UMR 7252

# Post-doctoral scientist opportunity at XLIM Research Institute UMR 7252 CNRS/ University of Limoges

**We are looking for a Postdoctoral Scientist in the field of functional materials integration in high-frequency devices and microfabrication technologies.**

**The appointment is for 12 months in the MIcro and Nanostructures for Telecommunications - MINT group of the XLIM's RF-ELITE department (http://xlim.fr/en/research/electronics/rf-elite/micro-and-nanostructures-telecommunications-mint) the starting date should be no later than 01/06/2018 (closing date of the offer is 01/03/2018).**

XLIM UMR 7252 CNRS/ University of Limoges has an expertise in the domain of electronics and microwaves, optics and photonics, functional materials integration; CAD, mathematics, computer sciences and image processing for the application in secured environments, biotechnology and health, energy control. XLIM incorporates more than 460 people: professors, CNRS researchers, engineers, technicians, post-doctoral researchers, PhD students and administrative staff and is structured around 6 research departments (www.xlim.fr). The research efforts rely on the technological (clean-room) and high-frequency instrumentation **PLATINOM platform**. The platform offers an access to technological equipment for the fabrication of microwave or optical structures (clean room and optical fiber tower), as well as to a large park of instruments for performing electronic, photonic, electromagnetic, and radiation measurements.

**Job description:**

We are looking for a competitive post-doctoral candidate who will conduct research in the field of **phase transition and phase change materials (PTM/PCMs like $VO_2$, GeTE, GST…) integration for high frequency devices (switches, filters, phase shifters, antennas etc).** The research will be conducted within the frame of a project funded by the French ANR (French National Research Agency) involving partners with multi-disciplinary competencies: material science, microfabrication technologies, RF/microwave devices fabrication and measurement, antennas design, simulation and measurements. The successful candidate will be in charge of characterizing the functional materials (permittivity, dielectric losses in the RF-microwave domains using the existing methods developed at XLIM), design, simulate and fabricate the high-frequency devices using the clean-room technological capabilities at XLIM and characterize (in the 1-67 GHz high-frequency domain) the obtained components (**planar switches based on the resistivity variation of the materials upon the application of external stimuli such temperature, electric field or optical pumping**). The candidate will also participate to the integration of these devices into more complex systems (filters, phase shifters, antennas).

**Desired skills and experience**

We expect candidates with a **strong background in RF-microwave device design and characterization/ measurements** (use of either ADS, HFSS, CST, Comsol, **knowledge of high-frequency measurements** using VNA-vector analyzers etc.) and a first experience with the microfabrication technologies associated with the clean-room environment. Previous knowledge in materials integration in high-frequency devices or on functional materials (PTM/PCM/ ferroelectrics etc.…) are highly appreciated. Communication, organization skills and the readiness to work within an interdisciplinary team are highly desired.

**To apply and obtain more information, please send a motivation letter, a detailed CV, two potential academic references and a list of publications to:**

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