Effects of metal ions concentration on electrodeposited CuZnSn film and its application in kesterite Cu₂ZnSnS₄ solar cells

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Supplementary information

Fig. S1. Linear voltammogram of the co-electrodeposition of copper, tin and zinc (Mo/SLG substrate working electrode, Pt counter electrode and Ag/AgCl/Saturated KCl Reference electrode) immersed in 200mM Na₃C₆H₅O₇·2H₂O and 20 mM CuSO₄·5H₂O, 10 mM ZnSO₄·7H₂O and 10mM SnSO₄. Scan rate: 10 mV s⁻¹. The potential started at 0 V and was scanned in the negative direction.

Fig. S2. EDS spectrum of the electrodeposited alloy film with different duration (a) 30s and (b) 1 min film, both deposited from the electrolyte solution containing 200mM Na₃C₆H₅O₇·2H₂O and 20 mM CuSO₄·5H₂O, 10 mM ZnSO₄·7H₂O and 10mM SnSO₄.

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