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Comparative Study of the p-CdS/n-CdTe Photovoltaic Devices with Depleted Intrinsic Layer

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In fabricating CdS/CdTe photovoltaic devices by close space sublimation method, thermal annealed in CdCl₂ ambient at 400°C at the interface is deposited an *i*-CdO layer by magnetron sputtering. Comparative analysis of electrical, photovoltaic parameters and photo-response spectral distribution is studied. The insertion of *i*-CdO at the interface of device increases both short circuit current (I_{sc}) and open circuit voltage (V_{oc}). In addition, the experimental results revealed that the insertion of *i*-nanolayer broaden the depletion region of the device and diminish the interface state density, thus improving efficiency of the device.