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

## Séminaire

Le lundi 17 janvier 2022, 13h
MS Teams
*Le séminaire se déroulera en anglais.*

## Seminar

Monday, January 17, 2022, 1 p.m.
MS Teams

# Design, fabrication and characterization of III-V/Ge multijunction solar cells with through cell via contacts

**Mathieu de Lafontaine, Université d'Ottawa**

**Abstract:** Concentrator photovoltaics consist in converting the solar irradiance, concentrated with lenses or mirrors, into electricity with highly efficient solar cells. Over the past years, there have been remarkable improvements in the conversion efficiency of solar cells. However, resistive losses due to the high current density and excessive shading caused by the metallization on the front side prevent reaching higher efficiencies and limit the power yield per wafer. Through cell via contacts could provide a solution to these two limitations. This new contact architecture consists in transferring the front side contact to the backside of the device. It uses thousands of isolated and metallized micrometric vias to forward the carriers generated on the front side to the backside, through the solar cell. This talk will discuss the main microfabrication processes and challenges to fabricate this new architecture as well as the associated device characterization.

**Bio:** Mathieu de Lafontaine is a new postdoctoral fellow at SUNLAB at the University of Ottawa. He recently obtained his PhD degree in a joint program between the Université de Sherbrooke (Canada) and the Université Grenoble Alpes (France) working on III-V semiconductor plasma etching, multijunction solar cell fabrication and characterization. He is the recipient of many awards and scholarships, including the Best Student Presentation Award at the 17th International Conference on Concentrator Photovoltaic Systems and a prestigious Fonds de recherche du Québec Nature et Technologie Postdoctoral Research Scholarship. He has published 12 peer-reviewed journal and conference papers.

---

**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.

NSERC CRSNG

Le financement pour TOP-SET est fourni par le Conseil de recherches en sciences naturelles et génie.
TOP-SET is funded by the Natural Sciences and Engineering Research Council of Canada.

uOttawa

Le financement pour ce séminaire est fourni par l'Université d'Ottawa.
This seminar is funded by the University of Ottawa.