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Solution-processed CuSe Quantum Dots Photovoltaics

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There have been tremendous inputs into improving the efficiencies of nanostructure solar cells by extending their absorption wavelength to the near-infrared. This can potentially be achieved by using colloidal nanocrystal quantum dots as the light-harvesting material, as their optical band gap can be tuned to a desired range. Copper selenide is an interesting semiconductor with a bulk band gap of 1.39 eV. It has been shown to have good electrical conductivity properties. It is also used as a precursor for the preparation of CIDS solar cells. Herein, colloidal CuSe nanocrystals are synthesized using a modified solvothermal method and characterized with absorption and photoluminescence spectroscopy, XRD and HRTEM. The resultant nanocrystals are then used as the active material in a Schottky and hybrid solar cell.

Level (Hons, MSc, PhD, other)?

Other, post PhD

Consider for a student award (Yes / No)?

No

Would you like to submit a short paper for the Conference Proceedings (Yes / No)?

Yes

Primary author: Dr MOLOTO, Nosipho (University of the Witwatersrand)

Co-author: Mr PUGGENS, Hendry (University of the Witwatersrand)

Presenter: Dr MOLOTO, Nosipho (University of the Witwatersrand)

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