recruitment process.

Deadline of application submission: **June15th, 2019 (12 PM CEST).**