

# 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 :

<b>Responsable du stage / internship supervisor:</b>			
Nom / name:	DINH	Prénom/ first name :	Xuan Quyen
Tél :		Fax :	
Courriel / mail:	xddinh@ntu.edu.sg		
<b>Nom du Laboratoire / laboratory name:</b> CINTRA			
Code d'identification :	UMI 3288	Organisme :	CNRS/Nayang Technological University /Thalès
Site Internet / web site:	<a href="http://cintra.ntu.edu.sg">http://cintra.ntu.edu.sg</a>		
Lieu du stage / internship place:	Singapour		

<b>Titre du stage / internship title: Micro-fiber Bragg gratings for sensing applications</b>
Résumé / summary A Fiber Bragg Grating (FBG) is a periodic perturbation of the refractive index along the fiber length which is formed by exposure of the core to an intense optical interference pattern. When ultraviolet light radiates an optical fiber, the refractive index of the fiber is changed permanently; the effect is termed photosensitivity. FBG can be formed by illuminating the fiber through the side of the cladding with two intersecting beams of UV light; the period of the interference maxima and the index change was set by the angle between the beams and the UV wavelength rather than by the visible radiation which was launched into the fiber core. One of the most effective methods for inscribing Bragg gratings in photosensitive fiber is the phase masks technique. FBG has a broad and important role in optical communications and sensor systems. In this work, the student will use a laser with wavelength 248 nm as light source, and apply the phase mask technique for writing fiber gratings. Then the student will conduct to some measurements of sensing applications by observing FBG fiber average refractive index and optical period, for infiber strain and ambient temperature sensing. A micro-FBG interferometer (a Fabry-Perot cavity formed by a Bragg grating and the cleaved fiber endface) is also expected to be made and characterized. This work is partly related to Thales Singapore's interest.  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 <a href="mailto:dbaillargeat@ntu.edu.sg">dbaillargeat@ntu.edu.sg</a> , 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
<b>Toutes les rubriques ci-dessous doivent obligatoirement être remplies</b>

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

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