

**Optical Analysis and Scanning Electron
Microscope (SEM)
As a Useful Analytical Tools for
Photovoltaic (PV) Degradation Analysis**

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In order to investigate the optical properties of defective Photovoltaic (PV) Cells, there are needs to understand the basic techniques used. Temperature reading from infrared (IR) camera, the operational principle of IR camera and scanning electron microscope (SEM) were studied with respect to their operating environment. Also illustrated is the effect of background noise on material emissivity, result shows that at the same biasing voltage, different colours and temperature were observed in the same region due to the non-uniformity of surrounding emissivity. Lastly the advantages of field emission SEM over conventional electron SEM, in PV industries were discuses. The importance of this work is to help identify and located hot spots regions with easy, when this is done degradation analysis becomes interesting.