Université Laval

Research Assistant position in optical communications and integrated photonics

Université Laval is located in Quebec City, Canada, a UNESCO World heritage site. More than a school, Université Laval is an entire community in the heart of Quebec City, a complete university recognized for its leadership and its culture of excellence both in teaching and research. The candidate will work under the supervision of Prof. Wei Shi at the Centre for Optics, Photonics and Lasers (COPL), a multidisciplinary research centre comprising nearly 200 researchers including students, post-doctoral fellows, research professionals and more than 21 faculty members.

Current research activities of Professor Shi's group involve the design and characterization of high-speed modulators and photodetectors, generation and characterization of high-speed optical communication channels with advanced modulation formats, design of silicon photonics components, and development of integrated optical transmitters.

We are now seeking a research professional who will be responsible for the design, implementation, and test of very high-speed optoelectronic transceiver modules. Therefore, interested candidates should have:

- Experience in experimental research in the field of optical communications and integrated photonic devices.
- Experience in optical and RF packaging, design and test of optical modules, bit-error-rate measurements, RF and optical spectrum analysis, microwave characterization of semiconductor lasers and optical transceivers, thermal management of optical modules, etc.
- Five years or more of research experience after graduation with a Ph.D. degree in electrical, computer or physics engineering, computer science or a related field.
- Good communication skills in English. The laboratory is bilingual and ideally the candidate would be comfortable in both French and English.

Specific duties will include:

- Supervise the training of graduate students and postdoctoral fellows in the operation of research equipment, as well as participating in the planning of their experiments
- Collaborate with a technician for equipment maintenance and installation
- Participate in the definition of research objectives
- Contribute to the evolution of the laboratory facility over the tenure of the project
- Produce technical reports for our industrial and governmental partners
- Participate in the production of scientific papers of research results

Specific experience and required skills:

- 5+ years of experience in experimental research in optical communications systems and devices, especially with high-speed optoelectronic transceiver
- 3+ years of experience as a project leader (or equivalent) in the development of high-speed optical modules, including optical and RF packaging of optoelectronic devices
- Ability to design and test high-frequency RF packing solutions and related components and subsystems for integrated optoelectronic transceivers, including
    - Design and test RF transmission lines and chip carriers
    - Design and test high-speed RF connectors
    - Design and test optoelectronic components such as optical modulators, lasers, and detectors

    - Design and test optical packaging solutions, including free-space and fiber-optic alignment and mounting
    - Design and test thermal management solution for semiconductor lasers and integrated transceivers
- Ability to characterize optical systems, including
    - Measurement of crosstalk between optical modes
    - Measurement of optical and RF spectra
    - Alignment of free-space optical setups
    - Measurement of impulse response
    - Characterization of silicon photonics devices
- Be familiar with the use of a wide variety of optical communications test equipment including spectral analyzers, tunable lasers and optical amplifiers, etc.

This is a three-year full-time position, 7 hours per day from Monday to Friday. Salaries and benefits will be commensurate with experience, following guidelines of Université Laval.

All qualified candidates are encouraged to apply; however, priority will be given to Canadians as well as permanent residents. Please send your curriculum vitae, academic records, statement of interest and the name of three references to:

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