

## Postdoc: Visible&UV lasers based on Neodymium doped fibers.

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**Duration** 18 months period (with possibility of 6 additional months)

**Job status** Post doc full time

Location : Talence

Start date : June-July 2021

Salary : around 2600€ gross per month

### Description

The LP2N (Institut d'Optique Graduate School and Université de Bordeaux) is seeking a post-doctoral research associate for the development of low-noise high-power laser source based on neodymium doped fibers (10W) around 920 nm, frequency doubling (blue light) and second harmonic generation in the deep-UV.

Visible/UV laser sources find application in several domains like spectroscopy, atomic physics and holography, biology. In particular a 461 nm laser source to perform laser cooling of strontium atoms has applications in optical clocks and atom interferometers. In addition, deep UV sources find several applications in biology. The scope of the post-doc is to develop a laser cooling source for the strontium atom, starting from 10W low frequency noise neodymium-doped fiber laser around 920 nm. Fiber lasers in a Master Oscillator Power Amplifier (MOPA) configuration are ideal candidates to produce high power in an efficient way while preserving the noise features of the master seeding laser. However, although fiber lasers are well established in the infrared domain with ytterbium (1000nm-1100nm) and erbium (1530nm-1570nm) doped fibers, neodymium-doped fibers covering the 900nm – 940nm range are still under development but very promising. The first part of the post doc will be dedicated to the investigation of the 922 nm fiber laser source. The second phase will focus on the generation of the frequency-doubled source at 461 nm and quadrupling in the deep-UV.

The Postdoctoral Research Associate will work primarily in fiber optics, optoelectronics and non-linear optics & free-space optics. He or she will be expected to participate in the experimental work in close collaboration with R&D scientists from the nearby company AzurLight System. The post doc will be carried out in the framework on an ANR grant and in collaboration with the consortium members (CIMAP lab in CAEN, ixblue& Oxxius companies in Lannion). 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 (very close to Bordeaux), we enjoy 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 is preferred.

### Supervisors/Contact

Interested candidates are invited to apply, by email with a CV, reference and a cover letters to Giorgio Santarelli.

[Giorgio.Santarelli@institutoptique.fr](mailto:Giorgio.Santarelli@institutoptique.fr)