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UFS·UV
NATURAL AND
AGRICULTURAL SCIENCES
NATUUR- EN
LANDBOUWETENSAPPE

Contribution ID: 47

Type: **Poster Presentations**

The effect of the Optical System on the Electrical Performance of III-V Concentrator Triple Junction Solar Cells

Tuesday, 5 May 2015 15:15 (1h 45m)

The progression of the development of High Concentrated Photovoltaic (H-CPV) technology promises lower costs and higher cell and module efficiencies. However, development is limited by various materials and device aspects. One of these, the power production limiting effects of the optical system on a Concentrator Triple Junction (CTJ) cell in an H-CPV module, is the focus of this paper. With carefully designed experiments, which included spectral measurements, topographic intensity profiles in the cell plane and the analysis of I-V curves of the CTJ cell/H-CPV module, one can fully characterise loss mechanisms associated with the optical system and their effect on the electrical performance of the CTJ cell.

Are you currently a postgraduate student? (Yes/No)

YES

At what level of studies are you currently? (Hons/MSc/PhD)

PhD

Please provide the name and email address of your supervisor.

E.E van Dyk
Ernest.vanDyk@nmmu.ac.za

Primary author: Mr SCHULTZ, Ross (Nelson Mandela Metropolitan University)

Co-authors: Prof. VAN DYK, Ernest (NMMU); Dr VORSTER, Frederik (NMMU)

Presenter: Prof. VAN DYK, Ernest (NMMU)

Session Classification: Poster

Track Classification: SACPM