

Fig. S1 EDS spectrum of (a) Ti/SnO₂-Sb, (b) Ti/SnO₂-Sb-Zn, (c) Ti/SnO₂-Sb-Cu, (d) Ti/SnO₂-Sb-Cu-Zn

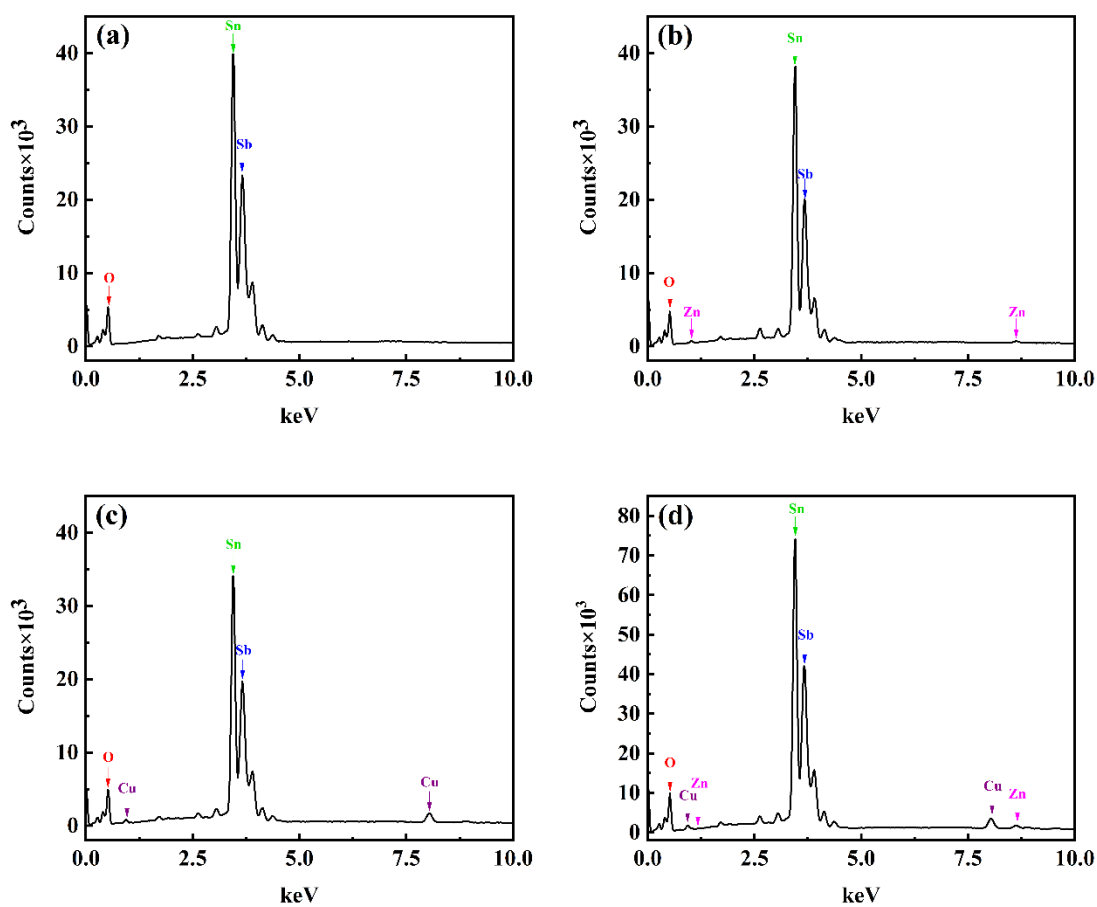


Fig. S2 Elemental distribution of Zn in Ti/SnO₂-Sb-Zn

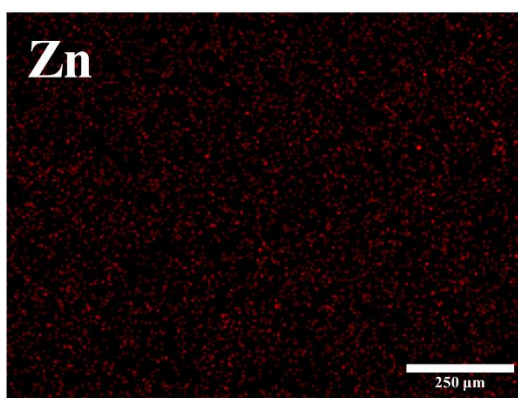


Fig. S3 Elemental distribution of Cu in Ti/SnO₂-Sb-Cu

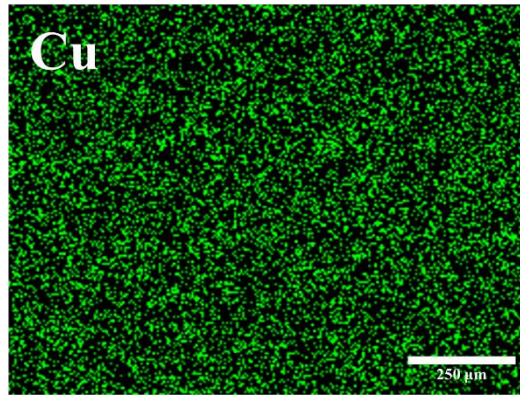


Fig. S4 Elemental distribution of Zn and Cu in Ti/SnO₂-Sb-Cu-Zn

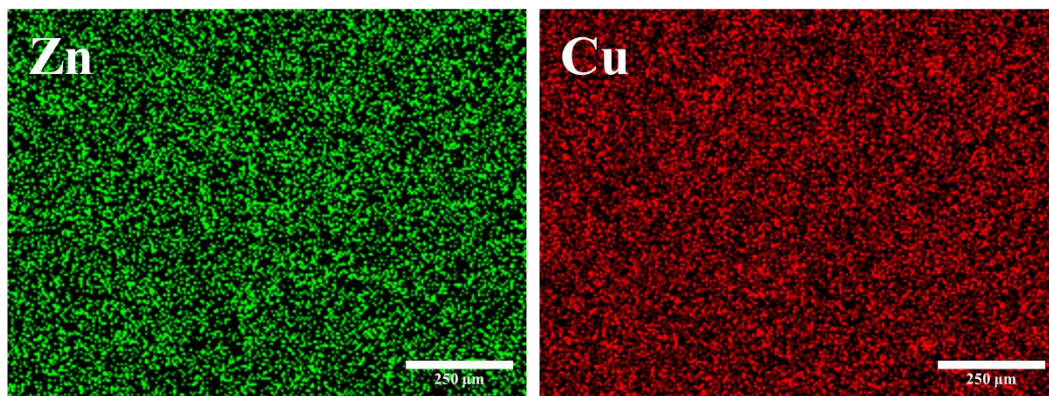


