Supporting Information

# Thermally Co-Evaporated Ternary Chalcogenide $AgBiS_2$ Thin Films for Photovoltaic Applications: New Route for $AgBiS_2$ Synthesis and Phase Investigation

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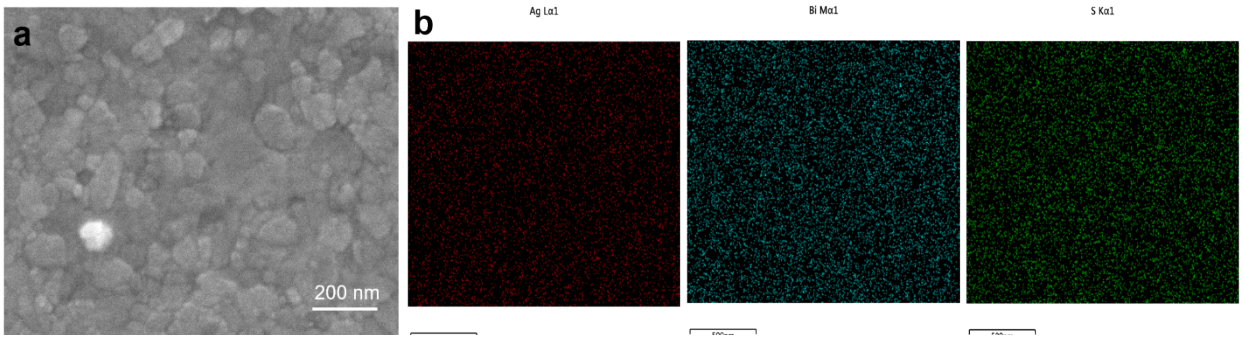


**Fig. S1** (a) SEM image of $AgBiS_2$ surface morphology and (b) EDS mapping of absorber for Ag, Bi and S elements.

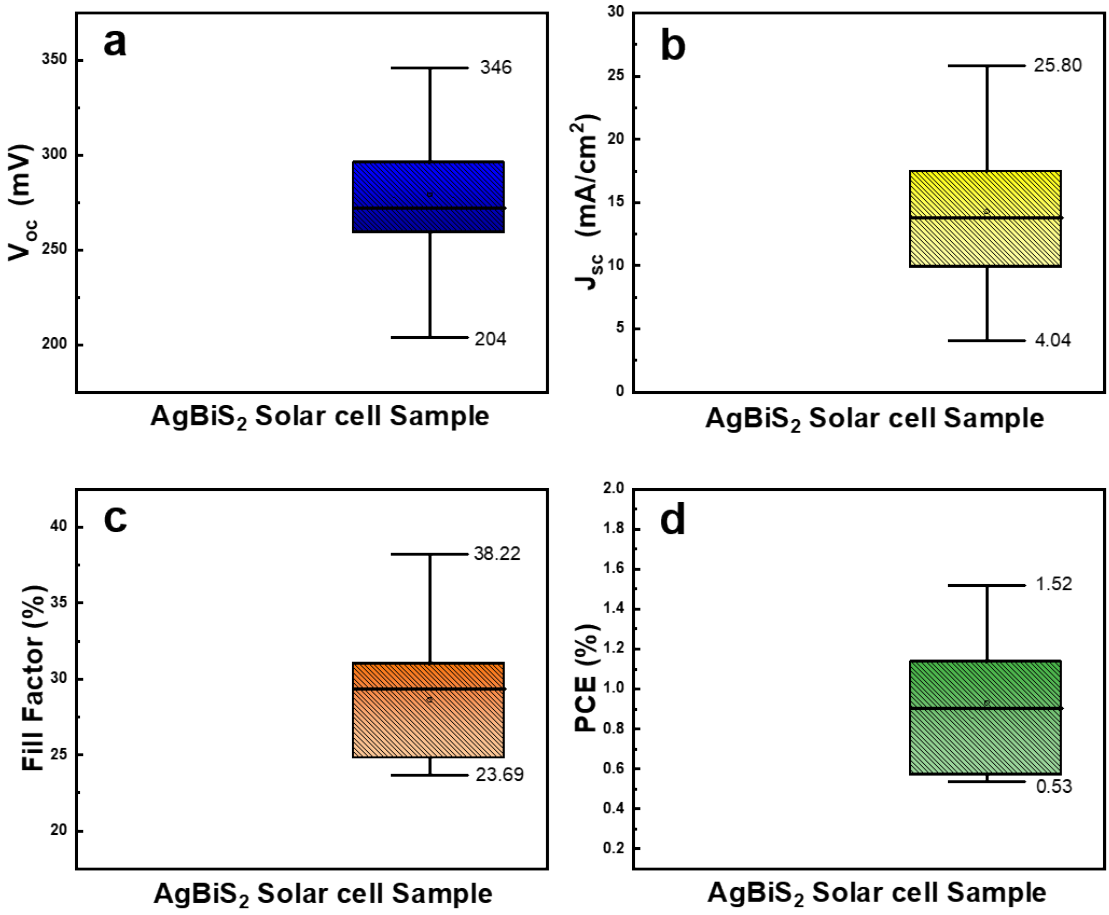


**Fig. S2** statistical box plot for the (a) $V_{oc}$, (b) $J_{sc}$, (c) fill factor and (d) PCE from 50 devices.

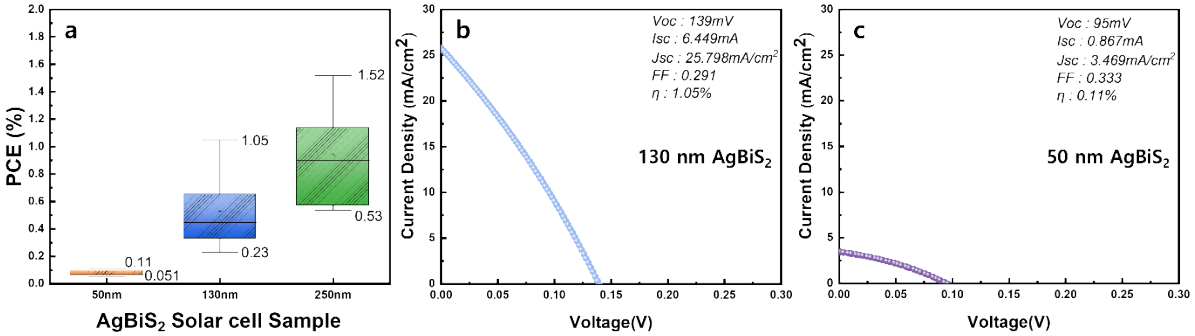


**Fig. S3** (a) PCE as a function of $AgBiS_2$ absorber thickness, and J-V curve of the champion device with (b) 130nm and (c) 50nm absorber thickness