Electronic Supplementary Material (ESI) for Faraday Discussions.

Electronic Supplementary Information

Comprehensive rear surface passivation of superstrate Sb_2Se_3 solar cells via post-deposition selenium annealing treatments and the application of an electron blocking layer

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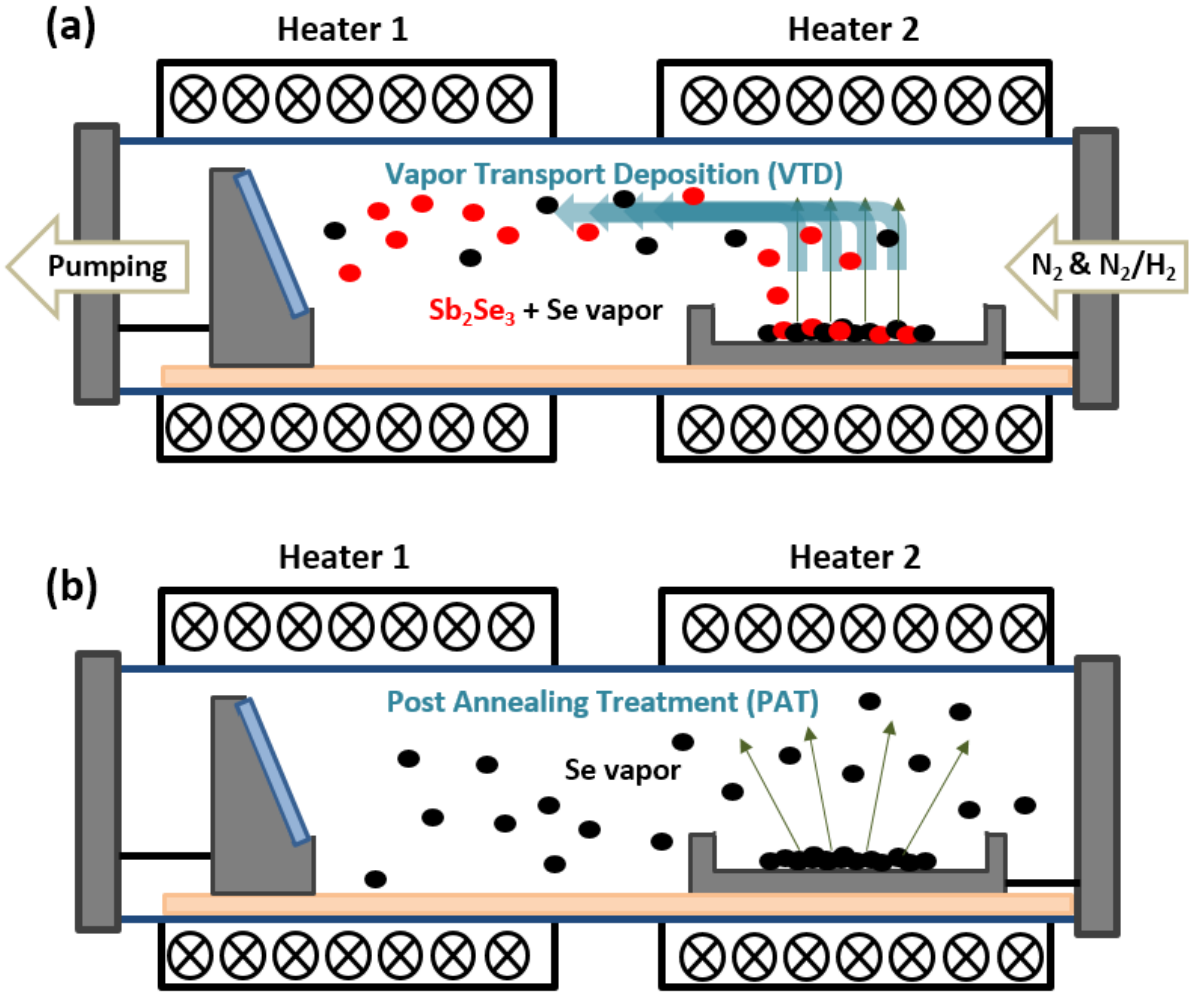

Figure. S1 (a) Schematic of Vapor Transport Deposition and (b) post-deposition Se annealing treatments

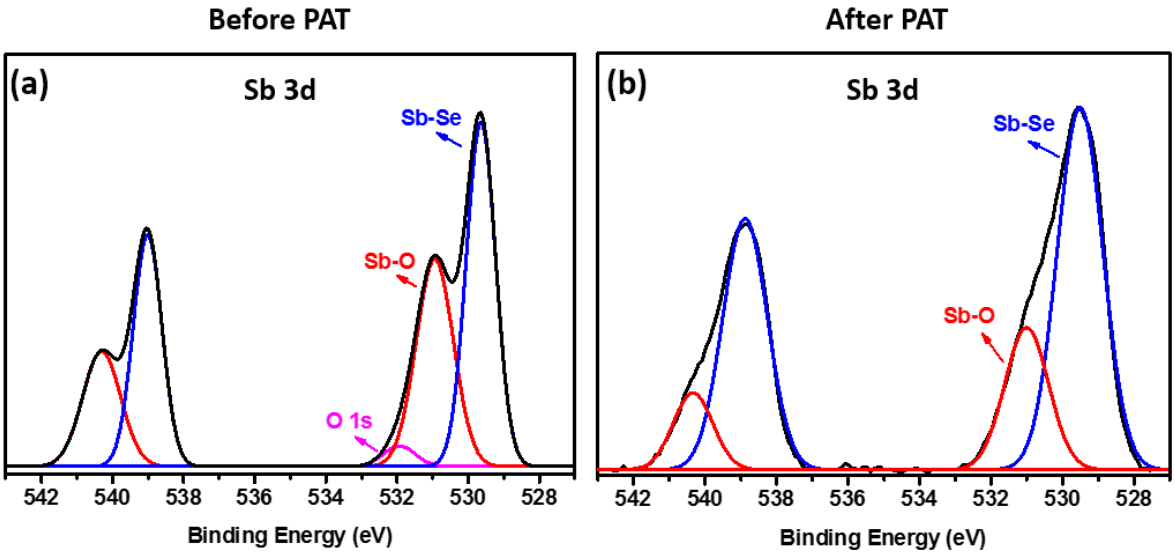

Figure. S2 XPS surface Sb peak before PAT (a) and after PAT (b)

