NSERC CREATE **TOP-SET** Un programme *FONCER* du CRSNG

Séminaire

Le mardi 16 avril 2019, 14h45
Des rafraîchissements seront servis dès 14h15
Complexe de recherche avancée, pièce 233
Université d'Ottawa, 25, rue Templeton
Le séminaire se déroulera en anglais.

Seminar

Tuesday, April 16, 2019, 2:45 p.m.
Refreshments to be served starting at 2:15 p.m.
Advanced Research Complex, room 233
University of Ottawa, 25 Templeton Street

Growth and characterization of nanowires by MOCVD: Implications for photovoltaics

Simon Watkins, Simon Fraser University

Abstract: Metalorganic chemical vapour deposition (MOCVD) is a well-known technique for growth of compound semiconductors for solar energy devices. This talk will review the basic principles behind MOCVD and in particular, its application to inorganic nanowire structures. I will focus on the primary growth mechanisms by which nanowires are formed in the MOCVD environment, as well as some of our contributions to the electrical and structural characterization of prototype devices structures. The development of useful photovoltaic devices based on semiconducting nanowires (NW) is contingent on (1) the development of methods to control the structural properties, and (2) the ability to accurately measure majority and minority carrier electrical properties of individual NWs. I will highlight some novel methods for fabricating prototype NW devices without lithographic processing, as well as the characterization of axial and core-shell structures using electron beam induced current and other two terminal measurements inside a scanning electron microscope.

Bio: Simon Watkins received his PhD from Simon Fraser University in 1986. From 1986-1992 he was a researcher at American Cynamid in Stamford, Connecticut, where he worked with a team of chemists and physicists to develop novel liquid sources for MOCVD, which are now widely used throughout the world. From 1992-present, he has served as a professor in the Department of Physics at Simon Fraser University, working on a variety of topics related to crystal growth of semiconductor thin films, nanowires and nanodevices. In 2001 he was jointly awarded the BC Science Council Frontiers in Research award for his role in the development of heterojunction bipolar transistors with world record cutoff frequencies. In 2008 he was elected a Fellow of the American Physical Society for his contributions to the growth and applications of III-V semiconductors. He has published over 130 articles in high impact physics and nanotechnology journals.

TOP-SET est un programme de formation FONCER du CRSNG en puissance optoélectronique ayant pour but de façonner une cohorte de personnel hautement qualifié détenant des connaissances approfondies en systèmes optoélectroniques pour joindre les rangs d'équipes de recherche et développement.

Pour de plus amples renseignements sur TOP-SET, veuillez consulter create-topset.eecs.uottawa.ca/fr.

NSERC CREATE Training in Optoelectronics for Power: from Science and Engineering to Technology (**TOP-SET**) is a training program that aims to form a cohort of highly qualified personnel with comprehensive understanding of optoelectronic systems, capable of joining advanced R&D teams.

For further details regarding TOP-SET, go to create-topset.eecs.uottawa.ca.

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