
Characterization of Cu₂O layers prepared by photo-electrochemical and electro-deposition methods and their applications in electrochemical solar cells

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Cuprous oxide (n-Cu₂O) and CuSCN (p-type) layers were deposited on copper substrates using photo-electrochemical method to form p-n junction solar cells. Further, n-Cu₂O layers were deposited on Indium Tin Oxide (ITO) substrates using electro-deposition method. The current-voltage (I-V) characteristics of the above layers were measured and I-V characteristics of n-Cu₂O layers on copper (Cu) and ITO substrates deposited using above two methods were compared. It was found that when Cu₂O layers deposited on ITO substrate by electro-deposition technique produced higher cell performance compared to the n-Cu₂O layers deposited on Cu substrate by photo-electrochemical technique.

Key words: Conductive glass plates, Cu₂O (Cuprous Oxide), electrochemical deposition, photo-electrochemical, solar cell

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