

Towards semitransparent OPV deployment

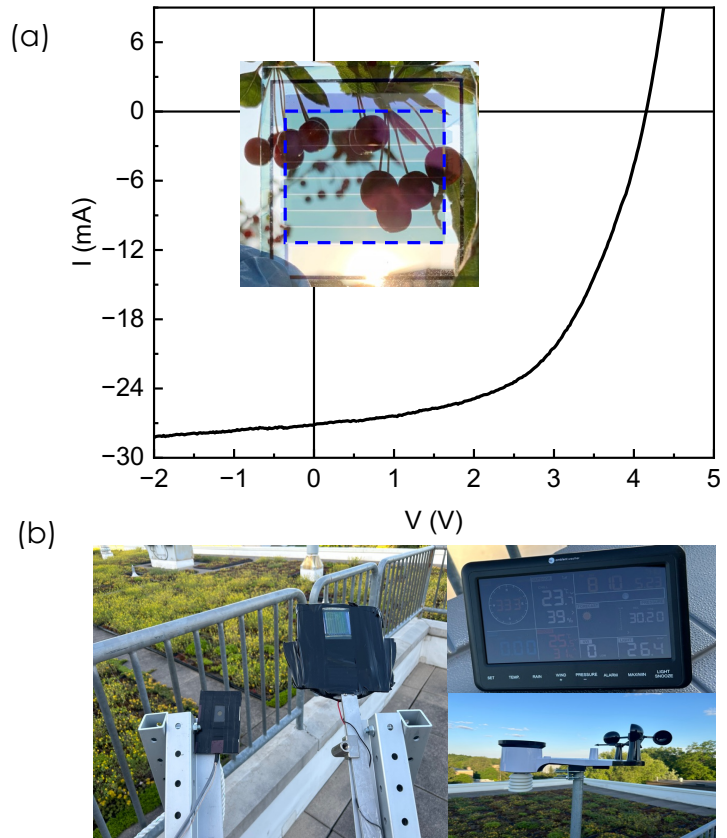


Figure: (a) Picture (inset) and I-V curve of ST-OPV module. (b) Pictures of an ST-OPV module on test with Si-reference PV and environmental monitoring instruments.

Objective

➤ To study the outdoor stability of semitransparent organic photovoltaics in readiness for deployment

Impact

Semitransparent organic photovoltaic (ST-OPV) has been shown to be efficient and stable in laboratory settings putting it on the cusp commercialization. Power generating windows and agri-photovoltaics are two immediate applications of ST-OPV. To achieve these, the device must be stable in the outdoors. This project studies the stability of ST-OPV modules in the outdoors and make improvements on them to ensure their stability under fluctuating environmental conditions such as solar illumination, temperature, rainfall, and relative humidity.

Facilities and Methods Used

- Vacuum thermal evaporator
- E-beam deposition chamber
- Spin coater
- Magnetron sputterer
- Customized outdoor reliability test station

Relevant Papers

- H. K. M. Sheriff, et Al., *IEEE 52nd PVSC*, DOI: 10.1109/PVSC57443.2024.10749038

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