ies l'institut d'électronique

# Postdoc/PhD positions in Optoelectronics & Laser physics : *Structured Opto-THz coherent light sources based on III-V semiconductor laser technology*

IES (Institute of Electronics & Systems, Photonic and waves department – University Montpellier, F) have funding for a *two-year postdoctoral fellowship or PhD fellowship* in the area of Optoelectronics and Laser physics. IES is a world leader in the field of highly coherent III-V semiconductor surface emitting laser (VCSEL) emitting 3D structured light states, and OPTO-THz devices for coherent THz sources, which find applications in low noise sensing, telecom, quantum tools, biophotonics, LIDAR….

The fellow will work to investigate the potentialities of a new class of 3D structured laser and advanced photoconductive antennas for tunable THz emission, for both civil and defense applications. To generate such laser beam at high power with robust and functional devices, we will take advantage of III-V semiconductor VCSEL technology in an external cavity configuration. The fellow will participate in the development of advanced semiconductor nanostructure based VCSEL and ultra-fast semiconductor based photoconductive antennas. He/She will carry out non-linear laser dynamics and field coherence studies in the optical and RF domain. Multiphysics modeling and study will be carried out, in order to achieve target opto-THz device performances dedicated to highly demanding applications.

The fellow will join a dynamic center of optoelectronics research with a good publication record and strong research links in other countries. The fellow will work with senior scientists and PhD students. Facilities include clean room, laser/optics/THz labs and good access to the scientific literature. The fellow will work in collaboration with other teams: C2N-CNRS, INPHYNI-CNRS, IEMN CNRS, IMEP-LAC CNRS, UCLA US, UIB Mallorca SP...

Applications are invited from applicants holding a PhD/Master in physics, optoelectronics, or a related research area. Applicants should have a strong interest in semiconductor physics and technology, laser physics and optics, THz devices, RF signal processing, a promising research record, and good practical skills. The fellowship has a (pensionable) salary funded by the National Research Agency. Please send a CV including names of two referees by e-mail to arnaud.garnache-creuillot@umontpellier.fr *:*

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