

JOB VACANCY



ABOUT VLC PHOTONICS

VLC Photonics was born in 2011 as a technological spin-off company from the Technical University of Valencia. The company now focuses its solutions around the photonic integration technology. It is a world pioneer in the design house business model, providing all kind of services related to this technology: engineering consultancy, optical chip design, chip testing, and brokerage for manufacturing and packaging subcontracting. Check our website for more info.

PhD Position on “Multi-thread electromagnetic simulation for analogue photonic circuits”

VLC Photonics is a young and very dynamic company, now searching for a new member to be added to its growing team.

VLC Photonics invites highly motivated candidates to send their applications for a Ph.D. position in the framework of photonics-based neuromorphic information processing. This Ph.D. opportunity is part of the *Marie-Curie Innovative Training Network* project **POST-DIGITAL**, that received funding from the European Union Horizon 2020 research and innovation programme under grant agreement No. **860360**.

Marie-Curie Innovative Training Network Eligibility criteria:

Applicant must hold a master’s degree at the time when the Ph.D. contract will begin. Masters from all European countries are eligible. For international Master programs, the program curriculum must be provided. In any circumstance, the applicant must abide the **H2020 MSCA Eligibility Rules**.

The Early Stage Researcher (ESR) shall at the date of recruitment by VLC Photonics, be in the first four years (full time equivalent research experience) of his/her research career and have not been awarded a doctoral degree. The researcher must not have resided or carried out his/her main activity (studies, etc.) in Spain for more than 12 months in the 3 years immediately prior to his/her recruitment, as per **H2020 MSCA Mobility Rule**.

If the ITN eligibility criteria are not met, the application will be immediately rejected.



POSITION RELATED TASKS

Main objectives of this position:

Nonlinear optical processes have been extensively proved in different photonic platforms. However, there are no commercial applications making use of these processes in integrated photonic circuits yet. Due to the complexity of nonlinear processes, there is a strong lack of dedicated modelling and simulation tools for complex circuits.

The candidate will be trained on the concepts and tools used for integrated photonic circuit design and simulation, in analogue/digital photonic signal processing, and nonlinear photonic signal components and circuits. She/he will learn to design and characterize nonlinear photonic integrated circuits that will be experimentally demonstrated.

Expected results:

Definition of an approach that focuses on both efficient harnessing and suppression of nonlinear processes as possible in any given material platform depending on the application. Aim at *close* to real-time implementation of the proposed solutions.

REQUIRED BACKGROUND/EDUCATION

- You have a Master or equivalent degree on physics or engineering (or will be obtained before 1st September 2020) with interests in photonics, experimental physics, computational electromagnetism, and artificial intelligence.
- You are prepared to collaborate with a large network of researchers and industrial partners across Europe who may work in a different discipline, and to engage actively on interdisciplinary research.
- You can work efficiently and reliably, independently as well as in teams. Good communication skills are a must, and scientific curiosity will be highly regarded. Proficiency in English is expected, and some level of Spanish recommended but not mandatory.

SUMMARY OF REQUIRED SKILLS

- Knowledge of optics and photonics technology. Master or equivalent studies in physics or engineering. Knowledge of integrated photonics will be taken into consideration.
- Python, Matlab/Octave user knowledge, experience as software developer will be well regarded. Certain knowledge of C, C++ and Cuda is helpful.
- Analytic reporting, results analysis and problem solving.
- Proficient in English both spoken and written.
- Very pro-active and versatile character.
- Organized, capability to deal with tight deadlines.
- Availability for international travelling.
- Good communication skills. Good presentation skills, presence and correctness will be taken into consideration.

VALUABLE SKILLS

- Practical experience on an optical laboratory, measurement equipment and tools, photonic integrated circuit (PIC) characterization and test skills.
- Knowledge of PIC fabrication/packaging.
- Experience with Photonic integrated circuit (PIC) design tools: Rsoft/Synopsys, Photon Design, IPKISS/Luceda, Lumerical, VPI, etc.
- Experience in photonic integration technology and its ecosystem.
- Other languages (e.g. French, German, Dutch, Chinese, Russian). Spanish not strictly needed but recommended.



- Experience with LaTeX for technical and scientific writing.
- Know-how of Zotero, JabRef, Google Scholar, Web of Science and other online tools and applications to search and manage scientific references.
- User knowledge of Microsoft Office.
- Experience with Linux based systems.
- Good international networking skills.
- Scientific curiosity, ambition for intellectual growth and critical thinking.

VLC Photonics offers a stimulating and varied work environment in a young but growing high-tech business start-up, located at an attractive international city in the Mediterranean coast (300 sunny days a year). Cost per living in Valencia is very affordable compared to other Spanish or European large cities (check). Additionally, VLC Photonics offers continuous education and training in all technical activities and provides free or low-cost access to certified courses in many areas through the Permanent Training Center (CFP) of the UPV.

Interested candidates please send a cover letter, a curriculum vitae, a recommendation from previous research supervisors (if available) and a copy of any diploma (University Transcripts) to careers@vlcphotonics.com and marco.garcia@vlcphotonics.com for evaluation. Please, indicate in the subject **“POST-DIGITAL ESR11: Multi-thread electromagnetic simulations for analogue photonic circuits”** or your application might be misplaced.

CONDITIONS

SALARY

To be negotiated depending on candidate's adequacy, the rules of the ITN apply. Find details [here](#).

BENEFITS OF MARIE-CURIE ITN

The ITN, if entitled, can provide a mobility allowance of 600€/month and, if entitled, a family allowance of 250€/month.

OTHER BENEFITS

Access to UPV campus facilities (sports complex, library, parking, medical centre, etc.).
Close access to public transport (tram, train, rental bikes).
Flexible worktime schedule.

LOCATION

VLC Photonics offices, Valencia, Spain ([map](#)).

STARTING DATE

Between 1st June and 1st September 2020.