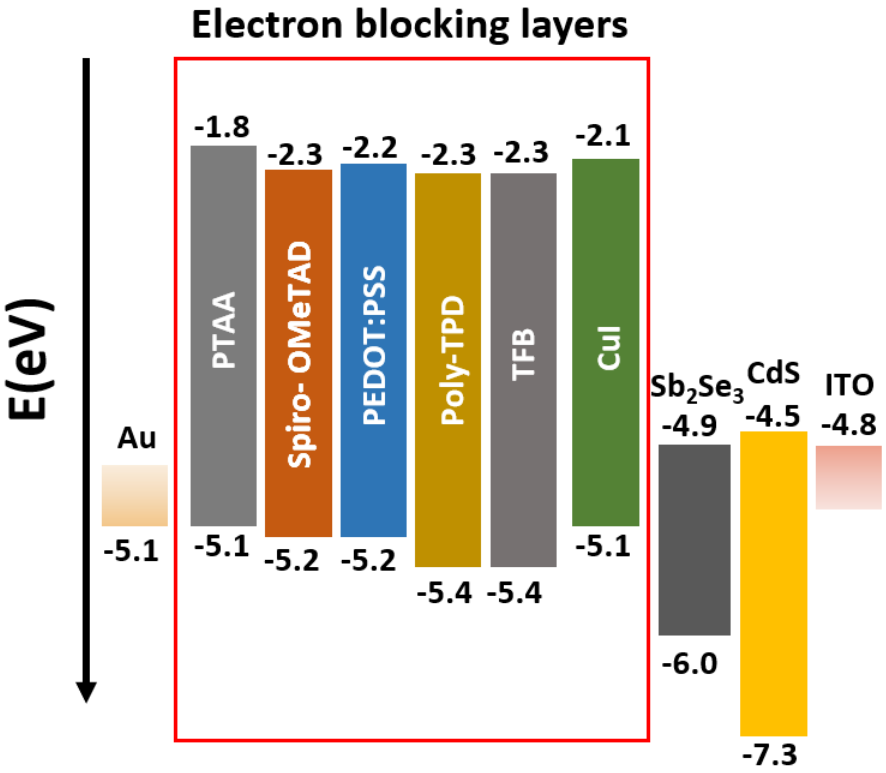

Figure. S3 Band alignments between Sb_2Se_3 and various candidates for an electron blocking layer used in our study

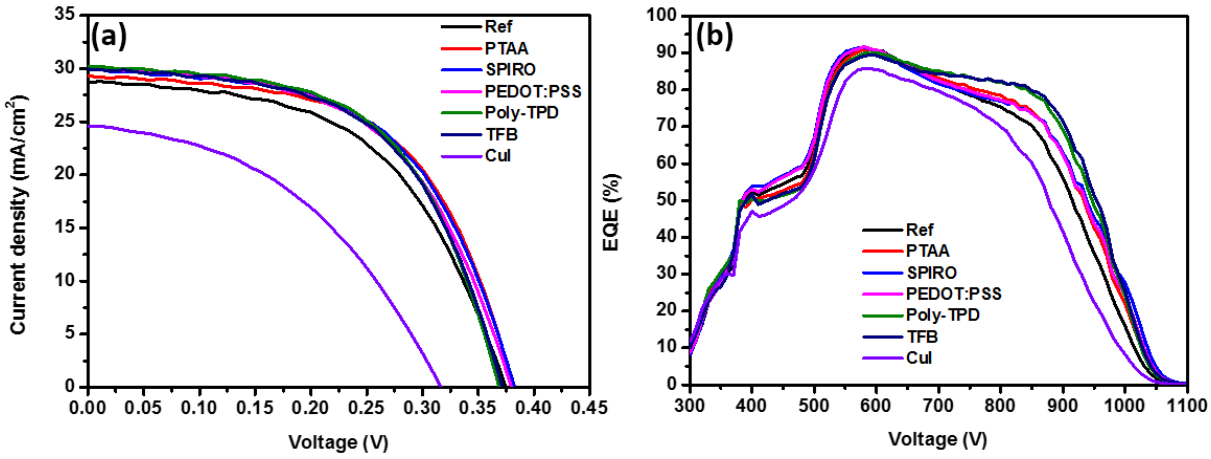

Figure. S4 Effects of various electron blocking layers on device performance

Table S1. Photovoltaic properties of Sb_2Se_3 solar cells with different electron blocking layers

Batch	Ref.	PTAA	SPIRO	PEDOT:PSS	Poly-TPD	TFB	CuI
V_{oc} (V)	0.374	0.381	0.382	0.380	0.368	0.372	0.316
J_{sc} (mA/cm^2)	28.7	29.2	29.8	30.0	30.1	29.9	24.5
Efficiency (%)	5.7	6.4	6.4	6.2	6.3	6.2	3.4
Fill Factor (%)	53.4	57.3	55.8	54.6	57	56	43.6