PhD position on Non-linear optics and quantum optics in Wide bandgap material photonic crystals

A PhD student position is available at the Laboratory of Advanced Semiconductors for Photonics and Electronics (LASPE) in the field of planar photonic crystals.

Photonic crystals consist of 100 nanometer sized arrays of holes etched in a planar semiconductor waveguide. Such structures exhibit very peculiar properties for light propagation or confinement that will be exploited in non-linear optics in the near infrared.

The subject of the thesis will focus on the fabrication and characterization of such structures processed in wide bandgap materials such as GaN and AlN to achieve non-linear optical effects such as second and third harmonic generation or down conversion. These effects will then be exploited to realise non-classical light sources, such as single photon source, correlated or heralded photon.

The thesis is mainly experimental with a special emphasis on the processing and optical measurements. Prior knowledge or a strong interest for at least one of the following topics is a prerequisite: semiconductor processing (clean room), photonic crystal, experimental lab work in optics.

Starting date: As early as possible, duration 4 years.

For more information on:
EPFL: www.epfl.ch
The doctoral schools at EPFL: phd.epfl.ch
The EPFL doctoral school in physics: phd.epfl.ch/edpy
The EPFL doctoral school in photonics: phd.epfl.ch/edpo
The Institute of Physics: iphys.epfl.ch
Le Laboratory of Advanced Semiconductors for Photonics and Electronics: laspe.epfl.ch

For more information or to send application:
Prof. Romuald Houdré
Laboratory of Advanced Semiconductors for Photonics and Electronics
EPFL SB IPHYS LASPE
Station 3, EPFL, CH 1015, Lausanne, Switzerland
Tel: +41 21 693 5487, romuald.houdre@epfl.ch

Prof. Nicolas Grandjean
Laboratory of Advanced Semiconductors for Photonics and Electronics
EPFL SB IPHYS LASPE
Station 3, EPFL, CH 1015, Lausanne, Switzerland
Tel: +41 21 693 3444, fax: +41 21 693 5490, nicolas.grandjean@epfl.ch