

Radiation hardness in organic photovoltaics

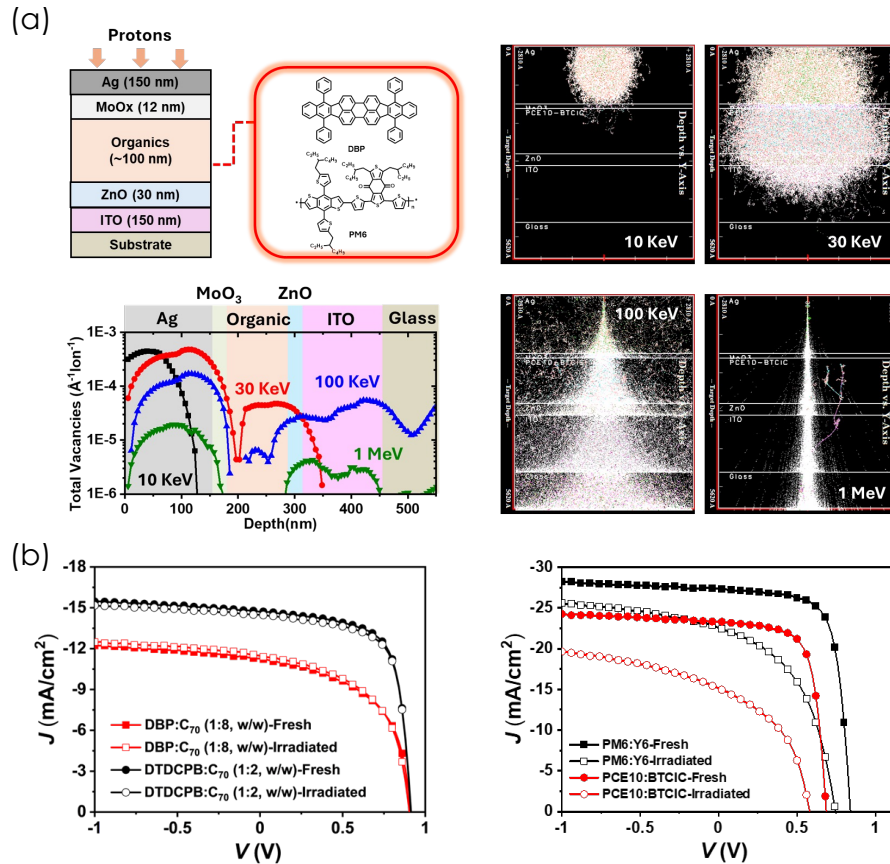


Figure: (a) Molecular structures, simulated proton interactions and total vacancies within the devices and (b) Current-density-voltage (J-V) characteristics of organic photovoltaic cells.

Objective

➤ To study the resilience of organic photovoltaic (OPV) cells to proton irradiation at doses equivalent to that experienced by spacecraft in low earth orbit

Impact

The light weight and flexible properties of OPVs make them promising candidates for aerospace applications, where payload weight is a primary concern. Our findings provide the potential of OPVs for space applications and reveal the consequences of radiation-matter interactions in OPVs.

Facilities and Methods Used

- Ion Beam Accelerator
- Vacuum thermal evaporator
- Spin coater

Relevant Papers

- Y. Li, et al., *Joule*, DOI: 10.1016/j.joule.2024.12.001

Funding

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Collaborators

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