

TWO PhD POSITIONS IN THE CONTEXT OF AN INTERDISCIPLINARY RESEARCH PROJECT: “ON-CHIP INTEGRATED UV MICRO PLASMA SOURCES FOR BIOPHOTONIC APPLICATIONS”

Ghent University, Photonics Research Group and Research Unit Plasma Technology

We are looking for two PhD candidates to develop and study on-chip micro plasma sources for biological applications.

CONTEXT:

UV light has strong potential for biological and medical investigations but still has a limited scope. One of the main bottlenecks is the lack of efficient UV light sources with optimal optical properties. To tackle this issue, the Photonic Research Group (PRG) and the Research Unit Plasma Technology (RUPT) have launched an interdisciplinary activity consisting in coupling UV photonic integrated circuits (PICs) with micro plasmas emitting at UV wavelengths. By combining their respective expertise, PRG and RUPT expect major breakthroughs in the fields of UV spectroscopy.

JOB DESCRIPTION:

One of the positions will encompass simulations, design, fabrication and optical characterization of low-loss UV photonic integrated circuits, the other one will mainly focus on engineering and studying on-chip micro-plasmas.

PROFILE:

We are looking for candidates with a MSc degree in photonics engineering, electrical engineering, engineering physics or MSc degree in physics, that already have a good background in photonics or in plasma physics or in spectroscopy, and good simulation and experimental skills. The PhD students will be able to gain experience in areas such as chip design, clean room processing, plasma physics, plasma generation, optical imaging, and UV spectroscopy.

APPLICATION:

Apply online at <http://photonics.intec.ugent.be/contact/vacancies/Application.htm>

MORE INFORMATION:

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ABOUT THE PHOTONICS RESEARCH GROUP

The Photonics Research Group (about 85 people) is associated with IMEC and is part of the Department of Information Technology of Ghent University. The group is headed by Prof. R. Baets and has been active in photonics device research for many years. The other professors in the group are P. Bienstman, W. Bogaerts, B. Kuyken, N. Le Thomas, G. Morthier, G. Roelkens and D. Van Thourhout. The main research directions are silicon nanophotonics, heterogeneous integration, optical communication, photonic (bio)sensors and photonic integrated circuits for biomedical applications in the near-infrared and mid-infrared wavelength range. More in particular, the silicon nanophotonics work focuses on the design and fabrication of SOI-based photonic devices using standard lithographic techniques compatible with CMOS-processing.

ABOUT THE RESEARCH UNIT PLASMA TECHNOLOGY

The Research Unit Plasma Technology (RUPT), founded by C. Leys some fifteen years ago, has built up an internationally recognized expertise in the field of cold atmospheric pressure plasmas (CAPPs). The successful development of different plasma generation concepts has launched RUPT into numerous interdisciplinary collaborations exploring a wide range of applications in environmental technology and materials science. Micro-photonic applications are considered a strategic extension for RUPT and for the promoter a challenging route to explore new plasma physics. The different research tools, such as X rays photoelectron spectroscopy (XPS), atomic force microscope (AFM), plasma chambers, and UV spectrometers that are necessary for the study of on-chip plasma are available at RUPT.

