

Séminaire

Le mardi 29 janvier 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.

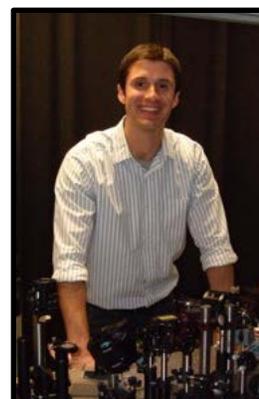
Seminar

Tuesday, January 29, 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

Concentrating sunlight without tracking the Sun

Chris Giebink, Pennsylvania State University

Abstract: Sunlight is a diffuse energy resource and thus all methods of solar energy conversion and use by society share one feature in common – concentration. Optical concentration offers a route to lower the cost of high efficiency photovoltaics, but this typically requires bulky mechanical tracking that is incompatible with rooftop installation and geometric optics that cannot harvest the diffuse solar component. This talk will focus on recent developments in quasi-static microtracking and luminescent solar concentration that address these respective challenges. Specifically, photonic control of luminescent étendue is demonstrated to yield >3x secondary geometric gain in luminescent concentration and a multi-junction microcell concentrating photovoltaic system operating at ~740x geometric gain outperforms a commercial silicon solar cell by generating 54% more energy per unit area over the course of a sunny day at fixed latitude tilt.



Bio: Chris Giebink is an Associate Professor of Electrical Engineering at Pennsylvania State University. He joined the department in the fall of 2011 following two years as the George Wells Beadle postdoctoral fellow at Argonne National Laboratory, where he focused on solar energy-related research. He received his PhD in electrical engineering from Princeton University working on organic light emitting diodes and lasers, and holds undergraduate degrees in both Physics and Engineering Science from Trinity University (Texas). He holds 8 patents and is a recipient of the Defense Advanced Research Projects Agency Young Faculty Award, the Air Force Office of Scientific Research Young Investigator Program and the National Science Foundation CAREER awards.

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.

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



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