

Supplementary Material

Proposal and Numerical Analysis of Organic/Sb₂Se₃ All-Thin-Film Tandem Solar Cell

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Table S1. Basic parameters of ZnO, WO₃, and CuI transport layers.

Parameters	ZnO [43]	WO ₃ [44]	CuI [53]
Thickness (nm)	30	30	40
Energy gap (eV)	3.6	2.6	3.1
Electron affinity (eV)	4.1	3.8	2.1
Relative permittivity	8.5	4.8	6.5
Electron mobility (cm ² /Vs)	1	30	100
Hole mobility (cm ² /Vs)	0.1	30	43.9
CB effective density of states (cm ⁻³)	7.3×10 ²⁰	2.2×10 ²¹	2.8×10 ¹⁸
VB effective density of states (cm ⁻³)	2.8×10 ²¹	2.2×10 ²¹	1×10 ¹⁹
Shallow donor density (cm ⁻³)	5×10 ¹⁸	5×10 ¹⁸	-
Shallow acceptor density (cm ⁻³)	-	-	5×10 ¹⁸

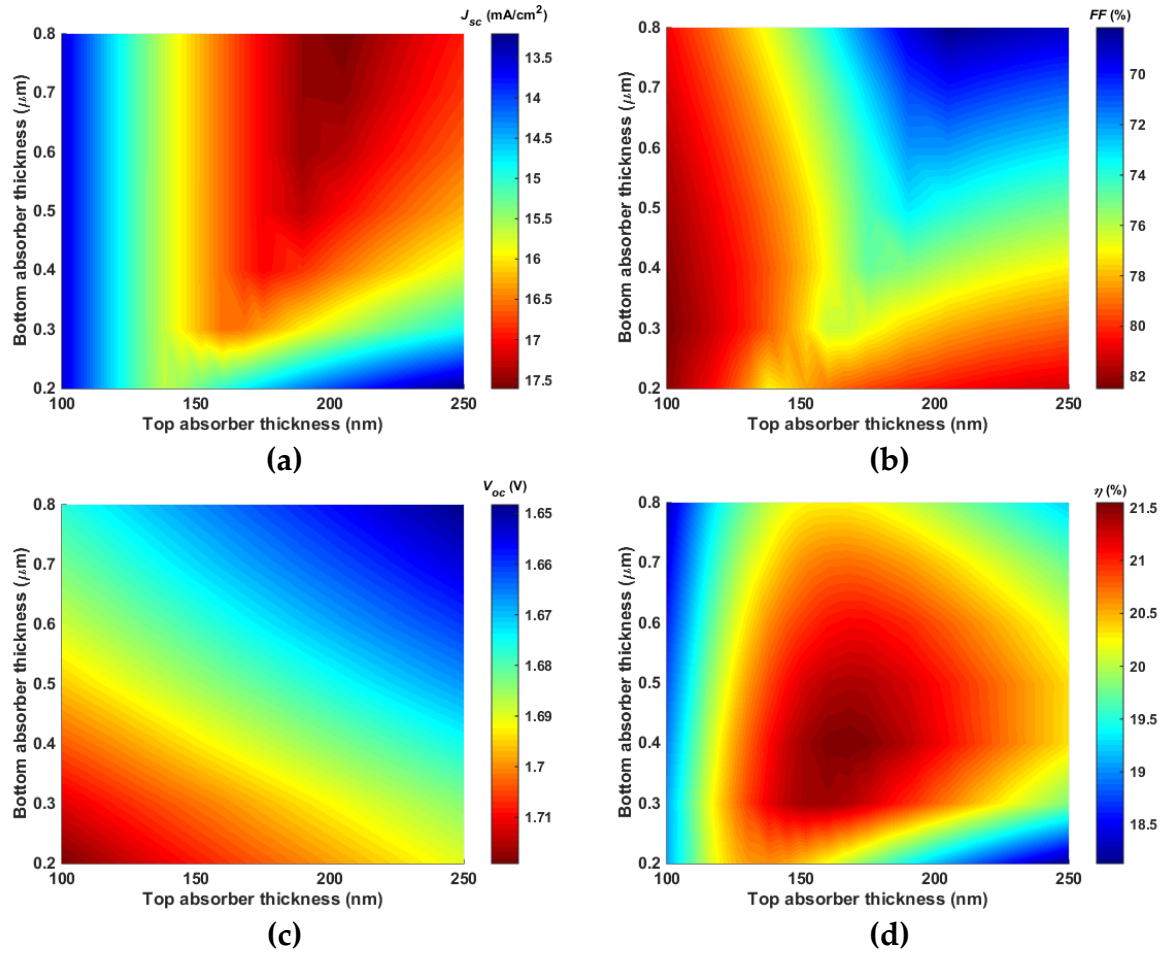


Figure S1. Contour graph of pin tandem efficiency dependency on the thickness of top and bottom absorber layers.

