The Effect of Cadmium Telluride Thickness on the Current and Voltage Output of Thin-Film Solar Cells

Koirala, Prashamsa (School: Ottawa Hills Junior/Senior High School)

The purpose of this study was to investigate the effects of cadmium telluride thickness on the current and voltage output. Solar cells are devices that convert light energy to electrical energy for humans to use. Electricity is generated through two layers of the cell: the p-type and the n-type. When light hits the cell, electrons and holes are generated. The flow of these electrons is what generates electricity. Cadmium telluride (CdTe) is a p-type material which is mostly responsible for the performance of the cell. Several cells, ranging from 1.27-2.10μm, were produced and their short circuit current density and open circuit voltage were measured. It was determined that thicker CdTe layers result higher current, voltage, and current x voltage values. These findings can help provide a better understanding of how cadmium telluride affects the performance of the cell, setting a basis for creating more efficient and cost effective solar cells.♀

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