Photovoltaic Intelligent Detection Module

An intelligent detection system for photovoltaic module defects based on multi-source data fusion is proposed to solve the problems of difficulty in component d

In the present study, an attention-based deep learning network, namely, vision transformer (ViT), is adopted to automatically detect the visual faults, such as glass breakage, ...

This paper presents a novel PV defect detection algorithm that leverages the YOLO architecture, integrating an attention mechanism and the Transformer module.

Manual inspection of PV modules using electroluminescence (EL) imaging is time-consuming and prone to errors. This study proposes a clever method for detecting defects using a lightweight deep learning ...

To address this issue, an improved VarifocalNet has been proposed to enhance both the detection speed and accuracy of defective photovoltaic modules.

This paper proposed a novel framework, consisting of image acquirement, image segmentation, fault orientation and defect warning, to ...

This paper proposed a novel framework, consisting of image acquirement, image segmentation, fault orientation and defect warning, to remedy the limitations for PV module defects.

Target detection models have achieved remarkable progress in the defect detection of photovoltaic (PV) modules" electroluminescence (EL) images.

A novel intelligent end-to-end detection for module defects framework for PV power plants combining the visible and infrared images has been presented for the first time.

The adoption of a deep learning-based infrared image detection algorithm for PV modules significantly reduces the cost of manual inspection and greatly improves the accuracy and ...

This review covers a wide range of topics related to PV monitoring and analysis, including the selection of UAVs for PV plant applications, various cameras used for PV monitoring, considerations related to ...

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