

Tommaso et al. [19] proposed the detection of panel defects on photovoltaic aerial images based on the YOLO-v3 algorithm and computer vision techniques, which ...

In this paper, we propose a defect detection system for PV panels based on an improved DenseNet neural network. The system model dataset is first established by dividing ...

The proposed approach consists of a multi-stage architecture composed by three main processing modules and may be easily applied to aerial images in both the IR and VIS ...

Defect detection of PV panel. Machine vision-based approaches have become an important direction in the field of defect detection. Many researchers have proposed ...

To improve the speed of photovoltaic module defect detection, Meng et al. 24 proposed a YOLO-based object detection algorithm YOLO-PV based on YOLOv4 for detecting ...

This paper develops an automatic defect detection mechanism using texture feature analysis and supervised machine learning method to classify the failures in ...

In Guo and Cai (2020), the authors suggest a step-by-step thermography of solar panel cell defects. Step-heating halogen lights were utilized to optically stimulate the ...

Finally, other defects are located by de-grid threshold segmentation, and all defect detection results are obtained by fusing the crack results. The image enhancement ...

Automated analysis and defect detection of PV module level EL images are critical to derive useful information from batches of PV modules bought and sold throughout ...

Photovoltaic (PV) panel surface-defect detection technology is crucial for the PV industry to perform smart maintenance. Using computer vision technology to detect PV panel ...

Photovoltaic (PV) system performance and reliability can be improved through the detection of defects in PV modules and the evaluation of their effects on system operation. ...

The maintenance of large-scale photovoltaic (PV) power plants is considered as an outstanding challenge for years. This paper presented a deep learning-based defect ...

Defect detection of solar panels plays an essential role in guaranteeing product quality within automated

production lines. However, traditional manual inspection of solar panel defects ...

Photovoltaic panel defect detection presents significant challenges due to the wide range of defect scales, diverse defect types, and severe background interference, often ...

Defects of solar panels can easily cause electrical accidents. The YOLO v5 algorithm is improved to make up for the low detection efficiency of the traditional defect detection methods. Firstly, it is improved on the basis of ...

With the continuous development of artificial intelligence and machine learning technologies, automated PV panel defect detection methods have become a hot area in ...

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