



Supporting information

Effect of Al₂O₃ Dot Patterning on CZTSSe Solar Cell Characteristics

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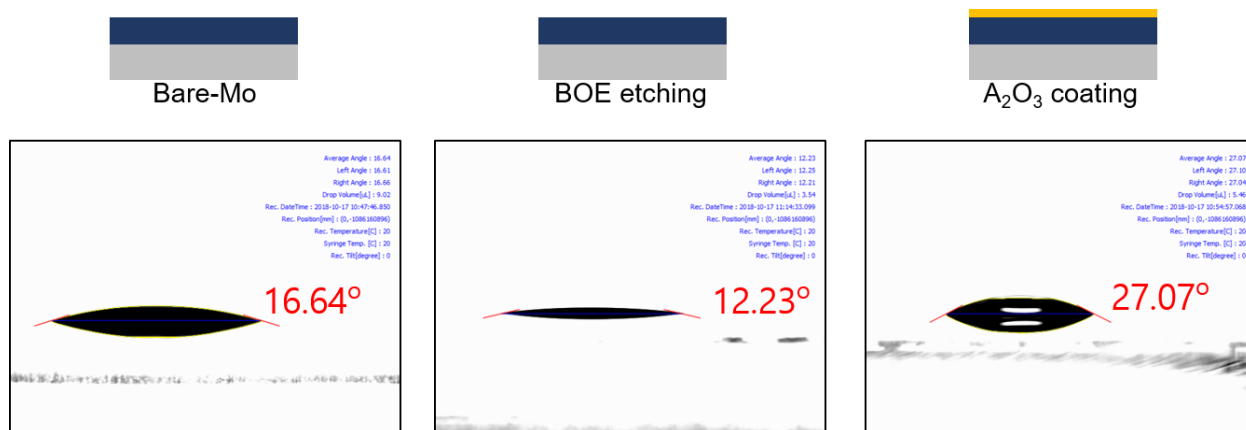


Figure S1. Wettability of bare-Mo, BOE-etched Mo, and Al_2O_3 coated Mo.

