Postdoctoral position

Ultra-stable and frequency comb tunable fiber lasers in the visible and midinfrared

Location: Laboratoire Photonique, Numérique et Nanosciences (LP2N), rue F. Mitterrand, F-33400 Talence, France (https://www.lp2n.institutoptique.fr/)
Starting date: ASAP in 2020
Duration: 24 months
Salary: gross monthly salary from 2 600 € to 3 000 € depending on experience

Context: The position covers developments carried on within 2 closely related projects. The project kW-Flexiburst funded by the European Commission H2020 and the Amberwaves project funded by the Nouvelle Aquitaine Region.

Description : The photonic systems team of LP2N (Institut d'Optique Graduate School, CNRS, Université de Bordeaux) is opening a postdoctoral research position in the field of narrow linewidth single frequency and frequency comb laser sources in the IR and visible ranges. The group develops advanced technologies dealing with ultra-stable continuous-wave lasers as well as ultra-high repetition rate frequency combs for applications among spectroscopy, cold atoms, high throughput laser processing or picosecond acoustics. The proposed project aims at developing the above-mentioned sources in the near-infrared (Yb-based) or in the shortwave infrared (Er-based) at several 10th to 100th of W in a first step. In a second step the project proposes to transfer the spectral properties of these sources towards the visible (610-640 nm) as well as the mid-infrared (2.5-4 µm) by means of non-linear processes while preserving their ultrahigh stability and spectral purity. The orange/red wavelengths generation comes from sum-frequency generation while the mid-infrared 3 µm radiation emanates from difference frequency generation. A particular attention will be paid to develop and maintain a high degree of tunability both in terms of central wavelength and comb free spectral range.

The Postdoctoral Research Associate will work primarily in fiber optics, optoelectronics and non-linear optics. He or she will be expected to participate in the experimental work in close collaboration with R&D scientists from the nearby company Azur Light System, as well as AlphaNov, the technology center for photonics in Aquitaine. LP2N is a laboratory hosted in the facilities of the Institut d'Optique d'Aquitaine focusing on several research fields ranging from nano&bio photonics, metamaterials to stable laser developments as well as advanced atom interferometry. Located in Talence (Bordeaux suburbs), we enjoy close proximity to several world-class research laboratories, laser companies and cultural opportunities.

Profile of applicant: The candidate should have a Ph.D in applied physics, optics or a related discipline. A fluent knowledge of English and/or French is a pre-requisite. The successful candidate will be highly motivated, creative, with demonstrated abilities to work in a collaborative environment. An experimental background in optoelectronics, optical fibers and laser frequency stabilisation is preferred.

Supervisor/Contact: Interested candidates are invited to apply, by email with a CV, references and a cover letter to:

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