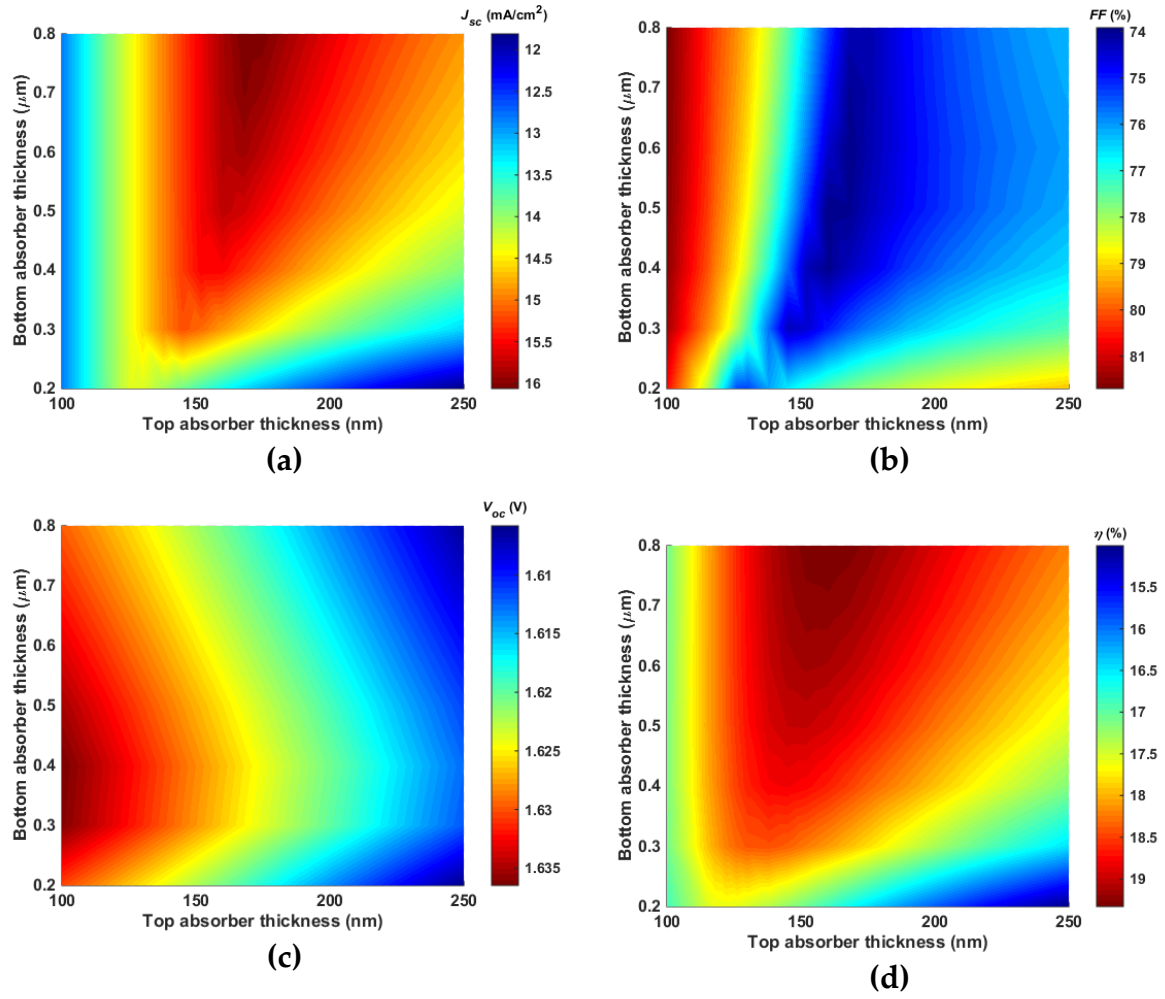


Figure S2. Contour graph of nip tandem efficiency dependency on the thickness of top and bottom absorber layers.