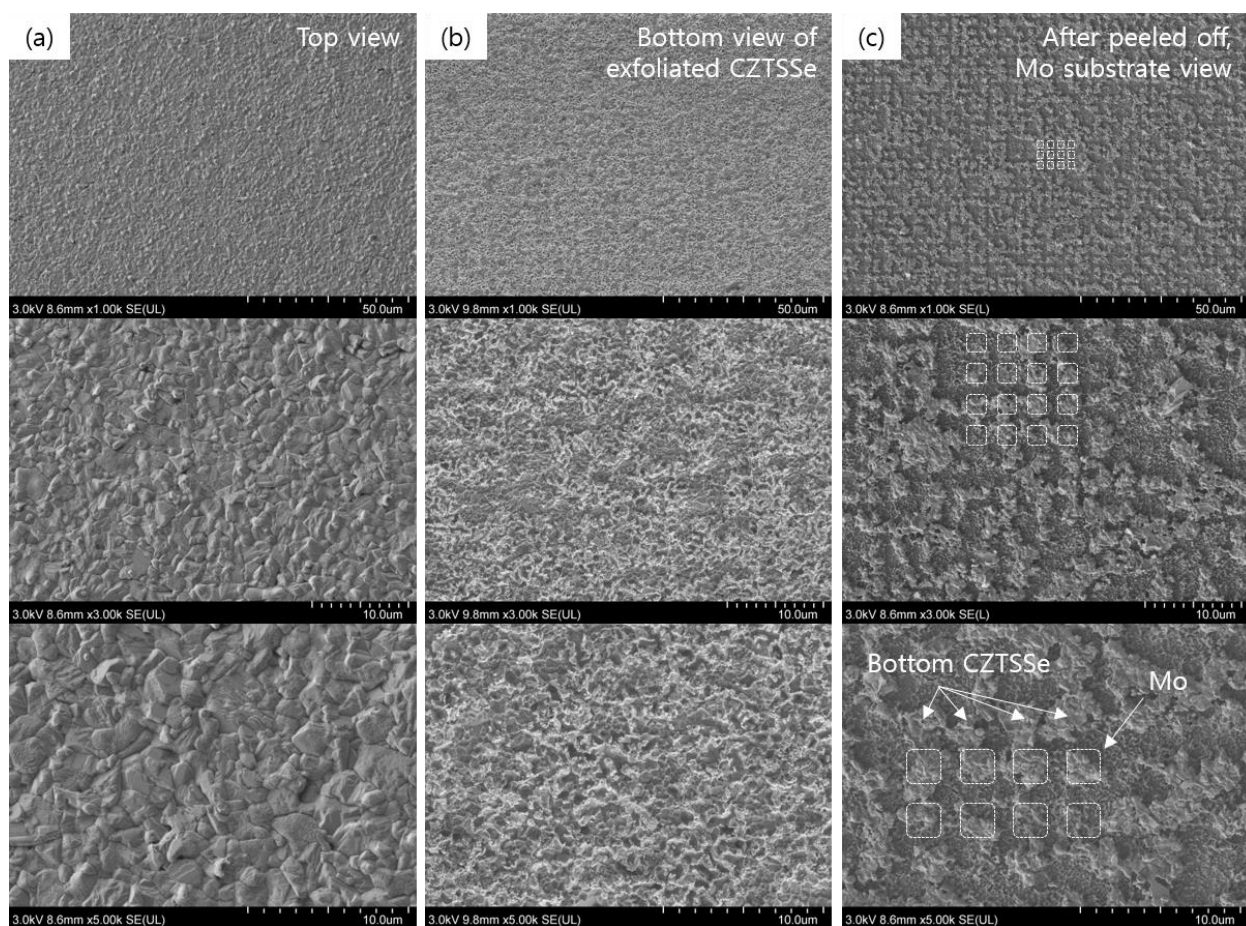


Figure S2. FESEM images of (a) top view, (b) bottom view of lifted-off CZTSSe of the sample with a passivation area of 56%. (c) Top view of the Mo substrate after lifted-off.

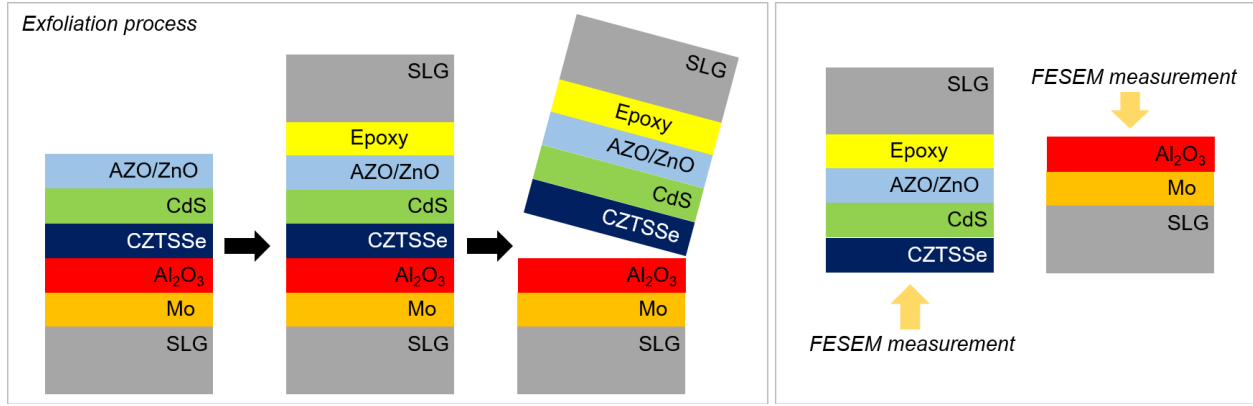


Figure S3. Lift-off process of CZTSSe cell.

