

Why is a UAV inspection system important for a PV plant?

Therefore, early fault diagnosis (detection and classification) using a UAV inspection system is crucial for PV plant's O&M to ensure adequate performance, prevent extension of defects to healthy areas and reduce the monitoring cost.

Can unmanned aerial vehicles support plant inspection and PV fault detection?

Unmanned aerial vehicles UAV with integrated thermal and RGB cameras have been used to support plant inspection and PV fault detection [74,75,112,113]. Many studies in the literature involve the application of different UAV and imaging sensors.

What is the UAV inspection platform?

The UAV inspection platform can integrate the visual assessment and infrared thermograph based analysis for condition monitoring and defect detection of large-scale PV systems.

Can a UAV be used for PV inspection?

Generally, UAVs used for PV inspection are equipped with a thermal camera (which may or may not complement a standard RGB camera or other sensors) to identify defects that can produce heat anomalies on the solar panels.

What is a UAV-based inspection system for large-scale PV systems?

The implemented UAV-based system for inspection of large-scale PV systems consists of an UAV with a set of sensors in different forms and on-board processors, a digital light visible single-lens reflex (SLR) camera for condition monitoring, and a ground control station (GCS).

What are the advantages of UAV inspection of PV modules?

The obtained images of PV modules during UAV inspection are first transformed from RGB mode into single-channel images, for significant reduction of computation and analysis complexity. The filtering process enhances the quality of images of PV modules and the obstacles of gridlines can be eliminated.



UAV photovoltaic panel inspection system

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