

## Supporting Information

### Revealing Electronic Structure, Heterojunction Band Offset and Alignment of $\text{Cu}_2\text{ZnGeSe}_4$ : A Combined Experimental and Computational Study toward Photovoltaic Applications

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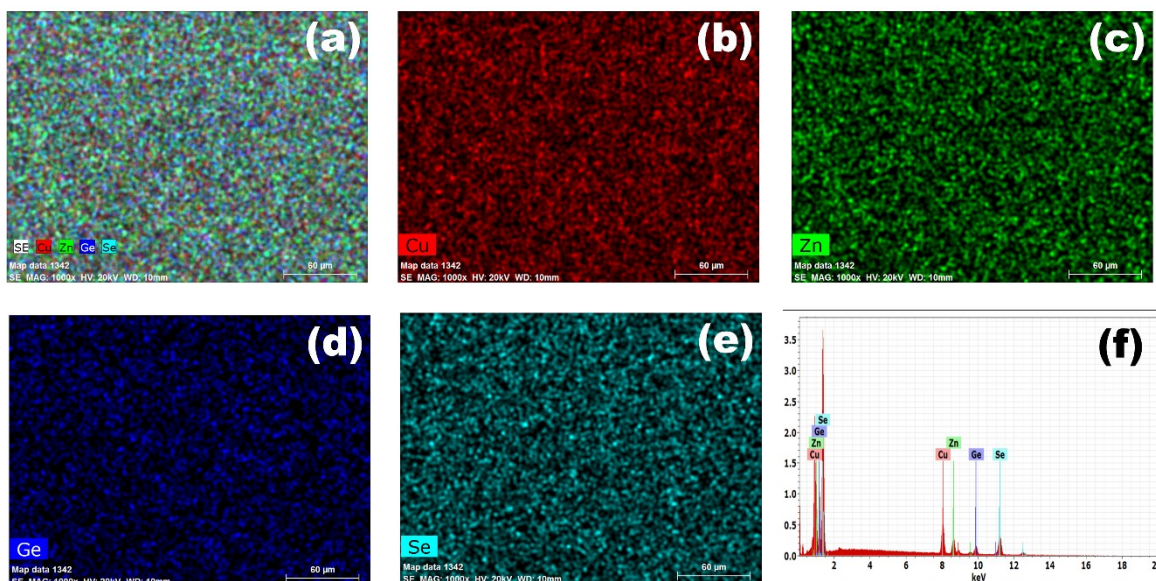
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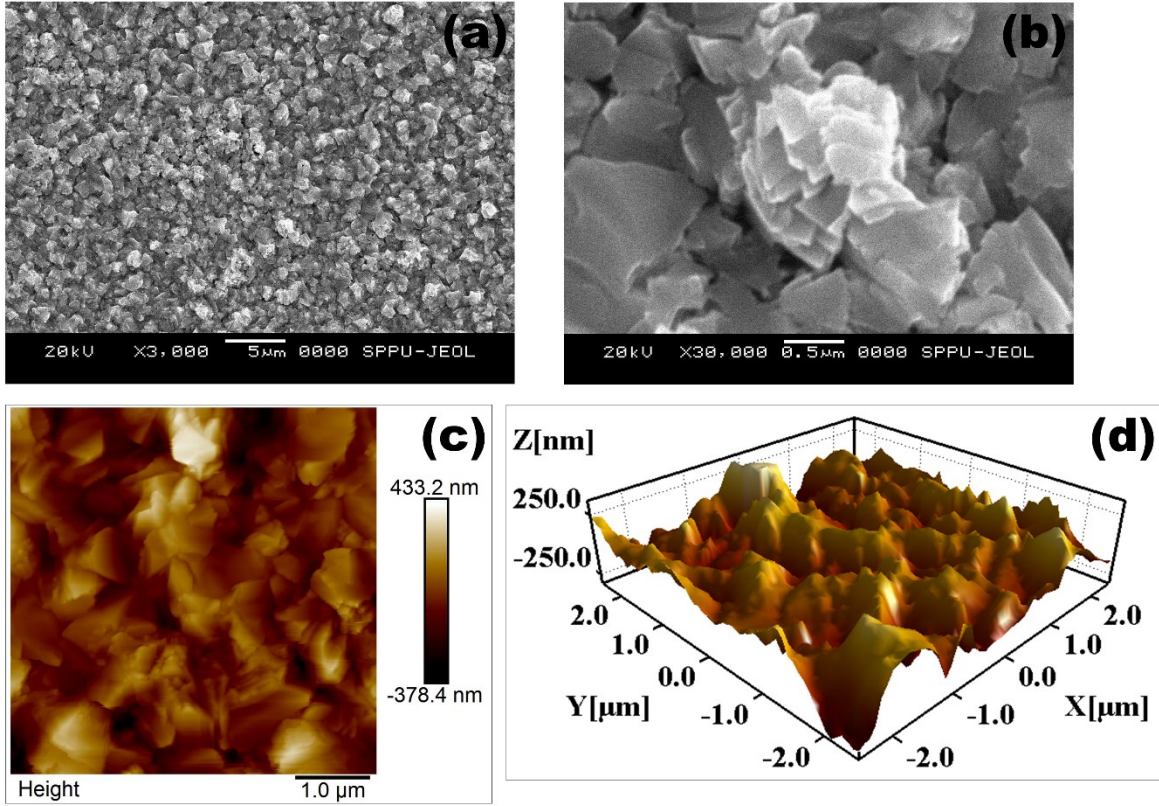
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**Figure S1:** The EDS spectra and the elemental mapping suggest even distribution of chemical constituents in CZGSe thin film.



**Figure S2:** (a, b) SEM images of CZGSe thin film. 2-D (c) and 3-D AFM (d) images CZGSe thin film.



**Table S1:** Calculated effective masses of holes ( $m_h^*$ ) and electrons ( $m_e^*$ ) along the high-symmetry directions of the Brillouin zone of CZGSe.

Direction	$m_h^* (m_e)$	$m_e^* (m_e)$
Z- $\Gamma$	0.0036	0.0057
$\Gamma$ -X	0.0109	0.0099
X-M	0.0525	0.0083
M- $\Gamma$	0.0432	0.00342