

Materials List for

# Solution-Processed, Surface-Engineered, Polycrystalline CdSe-SnSe Exhibiting Low Thermal Conductivity

Christine Fiedler<sup>1</sup>, Yu Liu<sup>1</sup>, Maria Ibáñez<sup>1</sup>

<sup>1</sup>Institute of Science and Technology Austria (ISTA)

## Corresponding Author

Maria Ibáñez

mibanez@ist.ac.at

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## Materials

Name	Company	Catalog Number	Comments
<b>Chemicals</b>			
1, 2-ethanedithiol	Thermo Scientific	75-08-1	Vaccum distilled
Absolute Ethanol	Honeywell	64-17-5	
Acetone (extra dry)	Acros	67-64-1	
Anhydrous ethanol	Thermofischer	64-17-5	
Cadmium oxide	Alfa Aesar	1306-23-6	
Ethylenediamine	Sigma-Aldrich	107-15-3	
N-methylformamide	Sigma-Aldrich	123-39-7	Vacuum distilled, stored over molecular sieves
Selenium	Sigma-Aldrich	7782-49-2	
Sodium borohydride	Sigma-Aldrich	6940-66-2	
Sodium hydroxide	Sigma-Aldrich	1310-73-2	
Tin chloride dihydrate	Thermo Scientific	L0025-69-1	
<b>Apparatus/Materials</b>			
Reduction adapter	Bartelt	9.011 755	
Adapter with NS stopcock	Bartelt	9.012 312	
Agate mortar and pestle	Bartelt	6204102	
Caliper	Sartorius	5007021150	
Carbon tape	Micro to Nano	15-000508	
Centrifuge tubes x 4	Sarstedt Ges.m.b.H.	62.547.254	50 mL
Condenser	Bartelt	6.203 028	
Crystallising dishes	Bartelt	7.021 089	
Graphite foil	Fisher Scientific	11326967	0.254 mm
Measuring cylinder	Bartelt	6.082 194	250 mL
Micropipette	Eppendorf	3123000063	Research plus 100-1000µL (GLP)
Quartz tube	Hansun Electric Technology Co. Ltd	500Dx 44 ID x 650 L, mm for DIY Tube Furnace	
Round-bottom flask 2-neck	Bartelt	4.008 387	500 mL

Round-bottom flask 3-neck	Lactan	E614.1	1000 mL
Rubber septum x 3	Bartelt	9.230 657	
Sand paper	RS Components OC	484-5942	1 sheet, 1200 grit
Schlenk line	Chemglass	CG-4436-03	
Separating funnel	Bartelt	9.203 325	250 mL
Magnetic stir bars, oval	Bartelt	9.197 592	
Magnetic stir bars, cylindrical	Bartelt	9.197 520	
Magnetic stir bars, octagonal	VWR	442-0345	
Succintillation vials x 4	Sigma-Aldrich	Z561754-1EA	20 mL
Succintillation vials x 1	Bartelt	9.003 482	4 mL
<b>Equipment</b>			
AGUS-Pecs Spark Plasma Sintering (SPS)	Suga CO., LTD.	AGUS-PECS	SPS-210Sx
Bruker D8 Advance X-ray Diffraction	Bruker		
Centrifuge	Eppendorf	Centrifuge 5810	
Cold press	Specac™	Atlas Manual 15T Hydraulic Press	
Density Meter	Bartelt	6263396	
Electric saw	Amazon		
FE-SEM Merlin VP Contact	Carl Zeiss	Merlin Compact VP	
Heating mantle 1000 mL	Bartelt	9.642 406	
Benchtop Temperature Controller	Cole-Parmer	Digi-Sense TC9600	
Linseis Laser Flash Analyser-LFA-1000	Linseis	LFA-1000	
Linseis LSR-3	Linseis	LSR-3/800	
Magnetic stirrer	Heidolph	MR Hei-Tec	
Tubular furnace	Hansun Electric Technology Co. Ltd	Compact split tube furnace	
<b>Software</b>			
DIFFRAC.COMMANDER	Bruker		Comes with the equipment
Laser Flash Lenseis-AproSoft v.3.01 c.001	Lenseis		Comes with the equipment
Laserflash	Lenseis		Comes with the equipment
Lenseis data evaluation	Lenseis		Comes with the equipment
LSR Measure	Lenseis		Comes with the equipment
LSRDistance	Lenseis		Comes with the equipment
WAVE LOGGER	Suga CO., LTD.		Comes with the equipment