Photovoltaic silicon panel defect detection

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Generated on: 2026-06-18 17:01:26

In this study, faults in solar panel cells were detected and classified very quickly and accurately using deep learning and electroluminescence images together. A unique and new dataset ...

This paper presents a defect analysis and performance evaluation of photovoltaic (PV) modules using quantitative electroluminescence imaging (EL). The study analyzed three common PV ...

This paper discusses a deep learning approach for detecting defects in photovoltaic (PV) modules using electroluminescence (EL) images.

This paper presents a benchmark dataset and results for automatic detection and classification using deep learning models trained on 24 defects and features in EL images of ...

This paper presents a lightweight object detection algorithm based on an improved YOLOv11n, specifically designed for photovoltaic panel defect detection. The goal is to enhance the ...

This module is seamlessly integrated into YOLOv5 for detecting defects on photovoltaic panels, aiming primarily to enhance model detection performance, achieve model lightweighting, and...

Abstract: Efficient and intelligent surface defect detection of photovoltaic modules is crucial for improving the quality of photovoltaic modules and ensuring the reliable operation of large-scale ...

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

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