

PV SYSTEM DOCTOR

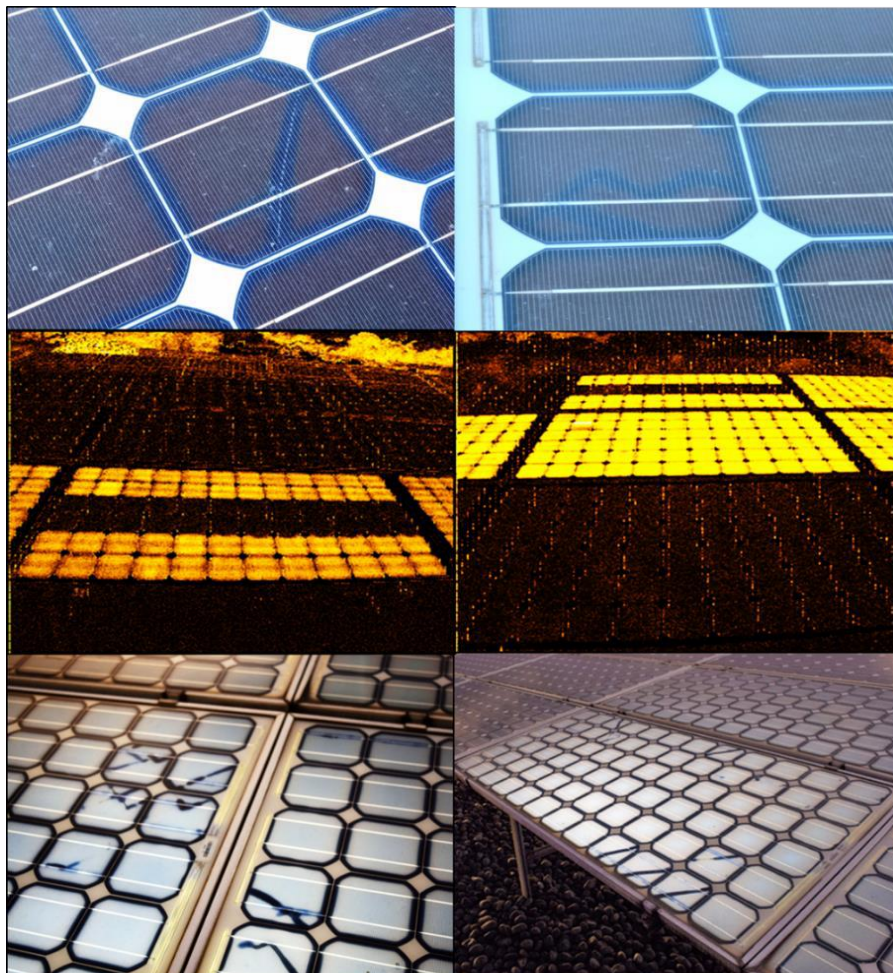
PV SYSTEM INSPECTION & FAULT DIAGNOSIS SPECIALIST

50 - 100 kWp

SINGAPORE



Solar Energy Research
Institute of Singapore



SYSTEM INFORMATION

System type:	Commercial rooftop Grid-connected
Module technology:	Mono-crystalline silicon
Inverters:	String inverters
Age of the system:	More than 10 years

KEY FINDINGS

Module defects:	Bypass diode failure, Backsheet burn marks, Snail trail, Micro-cracks
BOS faults:	Inverter failure, Cable faults

KEY BENEFITS

Key benefits	Identify and filter out faulty modules, retain functional modules for system refurbishment. Induced cost savings for system owner.
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BACKGROUND

The SERIS PV System Doctor team was engaged by a commercial building owner to inspect and revamp the PV system installed on the building premise.

ON-SITE DIAGNOSIS AND FINDINGS

On site-inspections revealed that the complete PV system was not operating. Upon investigation with unique imaging techniques, the team was able to successfully identify the defective modules. The modules were pre-dominantly affected by snail trails and micro-cracks. Bypass diodes failures and back sheet burn marks were also observed. Equipotential bonding of extraneous conductor (modules frames) was also found to be missing. AC cable faults and non-functional inverters were also found to cause the PV system to be not operating.

KEY BENEFITS

SERIS helped to identify the fully-functional modules that could be re-used on the refurbished PV system. It constitutes approximately 85% of the initial PV system installed capacity. A detail refurbishment plan for the PV system was presented to the customer.