

Title: Amorphous photovoltaic panel detection

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This study introduces an automated defect detection pipeline that leverages deep learning and computer vision to identify five standard anomaly classes: Non-Defective, Dust, ...

To tackle the challenge of modeling PV panels with diverse structures, we propose a coupled U-Net and Vision Transformer model named TransPV for refining PV semantic segmentation.

Advances in automation, prediction, and management have enabled sophisticated fault detection methods to enhance system reliability and availability. This paper emphasizes the pivotal ...

To tackle this challenge, we propose an Adaptive Complementary Fusion (ACF) module designed to intelligently integrate spatial and channel information.

Amorphous PV panel is modeled in this paper to improve electrical characteristic and curve fitting in real time data processing such as fault diagnostic and Maximum Power Point Tracking (MPPT).

By integrating drone technology, the proposed approach aims to revolutionize PV maintenance by facilitating real-time, automated solar panel detection. This advancement promises substantial cost ...

EL is a method that applies electrical current to stimulate PV cells to emit light, thereby identifying defects such as cracks and performance degradation. This technique is particularly ...

This identification algorithm provides automated inspection and monitoring capabilities for photovoltaic panels under visible light conditions.

Automated defect detection in electroluminescence (EL) images of photovoltaic (PV) modules on production lines remains a significant challenge, crucial for replacing labor-intensive and...

This paper proposes a photovoltaic panel defect detection method based on an improved YOLOv11



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architecture. By introducing the CFA and C2CGA modules, the YOLOv11 model is ...

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