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MASTER IN PHOTONICS – PHOTONICS BCN EUROPHOTONICS-POESII MASTER COURSE

PROPOSAL FOR A MASTER THESIS

Dates: April - September 2017

Laboratory: Optoelectronics

Institution: ICFO-The Institute of Photonic Sciences

City, Country: Castelldefels

Title of the master thesis: Integrated quantum devices

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Summary of the subject (maximum 1 page) :

The main aim of the proposed project is to work on an integrated version of a recently proposed quantum random number generator (QRNG). Using state-of-the-art integrated photonic or fibre optic technology, the student will design, build and characterize a new QRNG. The design and development can be extended to other quantum devices, including quantum enhanced microscopes. Applications of such devices include quantum cryptography and stochastic super-computation.

Keywords: quantum random number generation, quantum imaging, quantum cryptography