

Materials List for:

Making Record-efficiency SnS Solar Cells by Thermal Evaporation and Atomic Layer Deposition

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Materials

Name	Company	Catalog Number	Comments
Quartz wafer carrier	AM Quartz, Gainesville, TX		bespoke design
Sputtering system	PVD Products		High vacuum sputtering system with load lock
4% H ₂ S in N ₂	Airgas Inc.	X02NI96C33A5626	
99.5% H ₂ S	Matheson Trigas	G1540250	
SnS powder	Sigma Aldrich	741000-5G	
Effusion cell	Veeco	35-LT	Low temperature, single filament effusion cell
diethylzinc (Zn(C ₂ H ₅) ₂)	Strem Chemicals	93-3030	
Laser cutter	Electrox	Scorpien G2	Used for ITO shadow masks
ITO sputtering target (In ₂ O ₃ /SnO ₂ 90/10 wt.%, 99.99% pure)	Kurt J. Lesker	EJTITOX402A4	
Metallization shadow masks	MicroConnex		bespoke design
Electron Beam Evaporator	Denton		High vacuum metals evaporator with load-lock
AM1.5 solar simulator	Newport Oriel	91194	1,300 W Xe-lamp using an AM1.5G filter
Spectrophotometer	Perkin Elmer	Lambda 950 UV-Vis-NIR	150 mm Spectralon-coated integrating sphere
Calibrated Si solar cell	PV Measurements		BK-7 window glass
Double probe tips	Accuprobe	K1C8C1F	
Souce-meter	Keithley	2400	
Quantum efficiency measurement system	PV Measurements	QEX7	
Calibrated Si photodiode	PV Measurements		
High-throughput solar cell test station	PV Measurements		bespoke design
Inert pump oil	DuPont	Krytox	PFPE oil, grade 1514; vendor: Eastern Scientific
H ₂ S resistant elastomer o-rings	DuPont	Kalrez	compound 7075; vendor: Marco Rubber
H ₂ S resistant elastomer o-rings	Marco Rubber	Markez	compound Z1028

H ₂ S resistant elastomer o-rings	Seals Eastern, Inc.	Aflas	vendor: Marco Rubber
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