



Outdoor Operational Stability of Indium-Free Flexible Polymer Solar Modules Over 1 Year Studied in India, Holland, and Denmark

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Outdoor Operational Stability of Indium-free Polymer Solar Cell Modules Investigated over 1 year

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In Summary



- Low-cost encapsulation method is demonstrated.
- The method is roll-to-roll compatible.
- Decay in photovoltaic is due to localized defects
 - the edge cross, contacts, and uneven adhesive thickness → O_2 and H_2O infiltration
 - results in PEDOT:PSS degradation/delamination
 - Photooxidation of photoactive polymer → not the main cause of degradation
- Simple design changes → performance is dramatically enhanced ($MPP_{t=0}$ equal $MPP_{t=1 \text{ year}}$)
 - Defects due to edges and uneven adhesive thickness is eliminated
 - Defects due to contacting method persist

Hösel, M., Søndergaard, R. R., Jørgensen, M. and Krebs, F. C. (2013), *Adv. Eng. Mater.*, 15: 1068–1075.

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