

عنوان مقاله:

Characterization of Thermally Grown Cu₂O Thin Films on Pure Copper Foil

محل انتشار:

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خلاصه مقاله:

Nowadays, metal oxide semiconductors (MOS) are utilized extensively in the fabrication of inorganic, organic, and hybrid perovskite solar cells due to their abundance and non-toxicity. Cupric oxide (CuO) and cuprous oxide (Cu₂O) are the two most common forms of MOS. Cu₂O and CuO are inherently p-type as a result of copper vacancy defects. Furthermore, Cu₂O as a semiconductor material can demonstrate both n-type or p-type properties based on growth method and conditions. In the current work, cuprous oxide (p-Cu₂O) nanoparticles have been successfully synthesized on copper foils by using thermal oxidation. The grown thin films then were characterized using X-ray diffraction (XRD), scanning electron microscopy (SEM) and Energy-dispersive X-ray spectroscopy (EDX). The results are shown the growth of Cu₂O nanoparticles with diameters of about 16 nm to about 57 nm using dry oxidation. The average crystalline size of Cu₂O thin films was observed is about 35nm. Also, the results from EDX show high purity .in the prepared Cu₂O film

کلمات کلیدی:

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