

Materials List for:

Advanced Experimental Methods for Low-temperature Magnetotransport Measurement of Novel Materials

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Materials

Name	Company	Catalog Number	Comments
Cryogenic Limited 12 T CFMS	Cryogen Limited	CFM-12T-H3- IVTI-25	Magnetotransport system customized with modulated field magnet (step 4)
7270 DSP Lock-in amplifier	Signal Recovery	7270	lock-in amplifier for source/drain and voltage measurements (step 4)
GS200 DC Voltage/Current Source	Yokogawa	GS200	Voltage source for gate voltage application (step 4)
2636B System Sourcemeter	Keithley	2636B	Sourcemeter for source/drain and voltage measurements
DWL 2000 Laser Pattern Generator	Heidelberg Instruments	DWL 2000	Generate chrome mask for lithography of substrate location/alignment feature pattern (step 1.3)
Suss MicroTec MA6/BA6 Contact Aligner	Suss	MA6	Used for the lithography of substrate location/alignment feature pattern (step 1.4.12)
JEOL Direct Write Electron Beam Lithography System	JEOL	JBX 6300-FS	Perform high-resolution lithography of devices
Discovery 550 Sputtering System	Denton Vacuum	Discovery 550	Perform SiO ₂ sputtering (step 2.5)
Infinity 22 Electron Beam Evaporator	Denton Vacuum	Infinity 22	Perform Cr/Au deposition (steps 1.5 and 3.7)
Unaxis 790 Reactive Ion Etcher	Unaxis	Unaxis 790	Etch sample into Hall bar structure (step 3.4)
PMMA 495 A4	MicroChem	PMMA 495 A4	Polymer coating/electron beam mask for lithography (step 3.5.1)
PMMA 950 A4	MicroChem	PMMA 950 A4	Polymer coating/electron beam mask for sample dicing and lithography (steps 1.7.3, 3.3.1, and 3.5.2)
S1813 positive photoresist	MicroChem	S1813 G2	Positive photoresist (step 1.4.8)
LOR resist	MicroChem	LOR 3A	Lift off resist (step 1.4.3)
1:3 MIBK:IPA PMMA developer	MicroChem	1:3 MIBK:IPA	PMMA developer
MF-321 Developer	MicroChem	MF-321	Novolac positive photoresist-compatible developer solution (step 1.4.15)
Diglycidyl ether-terminated polydimethylsiloxane	Sigma Aldrich	SA 480282	For layered material stacking (step 2.6.1)
Polypropylene carbonate	Sigma Aldrich	SA 389021	For layered material stacking (step 2.6.2)