

Supplementary Materials: Impurity Phases and Optoelectronic Properties of CuSbSe_2 Thin Films Prepared by Cosputtering Process for Absorber Layer in Solar Cells

Sara Kim and Nam-Hoon Kim *

Department of Electrical Engineering, Chosun University, Gwangju 61452, Korea; zomidi@gmail.com

* Correspondence: nhkim@chosun.ac.kr; Tel./Fax: +82-62-230-7028

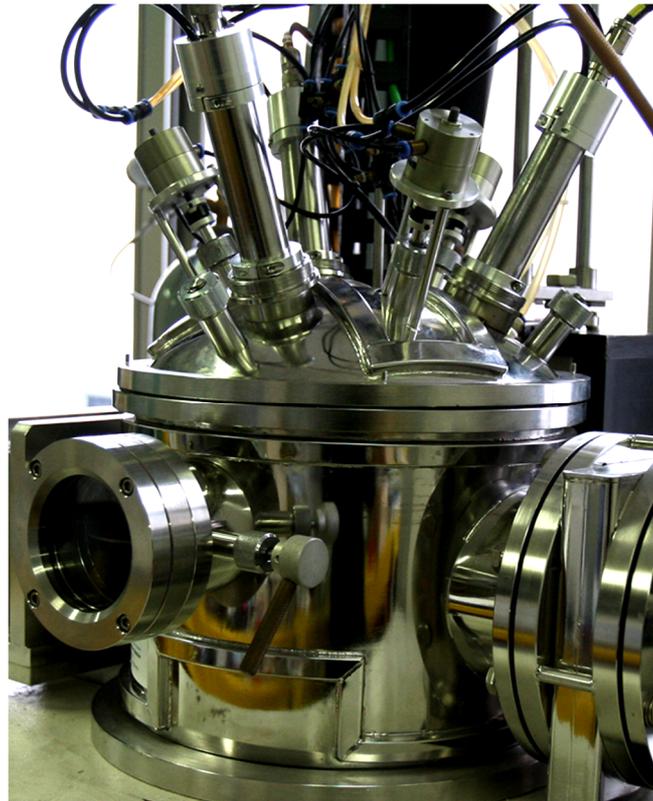


Figure S1. Radio frequency (RF) magnetron cosputtering system (IDT Engineering Co.).

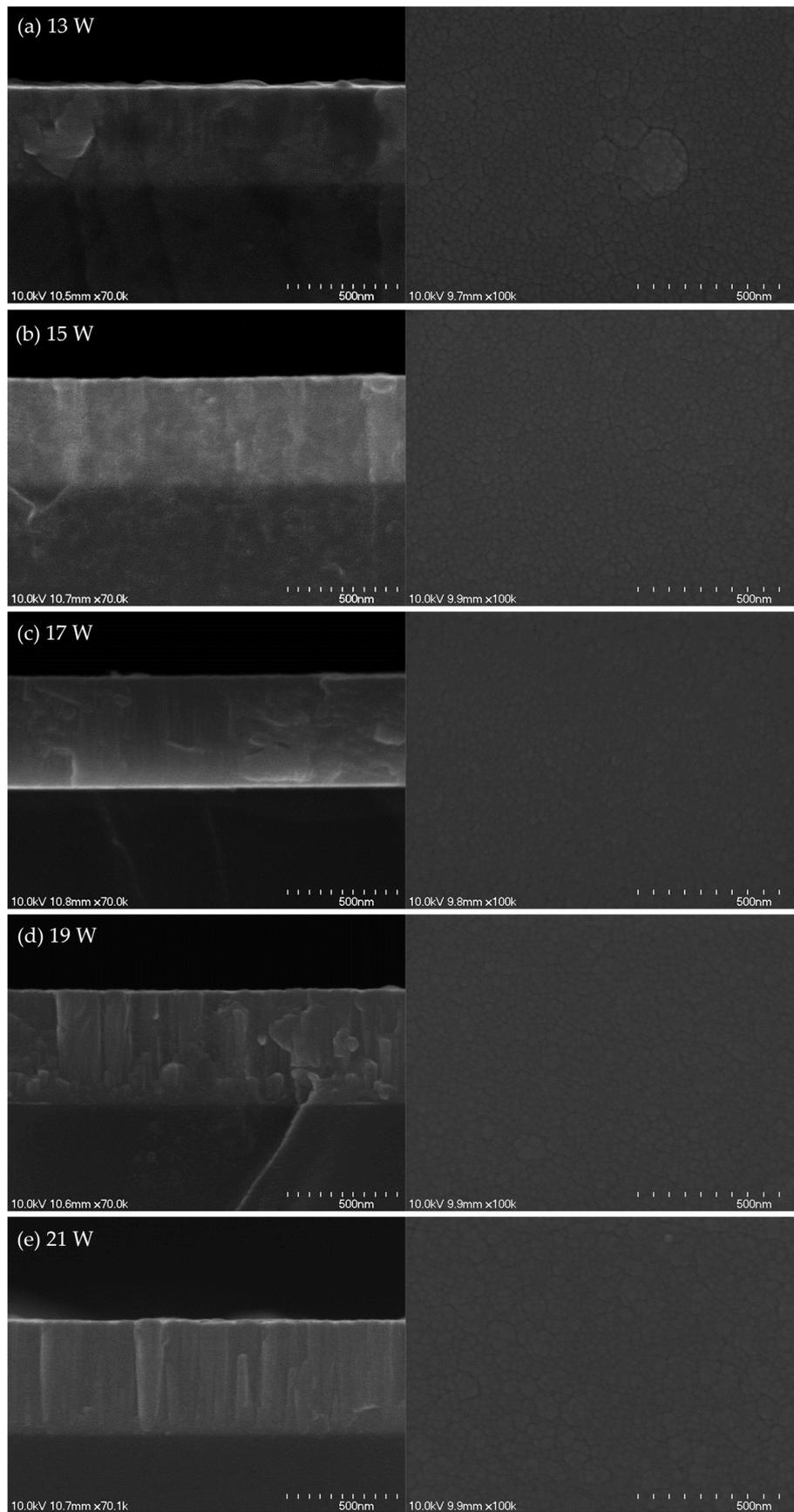


Figure S2. Cross-sectional and surface field emission scanning electron microscope (FESEM) images of as-deposited thin films with different sputtering powers for Sb: (a) 13, (b) 15, (c) 17, (d) 19, and (e) 21 W.

Table S1. Resistivity (ρ), carrier mobility (μ), and carrier concentration (n) of annealed CuSbSe₂ thin films as a function of Sb sputtering power.

Sb Sputtering Power [W]	ρ [$\Omega\cdot\text{cm}$]	μ [$\text{cm}^2/\text{V}\cdot\text{s}$]	n [cm^{-3}]
13	27.235	1.89	1.2152×10^{17}
15	14.970	3.27	1.2766×10^{17}
17	15.105	5.75	0.7182×10^{17}
19	8.400	5.77	1.2878×10^{17}
21	10.115	4.31	1.4312×10^{17}

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