

Effect of argon gas flow rate on properties of film electrodes prepared by thermal vacuum evaporation from synthesized Cu_2SnSe_3 source

ABSTRACT

This work describes a new technique to enhance photoresponse of metal chalcogenide-based semiconductor film electrodes deposited by thermal vacuum evaporation under argon gas flow from synthesized Cu_2SnSe_3 sources. SnSe formation with Cu-doped was obtained under higher argon gas flow rate ($\text{VA} = 25 \text{ cm}^3/\text{min}$). Higher value of photoresponse was observed for films deposited under $\text{VA} = 25 \text{ cm}^3/\text{min}$ which was 9.1%. This finding indicates that Cu atoms inside the SnSe film were important to increase carrier concentrations that promote higher photoresponse.

Keyword: Doping; Photoresponse; Thermal vacuum evaporation; Thin film; Tin selenide