

PhD position for QKD in Modern Telecommunications Networks



Applications are invited for a PhD position at the University of Geneva in the Quantum Technologies group led by Rob Thew and Hugo Zbinden.

The successful applicant will study telecom network designs and the co-existence of quantum and classical signals in optical networks as well as developing next-generation QKD systems to simplify the integration and optimise their performance in optical networks. One of the remaining challenges is to produce QKD network equipment that can easily be integrated with modern communications networks and enable the co-existence of classical and quantum channels, as well as a quantum network multiplexing many channels between many different transmitters and receivers.

This position is part of a MSCA doctoral network QSI (Quantum-Safe Internet). The training covers a range of practical and theoretical topics all related to secure communications in the quantum era, and the important applications therein. There is also a range of complementary training in business, entrepreneurship, and professional writing inter alia, to enhance the personal development of the fellows. You will join the QSI network of partners, which include Sorbonne University, France, University of Padova, Italy, University of Bochum, Germany, University of Amsterdam, Netherlands, Technical University Eindhoven, Netherlands, Technical University Denmark, Denmark, University of Vigo, Spain, Toshiba Research Europe Ltd, UK, University of Leeds, UK, ID Quantique SA, Switzerland, and University of Geneva, Switzerland.

The applicant is expected to hold a Masters degree in physics or related disciplines, ideally with some experience in optics, understanding of quantum information, and with excellent grades, be highly motivated, and enjoy working in an international team. The salary is determined by the MSCA programme and commensurate with living costs in Switzerland, starting at around CHF53,000 gross per year. We particularly encourage applications from women and underrepresented groups.

The quantum technologies group is part of a dynamic and highly collaborative quantum initiative at the University of Geneva, with close collaborations with the group of Mikael Afzelius working on experimental quantum memories and repeaters, as well as Nicolas Brunner's Quantum Correlations group. We also have close collaborations with the company ID Quantique for a wide variety of activities and technology transfer projects.

Inquiries and applications should be sent by email to Rob Thew (robert.thew@unige.ch) and Hugo Zbinden (hugo.Zbinden@unige.ch). Applications should include a letter of motivation, CV, and the names of three people who may be contacted to provide recommendation letters.

About the University of Geneva

Founded in 1559 by Jean Calvin, the Université de Genève (UNIGE) is dedicated to thinking, teaching, dialogue and research. It is Switzerland's second largest university with 17'000 students of more than 150 different nationalities and about 4'000 researchers (including 520 professors), who study and work in 9 different faculties (Science; Medicine; Humanities; Law; Theology; Psychology and Educational Sciences; Economics and Management; Social Sciences; Translation and Interpreting) and 15 interfaculty centres.

The university enjoys a strong international reputation, both for the quality of its research (it ranks among the top institutions among the League of European Research Universities) and the excellence of its education. This acclaim has been won in part due to its strong ties to many national and international Geneva-based organisations, such as the World Health Organisation (WHO), the International Telecommunications Union (ITU), the International Committee of the Red Cross (ICRC), and the European Organisation for Nuclear Research (CERN).

The scientific performance of UNIGE researchers is also expressed by the number of subsidies obtained on a very competitive basis from the Swiss National Science Foundation and the European Commission. The UNIGE is one of the best Swiss institutions of higher education for the allocation of these types of funding. It has also been a pioneer in quantum science and technologies in Europe and remains a world leading centre for quantum communication and quantum information science in general.

For more information see the group's web site: <http://www.unige.ch/gap/qtech>