

Postdoctoral position available at Institut des Nanotechnologies de Lyon (INL),  
INSA de Lyon, Villeurbanne , France

**Title : Doping and electrical analysis using Scanning probe microscopies on III-V ( GaAs and GaN) nanowires**

**Duration** : 12 months

**Context:**

INL (Institut des Nanotechnologies de Lyon) is one of the leading academic research institutions in nanotechnologies in France. One of its major themes in the field of nanotechnology is to develop nanoscale doping measurement metrology methods that can be applied to semiconductor nanowires. For this purpose measurements using atomic force microscopy with conductive tips have been put in place to use electrical measurement modes thanks to the spatial resolution of the tip. Doping measurements using the SCM (scanning capacitance microscopy) or SSRM (scanning spreading resistance microscopy) modes are then possible. These measurements require specific preparation of nanowire samples as well as well-adapted calibration procedures. Within the framework of a regional project, we wish to use such an approach for the development of arsenide (GaAs) or nitride (GaN) -based III-V nanowires for absorption and / or emission controlled.

This work is done in collaboration with l'Institut Pascal from Aubiere – Clermont-Ferrand university and with INAC from the CEA-LETI -MINATEC in Grenoble. Both laboratories are involved in the nanowire fabrication.

**Job description:**

The task of post-doc is to set up a method for preparing III-V nanowire samples allowing the measurement of doping either in cross-section or along the nanowire and also to set up a calibration procedure. He (she) will be in charge of working sessions on an AFM microscope (Bruker type) allowing the main electrical modes like SCM, SSRM and conductive AFM. During his( her) activity, the post-doc contributed to the analysis of the selected samples for the project and to the writing of the results reports as well as to their presentation during the working meetings with the partners. Strong working interaction is expected with the project partners.

The applicants should hold a PhD in SPM measurements field on semiconductors materials and nanostructures and feel strongly appealed towards multidisciplinary research. Experience in semiconductor physics and nanotechnologies process and chemical process as dip coating or spin coating will be well appreciated.

Salary with charges is depending of the expertise of the applicant ( ≈2850 €/month)

**Contact** : Professeur Georges Bremond; [georges.bremond@insa-lyon.fr](mailto:georges.bremond@insa-lyon.fr)

Georges BREMOND

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