



Université
de Limoges



**Post-doc position
on RF front-end technology, Computer Aided Design and 3D integration**

Applications are invited for a post-doctoral (m/f) or research engineer position in the "Functions and Systems" thematic of Labex Sigma-Lim for a period of 21 months.

The Labex Sigma-Lim is a joint academic research laboratory with a label of "Laboratory of Excellence" since 2011. It emerges from collaboration between XLIM Institute (Electronics, Microwave, Photonics, Mathematics, Informatics and Cryptography) and SPCTS Laboratory (Science of Ceramic Processes and Surface Treatments).

Labex Sigma-Lim gathers 600 researchers (professors, PhD. students, post-docs) and specialized technicians in a dynamical and multidisciplinary work environment. The laboratory is equipped with high-tech characterization and design tools in the domain of microwave, photonics and ceramics. Among the various challenges of Labex Sigma-Lim are research and optimization of specific ceramics and bulk materials for RF, 3D integrated passive and active components for secure and smart communication systems design. The specific chair, "Integrated and Secure Systems Chair", supporting this challenge, promotes multidisciplinary research projects for which an overall system optimization is sought between the satisfaction of user needs and energy costs. Two projects are currently underway: Sensor network and RF front-end.

Context of the post-doc position:

The Post-doc work will be directly involved in the two following projects:

Project ASTRID COCORAM (<http://anr.xlim.fr/cocoram>) funded by the French national research Agency (ANR) in 2013. It targets the development of electronic systems for communication, positioning or survey equipment with goals of compactness and flexibility. The project promotes the development of co-design techniques and methodologies of passive/active components and antenna arrays.

XLIM CAD platform SIMULIM (<http://www.xlim.fr/plateformes/simulim>) is developing a dedicated system modeling environment called SCERNE. SCERNE is a system level simulator, which allows the performance evaluation of large scale systems with a high precision thanks to a seamless hierarchical modeling approach combining physics, RF circuit simulation, EM, thermal and mechanical simulation, and measurement-acquired data mining. It allows an early evaluation of complex architectures and/or innovative concepts. It is interfaced with Simulink/Matlab and it is composed of block-schemes, which can be used to graphically wire circuits or systems.

Mission:

The candidate will participate to the modeling work in project COCORAM and will use the experimental platform SCERNE for model design, experimentation and system simulation. An important objective of the work is a clear documentation of the models, the modeling and simulation methodologies carried out, for the necessity of expertise conservation and reuse. The ultimate target is the setup of an optimum design model for a transceiver that fits the COCORAM project specifications, with the accompanying simulation functionalities in the SCERNE platform.

Profile:

The candidate must have a PhD in high frequency electronics with a good knowledge of Matlab/Simulink programming. Practical and good experience with the main high frequency electronics CAD softwares (CST, HFSS, Momentum, ADS, Cadence, ...) is required. The candidate must master english (spoken, read and written).

This work will be done in collaboration with several research teams in the Labex Sigma-Lim laboratories and the "Integrated and Secure Systems" Chair holder. The successful candidate will interface with multiple people in the system integration chain: modeling platform developers, circuit and antenna designers, and system engineers. Therefore the applicant must have excellent interpersonal skills and integration capabilities, and show strong motivation to participate in a complex and multidisciplinary project.

Candidates are invited to submit a CV, a cover letter and a list of references to: elodie.charnac@xlim.fr before April 17th, 2016.

Location: Limoges, France.

Salary: around 2000 euros/month, depending on experience.

