

## **Post-doctoral position: Development and integration of an electrochemical solution to an existing scanning probe microscope**

### **Context:**

HORIBA France is a scientific instrumentation and optical spectroscopy component manufacturer. HORIBA France is recognized as the global leader in micro and nano Raman spectroscopy, with instruments having applications in both academic research and industrial markets.

HORIBA France proposes a scanning probe microscopy (SPM) platform coupled to a micro-Raman spectrometer to perform tip-enhanced Raman spectroscopy (TERS) measurements that give a chemical signature of a sample with a resolution far better than the one obtained in micro-Raman measurements. To expand the portfolio of the existing features, a new electrochemical option is being developed with the expertise of academic collaborations and within the frame of the European project "Harvestore". An 18-month post-doc position is opened to participate to this development.

### **Mission**

The mission consists in developing and integrating the electrochemical TERS option with the final objective to propose a commercial solution (taking into account the existing instrument and the user experience) and to generate some results for several applications. The chosen candidate will notably participate to experimental campaigns at the premises of one of the partners of the project in Barcelona. Redaction of internal and project related reports or presentations are also expected from the candidate as well as contributions to the publications generated. During the post-doc, the candidate will interact with a Horiba expert on TERS.

### **Main tasks**

- Test and make modifications to the design of a new electrochemical cell used in various TERS environment (either STM-TERS or AFM-TERS).
- Interact with partners having an expertise in design and/or the applications of such options and such integration.
- Make measurements with this option to characterize its field of possibilities (i.e. validate and define the performances / limitations)
- Train future users on how to get relevant measurements for their needs
- Assist in obtaining results at a lab member of the European project consortium remotely and on site in Barcelona.
- Write reports related to the project

### **Required profile**

- Ph.D or Post-doctoral experience
- Experience/Knowledge in electrochemistry
- Experience / knowledge in scanning probe microscopy
- Preferably, knowledge in optical instrumentation
- High interest in developing methods
- Good communication skills
- Autonomy, adaptability and able to take initiatives
- Writing skills
- English professional proficiency, spanish or catalan if possible (preferred, not a requirement)

