Edge sealing for low cost stability enhancement of roll-to-roll processed flexible polymer solar cell modules - DTU Orbit (11/08/2019)

**Edge sealing for low cost stability enhancement of roll-to-roll processed flexible polymer solar cell modules**

Fully roll-to-roll processed polymer solar cell modules were prepared, characterized, and laminated. Cell modules were cut from the roll and matched pairs were selected, one module with exposed cut edges, the other laminated again with the same materials and adhesive sealing fully around the cut edges. The edge sealing rim was 10 mm wide. Cell modules were characterized by periodic measurements of IV curves over extended periods in a variety of conditions, as well as by a variety of spatial imaging techniques. Data show significant stability benefits of the edge sealing process. The results of the imaging experiments show that the ingress of atmospheric reactants from the edges leads to degradation. In the case of edge sealed devices the same effects are observed but significantly slowed down. In particular, the fast nonlinear degradation is eliminated.

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