



## INTERNSHIP PROGRAM FOR INTERNATIONAL STUDENTS

### INTERNSHIP SUBJECT FORM

Name of the Host Laboratory	LPICM
Website of the Host Laboratory	<a href="https://lpicm.cnrs.fr/">https://lpicm.cnrs.fr/</a>
Research Group	Nano-Raman team
Internship Supervisor	R. Ossikovski and A. Güell
Internship Subject	Development of near-field Raman spectroscopy in liquid environment and applications
Student's level	<input checked="" type="checkbox"/> Advanced Undergraduate Students (3 <sup>rd</sup> or 4 <sup>th</sup> year) <input checked="" type="checkbox"/> Master's students (1 <sup>st</sup> or 2 <sup>nd</sup> year) <input type="checkbox"/> PhD students
Proposed Duration	<input checked="" type="checkbox"/> 3 months <input type="checkbox"/> 4 months <input type="checkbox"/> 5 months <input type="checkbox"/> 6 months
Prerequisites	Basics of solid state physics and general optics; hands on working experience
Internship description (max. 15 lines)	<p>The extremely rapid development of nanotechnologies we are witnessing nowadays is not only focused on the elaboration and on the applications of nanoobjects and nanostructures, but also requires the availability of advances optical tools to characterize these structures at the nanometer scale. Near-field Raman spectroscopy (also, TERS or nano-Raman) is such a nanocharacterization technique: by combining Raman spectroscopy with scanning probe microscopy (SPM), it makes possible the accurate chemical and structural analysis of the sample with a nanometer spatial resolution. The intern will be involved with the current activities of the nano-Raman team which include, most generally, both instrumentation and characterization aspects. The instrumentation work comprises the extension of the current setup to operation in liquid environment, including the production and testing of near-field probes. On the characterization side, the performance of the system will be tested by measuring 2D materials like graphene and self-assembled monolayers (SAMs). Aptitude and motivation for experimental work with a strong applied physics bias are expected from the applicant.</p>

The boxes marked with cross implies eligible