

Spécialité de Master « Optique, Matière, Plasmas »

Stage de recherche (4 mois minimum, à partir de début mars 2011)

Proposition de stage pour l'année 2010-2011 (ne pas dépasser 1 page)

Date de la proposition :

Responsable du stage / internship supervisor:			
Nom / name:	WANG and DINH	Prénom/ first name :	Qijie and Xuan Quyen
Tél :		Fax :	
Courriel / mail:	qjwang@ntu.edu.sg		
Nom du Laboratoire / laboratory name: CINTRA			
Code d'identification :	UMI 3288	Organisme :	CNRS/Nayang Technological University /Thalès
Site Internet / web site:	http://cintra.ntu.edu.sg		
Lieu du stage / internship place:	Singapour		

Titre du stage / internship title: Design and Fabrication of Plasmonic and Metamaterial Devices
Résumé / summary Confining and controlling electromagnetic waves at dimensions much smaller than the wavelength are of great importance for miniaturization of optical-integrated devices and improvement of the spatial resolution in optical imaging. A variety of artificially fabricated sub-diffraction-limit plasmonic [1] and metamaterials [2] devices have been demonstrated in the optical region recently. The electromagnetic response properties of these devices can be designed at will, thus bringing various unprecedented functionalities into reality. In this project, the student is going to focus on the design and modeling of those metamaterials and plasmonic devices at various wavelength regions, which have great potential for different applications, such as super-resolution imaging, biomedical imaging, nanolithography, integrated optics, etc. The candidates are expected to have knowledge in optics and photonics, electromagnetic waves, and strong interests in modeling with commercial software. If time allows, the candidate will also learn how to fabricate those devices with nano-fabrication techniques, such as e-beam lithography, with the state-of-the-art cleanroom fabrication facilities in NTU. After completing the project, the candidate will have extensive experience from theory to fabrication to final characterization of those advanced photonic devices, and learn the fundamental physics behind them. <ol style="list-style-type: none">1. E. Ozbay, Science, 311, 189-193 (2006).2. D. R. Smith, et al. Science, 305, 788 (2004). Minimum duration of internship: 5 months Candidates are kindly advised to send by email to dbaillargeat@ntu.edu.sg , with mail subject "CINTRA_2011_Internship" followed by the candidate's full name, the following documents (in English) - CV (including education & professional history) - Letter of Motivation including your possible contribution to the project
Toutes les rubriques ci-dessous doivent obligatoirement être remplies

Ce stage pourra-t-il se prolonger en thèse ? Possibility of a PhD ? : oui			
Si oui, financement de thèse envisagé/ financial support for the PhD:			
Lasers et matière	X	Lumière, Matière : Mesures Extrêmes	X
Optique de la science à la technologie	X	Physique des plasmas	

Fiche à transmettre (fichier pdf **obligatoirement**) sur le site <http://stages.master-omp.fr>