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*: Rusli Prénom/ *first name* :

Tél : Fax :

Courriel / *mail*: erusli@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*: **Fabrication and characterization of SiNWs and SiNWs hybrid solar cells**

Résumé / *summary*

One dimensional semiconductor materials, such as nanotubes, nanowires and nanorods have stimulated much interest in recent years as they offer the opportunity to investigate the effects of dimensionality and size on a material's physical properties as well as potential applications in nanotechnologies. The decrease in the diameters induces many excellent features compared to their bulk materials.

In this work, we aim to study thin films that consist of Si nanowires (SiNWs) embedded in an organic matrix. Organic materials by nature are not a very good medium for carrier transport. On the other hand semiconductor nanostructures combined with organic materials provide not only a good medium for fast electron transport due to the use of semiconductor, they can also be fabricated over a very large area at low cost and low temperature using the spin coating or printing technique. They can be potentially used in many applications such as solar cells, high mobility thin film transistors, smart materials sensing of the environment etc.

The focus of this work will be on the fabrication and characterization of SiNWs. If time permits, the student will continue to fabricate and characterize SiNW hybrid solar cells.

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	

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