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Institute of Physics SAS

Invites you to a talk of

Dr. Fan FU

Laboratory for Thin Films and Photovoltaics
EMPA, Duebendorf, Switzerland
https://www.empa.ch/web/s207/perovskite-sc

Upscaling Flexible All-perovskite Tandem Mini-modules

Monday 15th June 2026, 13:00

QUTE auditorium

In addition to high-efficiency potential, perovskite-perovskite (all-perovskite) thin-film tandems can be fabricated on flexible and lightweight substrates with very high power-to-weight ratios, thus opening numerous applications where flexibility and lightweight are important considerations. Leveraging low-temperature coating methods and high-throughput roll-to-roll manufacturing, perovskite-based thin-film tandems promise very low manufacturing costs and CO_2 footprint. Working towards our vision of roll-to-roll (R2R) manufacturing of flexible all-perovskite tandem solar modules, we present our latest progress on the development of highly efficient flexible all-perovskite tandem devices (Fig. 1). With interface and additive engineering, we demonstrate 25.4 % power conversion efficiency in a flexible 2-terminal all-perovskite tandem solar cell. Furthermore, we will present our progress on developing flexible all-perovskite tandem mini-modules and discuss the challenges of homogenous coating of perovskite on large areas using both scalable solution processes and vapor processes. Finally, we will discuss the potential and future challenges of developing highly efficient, lightweight, and stable all-perovskite tandem photovoltaics.

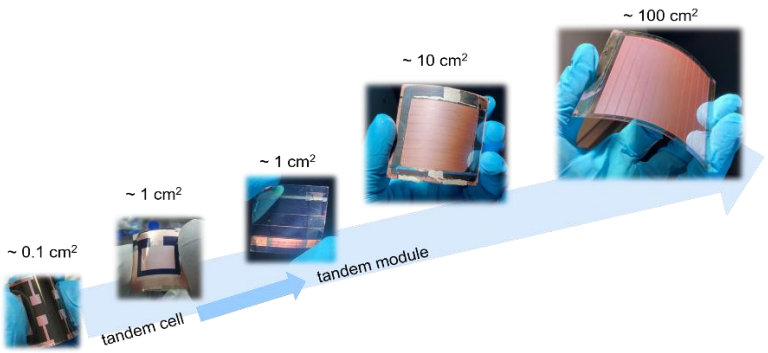

Fig.1: Upscaling of flexible all-perovskite tandems from small area cells (0.1 cm^2) to mini-modules (100 cm^2)