Fig. S5 Cu 2p electron orbit high-resolution spectrum and deconvolution results

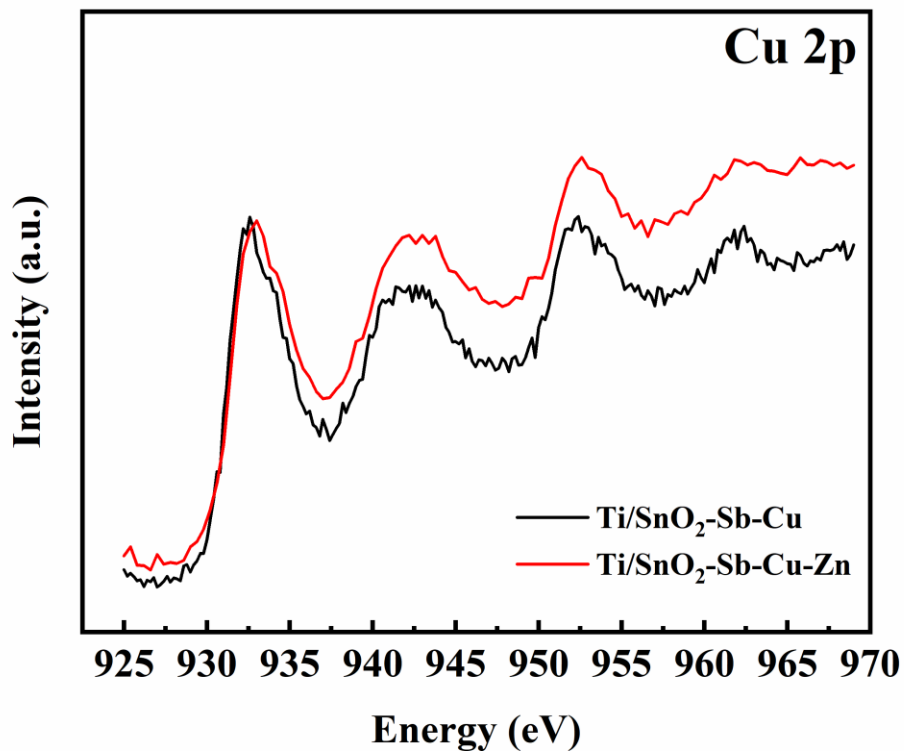


Table S1 The electrochemical parameters of the two electrodes

Electrode	$q^*(\text{mC}/\text{cm}^2)$	$R_s/(\Omega \cdot \text{cm}^2)$	$C_{dl}/(\text{mF} \cdot \text{cm}^2)$	$R_{ct}/(\text{k}\Omega \cdot \text{cm}^2)$
Ti/SnO ₂ -Sb	10.88	4.48	0.42	19.78
Ti/SnO ₂ -Sb-Cu-Zn	36.00	4.55	1.79	1.28