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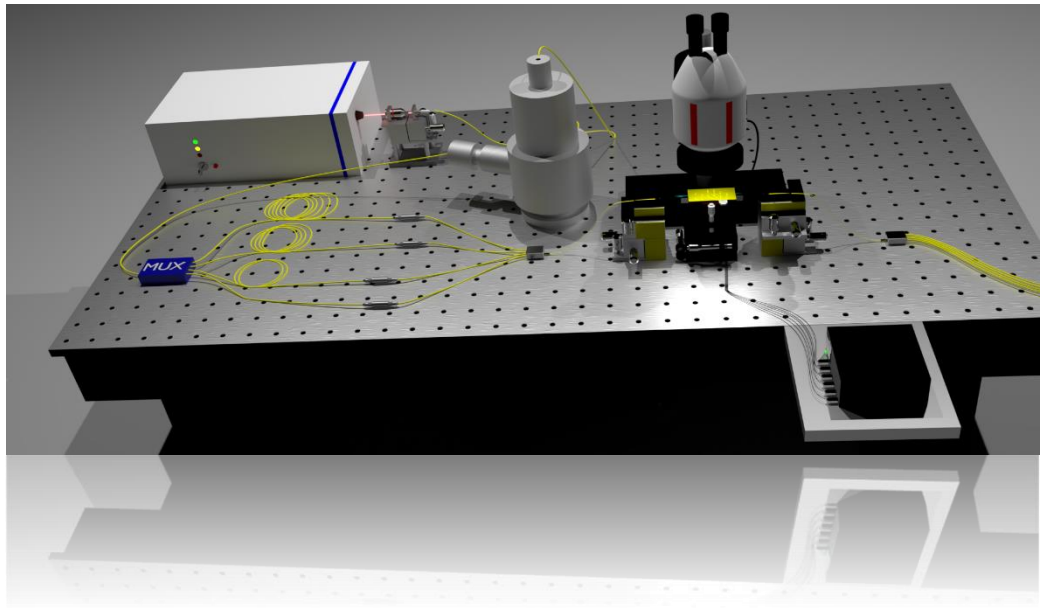
Phoqusing



www.phoqusing.eu

PHOQUSING in brief

The PHOQUSING (PHOtonic Quantum SamplING machine) project is funded by the FET- Future Emerging Technologies, a programme that supports ambitious interdisciplinary research at early stages of development with radical vision, with breakthrough technological targets.

PHOQUSING aims at realising the potential of quantum computing in a photonics computational hybrid device.

PHOQUSING 1st year results

PHOQUSING results are published in the most outstanding international peer-review journals in physics and photonics.

PHYSICAL REVIEW LETTERS

Bright Polarized Single-Photon Source Based on a Linear Dipole

S. E. Thomas, M. Billard, N. Coste, S. C. Wein, Priya, H. Ollivier, O. Krebs, L. Tazaïrt, A. Harouri, A. Lemaitre, I. Sagnes, C. Anton, L. Lanco, N. Somaschi, J. C. Loredo, and P. Senellart
Phys. Rev. Lett. **126**, 233601 – Published 11 June 2021

PHYSICAL REVIEW APPLIED

Calibration of Multiparameter Sensors via Machine Learning at the Single-Photon Level

Valeria Cimini, Emanuele Polino, Mauro Valeri, Ilaria Gianani, Nicolò Spagnolo, Giacomo Corrielli, Andrea Crespi, Roberto Osellame, Marco Barbieri, and Fabio Sciarrino
Phys. Rev. Applied **15**, 044003 – Published 1 April 2021

PHOQUSING overview

What is quantum computation?

Quantum computers exploit the incredible possibilities of quantum mechanics to significantly enhance computing power, compared with the computers currently available based on a conventional approach. In this context, it is essential to experimentally demonstrate the potential of quantum computers.

Recently, the study of computational problems that produce samples from probability distributions (quantum sampling problems or random circuit sampling) has highlighted a path forward to demonstrate quantum supremacy, corresponding to a scenario where a quantum device solves a specific problem faster than any classical system, as well as first applications.

PHOQUSING and hybrid technology

The partners of the PHOQUSING project are trying to develop useful quantum computation by using a hybrid computational model combining classical and quantum processes. The aim is to implement such a hybrid computational system based on integrated cutting-edge photonics.