

## **Director of Institute of Theoretical and Applied Informatics, Polish Academy of Sciences announces open competition for post-doc position in Quantum Systems of Informatics Group**

INSTITUTION: Institute of Theoretical and Applied Informatics, PAS

CITY: Gliwice

COUNTRY: Poland

POSITION: post-doc (in polish adiunkt)

DISCIPLINE: informatics

POSTED: 27.08.2019

DOCUMENTS SUBMISSION DEADLINE: 30.09.2019 15.00

URL: [www.iitis.pl](http://www.iitis.pl)

KEYWORDS: quantum information; quantum machine learning; control of quantum systems; quantum error-correction; quantum speedup.

### DESCRIPTION:

Project title:

Near-term quantum computers: challenges, optimal implementations and applications

Project is carried out within the Team-Net programme of the Foundation for Polish Science

### Project description:

Quantum computers promise savings in time and effort necessary to perform certain computational tasks, which themselves are of great practical relevance for many branches of science and industry. Building a working quantum computer is a notoriously difficult task due to the destructive influence of noise and decoherence affecting large-scale quantum systems. Therefore, one expects that in the near future only devices consisting of a limited number of imperfect qubits (basic units of quantum computers) will be available. Our project aims to characterize the computational power and to investigate possible practical applications of such devices. To realize these ambitious 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.

### Project leader:

Prof. dr hab. Marek Kuś / Group leader dr hab. Zbigniew Puchała

### Requirements:

- doctoral degree in technical or mathematical sciences in the discipline of computer science (obtained up to 5 years before starting work in the project);
- experience in scientific research, confirmed by authorship or co-authorship of publications from the following fields:
  - Quantum information theory,
  - Numerical calculations,

- Classical probability theory,
- Random matrix theory and free probability
- programming skills, confirmed by authorship or co-authorship of publications from the following fields:
  - Julia,
  - Python;
  - GPU;
- good team-working skills;
- fluent spoken and written English.
- Additional advantages will be the ability to:
  - didactic experience in the field of random matrix theory;
  - didactic experience in the field of Julia and Python;
  - program quantum computers;
  - program artificial neural networks.

List of required documents:

- Curriculum Vitae (containing **email address** to which recruitment results will be sent);
- research record with a list of publications, and list of research projects (especially those in which the candidate was the principal investigator);
- copies of five most important papers of the candidates;
- a list of talks at selected conferences and workshops;
- a list of academic prizes and awards;
- documents confirming the scientific degrees (copies of Master, PhD, habilitation diplomas if applicable)
- names and contact details (e-mail addresses) of at least one senior researcher who may act as reference for the candidate
  - the candidate is expected to contact the reference and ask them to email reference letter to **office@iitis.pl**; the letter must be sent before the deadline.
- a statement that, in the case of employment, IITiS PAN will be the primary workplace of the candidate;
- additional documents (or copies) verifying qualifications.

Job applications have to be submitted personally or by mail to Secretary of Institute of Theoretical and Applied Informatics, PAS to the address:

Instytut Informatyki Teoretycznej i Stosowanej PAN,  
ul. Bałtycka 5,  
44-100, Gliwice, Poland.

On the envelope it should be written: "**NTQC post-doc**". The deadline for submitting applications expires on **30.09.2019** (date of receipt).

An interview is expected. Selection committee reserves the right to invite for the interviews only preselected candidates. The interviews will be held in the first week of October (the confirmation will be sent to the prospect candidates shortly after the application deadline).

We offer full time employment from 1 November 2019 till 30 June 2023 (44 months), subject to periodical evaluations. Scientific and organizational support; Basic equipment and core facilities.

RENUMERATION: 10 000 PLN remuneration (pol. brutto brutto) cost for full time position; expected net salary at around 6 400 PLN (1 400 EUR).

The competition is organized under the project carried out within the Team-Net programme of the Foundation for Polish Science, and is subject to "Team-Net competition regulations".

The decision of the Selection Committee will be announced on the webpage of IITiS PAN ([www.iitis.pl](http://www.iitis.pl)) and through emails to candidates. The decision of Selection Committee is subject to appeal within 7 days from its announcement.

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 Institute of Theoretical and Applied Informatics, Polish Academy of Sciences of his/her personal data needed for the recruitment process.