

Call for applications - Postdoctoral Researcher

Lyon Institute of Nanotechnology <http://inl.cnrs.fr>
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Optical Interconnect Test and Characterization

The emergence of very high performance systems on chip is necessary to achieve future required application performance in terms of resolution (audio, video and computing) and CPU power / total MIPS (real-time encoding-decoding, data encryption-decryption). The shift to distributed multi-processor architectures is the recognized route to such performance and therefore requires organized high-speed communication between processors. Aggregated on-chip data transfer rates in MPSoC, such as the IBM Cell processor, is expected to reach over 100Terabit/s in the coming decade. Conventional interconnect will be highly inefficient in this role – one of the main replacement technologies currently under development consists of using integrated optical interconnect. Besides a huge data rate, optical interconnects also allow for additional flexibility through the use of wavelength division multiplexing. This additional flexibility may be employed to build more intelligent interconnect systems, such as an optical network-on-chip system.

In the framework of a European project (FP7-ICT STREP WADIMOS) and with partners such as IMEC, CEA-LETI and STMicroelectronics, INL aims to develop novel contention-free wavelength-reconfigurable optical interconnect networks on chip integrated with standard CMOS ICs, the first prototype of which is expected in 2010. In this context we are currently looking for a (m/f) **Postdoctoral Researcher** for a **1 year** contract.

Job description

Within the WADIMOS project you will be expected to:

- develop a test strategy for the prototype optical network on chip
- contribute to the definition and realization of the experimental setup
- validate the optical network architecture and explore its performance and limitations

Profile

You have a PhD in Electronic Engineering and have worked closely in at least one of the following areas: communications systems design and test, photonics; electro-optic characterization.... Knowledge of FPGA prototype boards and labview programming is a plus. Fluency in French is also a plus but is not mandatory.

About INL

INL is a 200-strong research institute based in Lyon, France, carrying out fundamental and applied research in electronics, semiconductor materials, photonics and biotechnologies. We have achieved worldwide recognition for pioneering work in the area of integrated optical interconnect. Recent highlights include simulation-based quantitative comparisons of electrical to optical interconnects at the physical link level and the development of the world's first demonstration of a working optical link on a CMOS wafer.

Send CV and statement of purpose (in English or French) to

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