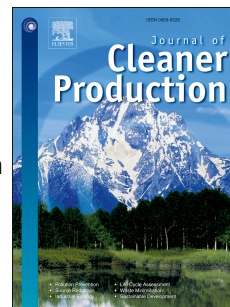


# Accepted Manuscript

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PII: S0959-6526(18)30989-2

DOI: [10.1016/j.jclepro.2018.03.302](https://doi.org/10.1016/j.jclepro.2018.03.302)

Reference: JCLP 12560

To appear in: *Journal of Cleaner Production*

Received Date: 22 January 2018

Revised Date: 13 March 2018

Accepted Date: 30 March 2018

Please cite this article as: Zhang J-w, Cao D-k, Cui Y-c, Putson C, Song C, Huang P, Investigation of the influence of electron avalanche on the crystallinity of backsheet in solar photovoltaic system for sustainable energy, *Journal of Cleaner Production* (2018), doi: 10.1016/j.jclepro.2018.03.302.

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# Investigation of the Influence of Electron Avalanche on the Crystallinity of Backsheet in Solar Photovoltaic System for Sustainable Energy

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## Abstract:

Insulating layer of photovoltaic (PV) modules is subject to irradiation-induced ageing that can affect their security, stability and lifetime. Early potential induced degradation phenomena were founded in the insulating Polyethylene Terephthalate (PET) backsheet of photovoltaic module. However, the designed lifetime of PET insulating backsheet is inconsistent with their practical service time. We have found that the corona discharge in the air provides consistent relative degradation behavior, and that crystallinity values can vary on different electron avalanche duration. Surface charge evacuation phenomena of PET under varied corona discharge time were also tested. An increase tendency between the chemical degradation and the elevated electron irradiation was found. The insulating function and crystallinity properties

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