

ABSTRACT NO.: 565**TITLE:** Investigating the Efficiencies of Hybrid Solar Cells**AUTHOR:** Vinay Sammy (808000488)**SUPERVISOR:** Dr. R. Andrews
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Hybrid solar cells are being extensively researched because it is assumed that it would produce greater efficiencies at lower cost. These cells are made from a combination of inorganic and organic components with various morphologies. There are several different types of cells that are considered hybrid solar cells and they are classed into three broad groups; metal oxide and organic cells, group IV,III-IV semiconductors and organics, and blends of nanoparticles/nanorods with polymers. The organic components form either a flat heterojunction or bulk heterojunctions with the inorganic components of the cells. The only hybrid solar cell that was able to achieve efficiencies greater than that of 10% is the Dye-sensitized solar cell, which belongs to the group of metal oxides and organic cells, at an efficiency of 11% whilst all others are unable to break that 10% barrier. However it is believed that the photovoltaic performance of hybrid solar cells could be improved substantially in the near future in order to overcome the threshold efficiency of 10% need for it to be applied commercially. The conversion efficiencies of morphologically different hybrid cells have been investigated, compared and presented.