

Postdoctoral position in Optoelectronics & Laser physics : *Modeless semiconductor laser for signal processing*

IES (Institute of Electronics & Systems, Photonic and waves department – University Montpellier, F) have funding for a *postdoctoral 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 non-conventional light state, and in optical/RF noise physical study, which find diverse applications in low noise photonic sensors and THz source.

The fellow will work to investigate the potentialities of a new class of modeless laser, so-called frequency-shifted-feedback laser or Talbot lasers, 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 in an external cavity configuration. The fellow will participate in the development of advanced semiconductor nanostructure based VCSEL, new compact FSF laser cavity architecture, and will carry out laser field coherence study in the optical and RF domain (intensity/phase fluctuations metrology). Multiphysics modeling and study will be carried out (thermal, electronic, optical, mechanical), in order to achieve target laser performances dedicated to highly demanding applications. The goal of the project is to develop a new laser system to be applied to analog signal processing and chirp laser seeding, in collaboration with academic and industrial partners.

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 three senior scientists. Facilities include clean room, laser/optics labs and good access to the scientific literature. The fellow will work in collaboration with other teams: C2N-CNRS (Centre de Nanosciences et de Nanotechnologies, Paris-Saclay, F), LiPHY (Laboratoire Interdisciplinaire de Physique, Grenoble, F), THALES TRT (Palaiseau, F), CEA Laser Mega Joule (Aquitaine, F), and INNOPTICS company (Talence, Route des lasers, F).

Applications are invited from applicants holding a PhD in physics, optoelectronics, or a related research area. Applicants should have a strong interest in semiconductor physics and technology, laser physics and optics, RF signal processing and noise, a promising research record, and good practical skills. The fellowship has a (pensionable) salary of €32,000 p.a. and is funded by the National Research Agency (TAPAS ASTRID project). Please send a CV including names of two referees by e-mail to agarnache@univ-montp2.fr.

Further information can be obtained from:

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