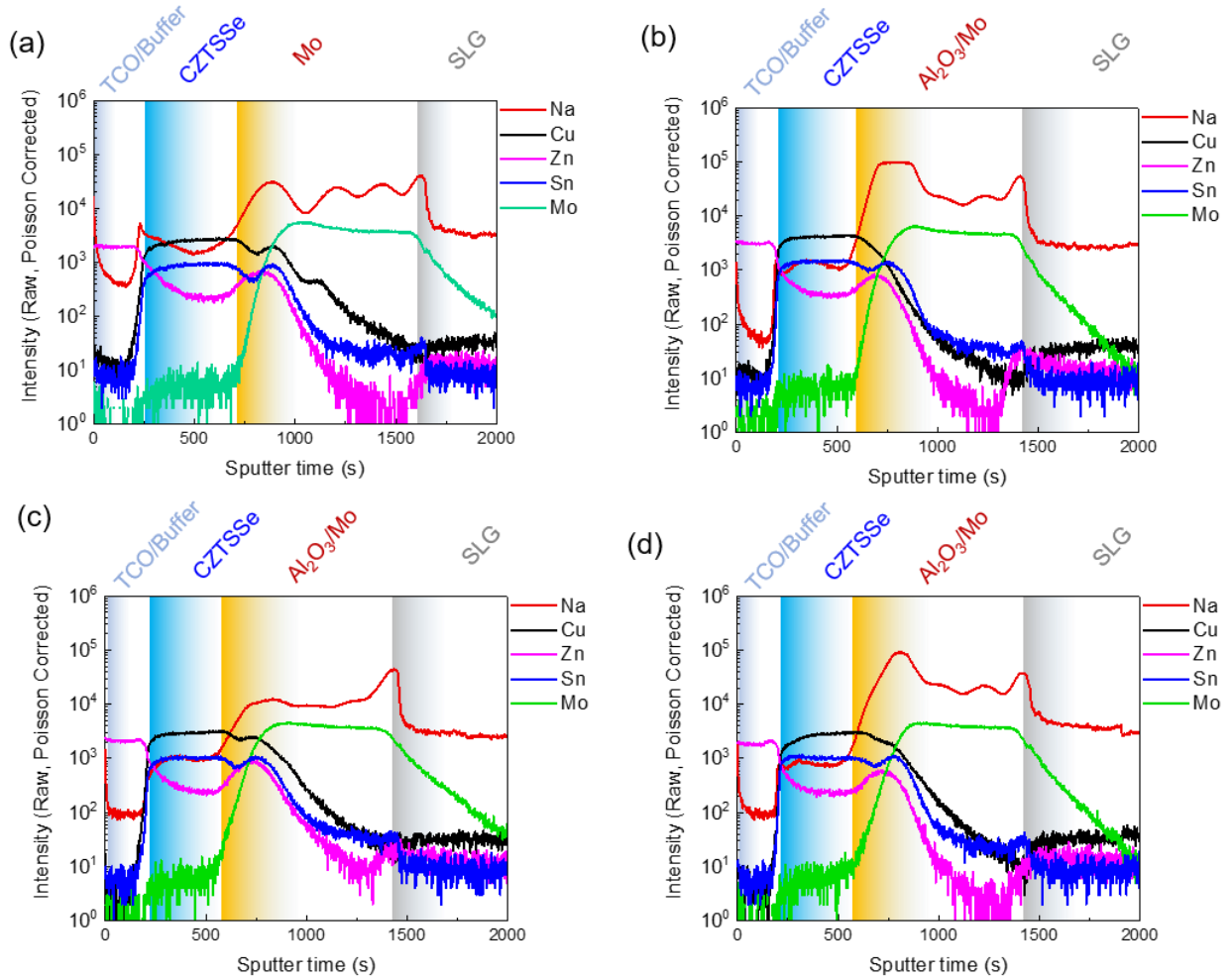


Figure S4. Depth-profiles of each CZTSSe device by TOF-SIMS. The passivation ratio (a)0, (b)56, (c)75, and (d)85 %.