

Séminaire

Le mardi 8 décembre 2020, 14h45

Le séminaire se déroulera en anglais.

Seminar

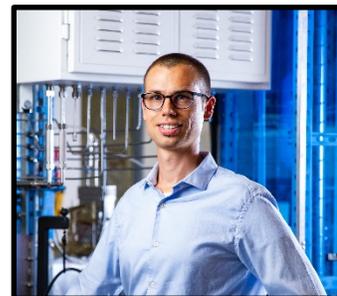
Tuesday, December 8, 2020, 2:45 p.m.

Perovskite/silicon tandem solar cells

Zachary Holman, Arizona State University

Abstract: Tandem photovoltaic modules with silicon bottom cells and perovskite top cells offer a promising route to exceed the single-junction photovoltaic efficiency limit, which may further lower the levelized cost of solar electricity. However, it is unclear whether continued improvements in efficiency will render tandems cost-competitive with their constituent sub-cells, and with silicon technology in particular, and it is even less clear whether perovskite cells will demonstrate the reliability and scalability needed for a market that manufactures 300 million modules per year, each with a 25–30 year lifetime. In this talk, I will explore the technoeconomics of perovskite/silicon tandems with a versatile analytical model, the efficiency of such tandems made with several different cell architectures, and the manufacturability of the associated processes.

Bio: Zachary Holman is an Associate Professor in the School of Electrical, Computer, and Energy Engineering at Arizona State University, as well as the Director of Faculty Entrepreneurship within the Fulton Schools of Engineering. He received his PhD in Mechanical Engineering from the University of Minnesota for his work on plasma-synthesized silicon and germanium nanocrystals, after which he spent two years as a postdoctoral researcher understanding losses in silicon heterojunction solar cells at École Polytechnique Fédérale de Lausanne in Switzerland. His research group at ASU focuses on new electronic materials and deposition processes, often incorporating these into high-efficiency silicon and silicon-based tandem solar cells. He has been named a Moore Inventor Fellow, Trustees of ASU Professor, Fulton Entrepreneurial Professor, and Joseph C. Palais Distinguished Faculty Scholar, and he is the co-founder of an advanced materials start-up company, Swift Coat, and a solar module technology company, Sunflex Solar.



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.



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.



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