

Spécialité de Master « Optique, Matière, Plasmas »

Stage de recherche (4 mois minimum, à partir de début mars)

Proposition de stage (**ne pas dépasser 1 page**)

Date de la proposition :

Responsable du stage / internship supervisor:	
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Nom du Laboratoire / laboratory name:	
Code d'identification : LNIO	Organisme : UTT
Site Internet / web site: www.lnio.fr	
Adresse / address: 12 rue Marie Curie, 10000 Troyes	
Lieu du stage / internship place: Troyes	

Titre du stage / internship title:
Résumé / summary
1. Administrative information
The PhD position will be shared between the Laboratory of Nanotechnology and Instrumentation (LNIO) at the University of Technology of Troyes (UTT) and the Laboratory of Research in Nanoscience (LRN) at the University of Reims-Champagne-Ardenne (URCA). You can get information from Thomas Maurer (thomas.maurer@utt.fr) and Michael Molinari (michael.molinari@univ-reims.fr).
2. Scientific description
The project aims to break through frontiers in nanoscience between mechanics and plasmonics by developing the emerging research field of plasmomechanics. The main idea consists in investigating plasmonic coupling phenomena in nanostructured materials subjected to mechanical stress. Nanogauges in the form of polymer nanocomposite architectures (plasmonic nanoparticles self-organized into polymer matrices and sub-wavelength plasmonic surface gratings) will be produced using integrative synthesis and nano-texturization routes. The optical behavior of these gauges at nanoscale level under tensile load in-situ in optical, atomic force and electron microscopes will be analyzed and simulated.
Therefore, the young researcher will have the opportunity to investigate fundamental questions about nano-optics (plasmonic coupling) and mechanics (development of optical tools to characterize mechanical properties at sub-micrometer scales, nanoparticle deformation,...) but he will also meet the challenge of the development of a new optical strain sensor generation. This will give him the possibility to develop both experimental and theoretical skills in the fields of nano-optics and mechanics. The young researcher will benefit from the facilities provided by the Nanomat' technological plat-form.
In case of interest for this position, a 6-month research internship is possible during the spring.
Toutes les rubriques ci-dessous doivent obligatoirement être remplies

Ce stage pourra-t-il se prolonger en thèse ? Possibility of a PhD ? : oui éventuellement			
Si oui, financement de thèse envisagé/ financial support for the PhD: financement région Champagne-Ardenne			
Lasers, Optique, Matière	X	Lumière, Matière, Interactions	X
Plasmas : de l'espace au laboratoire			

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