WEBINAR AGENDA

Title: Towards upscaling stable single junction and tandem perovskite modules.

Project task: 2.4 - Workshops and Webinars

Date: Wed**,** December 13th 2023, 13:00 – 14:00 (CET)

Institution Organizer/Host: Interuniversitair Micro-Electronica Centrum (imec)

Location: Online event – ZOOM – Register beforehand via the here to get access to the webinar and receive the connection details.

Agenda:

13:00	**13:05**	**0:05**	**Welcome** *Welcome by Dr. Maria Hadjipanayi (UCY)*
13:05	**13:45**	**0:40**	**Towards Upscaling Stable Single Junction and Tandem Perovskite Modules** *Dr. Aranzazu Aguirre (imec), Dr. Anurag Krishna (imec)*
13:45	**13:55**	**0:10**	**Questions/Open Discussion**
13:55	**14:00**	**0:05**	**Summary and Closing Remarks**

Abstract:

Solar energy, an abundant form of renewables, stands out as a promising solution to mitigate the global carbon footprint and meet the escalating energy demands. Following a decade of intensive exploration, metal halide perovskites have surfaced as extraordinary materials for enhancing the power conversion efficiency (PCE) of perovskite solar cells (PSCs). However, the majority of high-efficiency achievements have been confined to small-scale cells produced within laboratory settings. To pave the way for the commercial viability of perovskite photovoltaics, it is imperative to focus on developing high-efficiency perovskite solar cells that can be seamlessly integrated into industrial-scale processes. Our upcoming webinar aims to address this challenge by presenting innovative device architectures compatible with industry-standard techniques like sputtering, evaporation, and slot die coating, covering areas of up to approximately 800cm². The tandem approach represents an innovative strategy involving the integration of perovskite solar cells (PSCs) with other solar cell technologies. This collaborative fusion of materials aims to capitalize on their unique strengths, fostering a synergy that surpasses the limitations of individual cells and significantly amplifies overall energy conversion efficiency. During our webinar, we will delve into the immense potential of perovskite tandem structures when deployed

Funded by the European Union

TESTARE is funded by the European Union (Grant agreement number 101079488).

on larger scales. Stepping beyond the confines of laboratory experimentation, the scaling up of perovskite tandems presents a new set of challenges and opportunities. It becomes crucial to address scalability issues and fine-tune manufacturing processes to unlock the complete potential of perovskite tandem solar cells for practical, large-scale applications.

Short bios:

Dr. Aranzazu Aguirre received her PhD in Experimental Physics from the University of Antwerp in 2008. After her doctorate, she joined the Molecular Materials and Nanosystems at the Chemistry department of the Eindhoven University of Technology, followed by a second post doctoral research period at Imdea Nanoscience Institute, both in the field of characterization of organic solar cells by spectroscopic techniques. After these, she joined Abengoa Solar NT as R&D Manager in the photovoltaics division. She is currently mainly working on upscaling of perovskite based photovoltaic modules and developing strategies to ensure their reliability and stability. She explores laser interconnection and encapsulation approaches for modules in the framework of several projects involving both academic and industrial partners.

Dr. Anurag Krishna is an R&D Project Leader of Thin-Film Photovoltaics Technology team at imomec, imec, where his research activities focus on developing perovskite module technology. Previously, he has been a Marie Skłodowska-Curie fellow in the laboratory of Prof. Anders Hagfeldt and Prof. Michael Graetzel at Ecole Polytechnique Fédérale de Lausanne, Switzerland. He obtained a Ph.D. from Nanyang Technological University, Singapore. The noble mission of his research is to facilitate sustainable and affordable low-carbon and green technology solutions for the world. On the fundamental side, his research interests focus on developing hybrid materials suitable for photovoltaic, optoelectronic, and nanoelectronic devices.

Project Background:

TESTARE is a Horizon Europe project that aims to stimulate excellence at the University of Cyprus (UCY) in the topic of new-generation PV technologies from the perspective of long-term stability and field reliability testing. In particular, the project aims to improve the R&I capabilities of the DegradationLab, a new research strategic unit of UCY which focuses on the study of degradation of new and emerging PV devices. To this end, UCY links with internationally leading research institutions, namely Interuniversity Microelectronics Centre (imec), Fraunhofer Institute for Solar Energy Systems (Fraunhofer), and Ben-Gurion University of the Negev (BGU). The project targets to improve the R&I output of DegradationLab in the defined domain, boost its success rate in funding bids, enhance its reputation/visibility, develop long-term ties with the advanced partners, strengthen industry and MENA links, contribute to enhancing research management and administration capabilities at UCY towards making more sustainable its research ecosystem.

Funded by the European Union

TESTARE is funded by the European Union (Grant agreement number 101079488).