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by Alexandra Radics

REF. N. 07_18

Job Description:

Job title: 1 PhD position in PHYSICS

Name of Organisation: Dept of Photonic Systems - Lasers and Telecoms - CNRS UMR 6082 - FOTON Laboratory

Country: France

City: Lannion

Main research fields: Physics

Sub research fields: Optics

Application deadline: 01/06/2018 11:00 Europe/Brussels

Required Education:

Level: Master degree

Fields: Physics

Language skills:

Required languages: English

Level: Good

French is not mandatory

Required research experiences:

Advanced knowledge in optics and photonic devices, basic knowledge in semiconductors and solid state physics. She/he will be directly involved in nonlinear optics experiments and associated theory so that a real motivation for experimental physics and its understanding is expected.

Application details:

Topic: Nonlinear frequency conversion in Gallium phosphide micro disks on silicon

Job description:

The main objective of the project is to demonstrate an on-chip broadband optical parametric oscillator (OPO) by use of random-quasi-phase-matching in these devices.

The PhD student will take charge of the optical setup for the investigation of the micro disks realized in OHM. At the beginning of the PhD, the optical coupling to micro disks will be obtained using dimpled tapered fibers that will be fabricated by the PhD student. He/she will be responsible for the setup modification associated to our progresses on the photonic integration of the structures.

The optical experiments on micro disks will consist first of measuring the linear optical properties of GaP/Si micro disks in different wavelength ranges. Then different 2nd order processes will be investigated, starting from second harmonic generation to more complex OPO processes. The theoretical framework of these processes will also be developed by the PhD student, in particular to predict the micro disk geometry suited to a given nonlinear process. The PhD will thus participate to the design of the future samples.

Salary: 1.775€/month

Job starting date: 01/09/2018 – 01/11/2018

Duration of job: 3 years

Status: Full-time