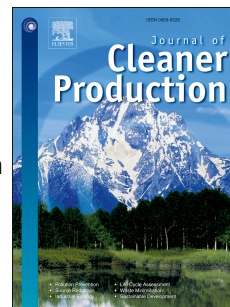


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Investigation of the Influence of Electron Avalanche on the Crystallinity of Backsheet in Solar Photovoltaic System for Sustainable Energy

Jia-wei Zhang^{a,b,*}, De-kun Cao^a, Yan-chen Cui^a, Chatchai Putson^c,
Chen Song^d, Peng Huang^e

^a School of Electrical Engineering, Northeast Electric Power University, No.169,
Changchun Road, Jilin City 132012, China

^b State Key Laboratory of Reliability and Intelligence Electrical Equipment, Hebei
University of Technology, Tianjin, 300130, China

^c Materials Physics Laboratory, Department of Physics, Faculty of Science, Prince of
Songkla University (PSU), Songkhla, 90112, Thailand

^d Heidelberg University, Interdisciplinary Center for Scientific Computing, Im
Neuenheimer Feld 205, 69120 Heidelberg, Germany

^e State Key Laboratory of Solid-State Lighting, Institute of Semiconductors, Chinese
Academy of Sciences, Beijing, 100083, China

* Corresponding author: Jia-wei Zhang

Email: jiawei8633@163.com; Tel:+86(0)432-64806691; Fax: +86(0)432-64806691

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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