

Junior Research Positions in Quantum Optical Communication Systems

Tue, 2016-10-04 17:02 - [Konrad Banaszek](#) [1] **At:** Centre of New Technologies, University of Warsaw

Deadline: 19 October, 2016

Location

Centre of New Technologies, University of Warsaw Banacha 2c
Warsaw 02-097 Poland

52° 12' 38.1996" N, 20° 59' 3.3468" E

Newly established Quantum Technologies Laboratory at the [Centre of New Technologies, University of Warsaw, Poland](#) [2] led by Professor Konrad Banaszek seeks to fill five junior research positions (Postdoc, PhD scholarships, student scholarships) supported by the project Quantum Optical Communication Systems starting on 1 December 2016.

The project will develop new concepts for optical communication systems using recent advances in quantum information science and quantum optics. The central idea is to reformulate the communication task as a decoding problem for non-orthogonal quantum states describing individual inputs rather than to transmit information in classical variables, such as intensity, phase, or quadratures, whose conventional measurements are bounded by standard quantum limits. Such a general approach opens up ways to enhance transmission rates through reduction of error probabilities and to attain superadditivity of accessible information through collective detection. A very brief introduction to this field of research has been given in [K. Banaszek, Nature Photonics 6, 351 \(2012\)](#) [3]. The project combines elements of optical physics, information theory, quantum optics, and photonics. Applicants are expected to demonstrate experience commensurate with their level of education in at least one of these areas.

Detailed information about available positions and the application procedure can be found at [this link](#) [4]. In the case of questions please contact `qtlab [at] cent [dot] uw [dot] edu [dot] pl`

- [Postdoc](#) [5]
- [PhD](#) [6]

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Links:

[1] <http://qurope.eu/users/kbanasz>

[2] <http://www.cent.uw.edu.pl/en>

[3] <http://dx.doi.org/10.1038/nphoton.2012.121>

[4] <http://www.cent.uw.edu.pl/en/node/3777>

[5] <http://qurope.eu/db/jobs/type/postdoc>

[6] <http://qurope.eu/db/jobs/type/phd>