

# SPUTTERING TARGETS



Plasma Technology Limited PTL offers pure elements, compounds, alloys, ceramics, intermetallics, and mixtures with high purities and quality for R&D and production applications. Products are widely used in electronics, semiconductor, flat panel display, magneto-optical recording medium, solar photovoltaic and functional coating etc.

We also provide in-house sputter target bonding services by either standard and custom backing plate or copper foil bonding.





# **SPUTTERING MATERIALS TABLE**

Target Name	Purity	Target Name	Purity	Target Name	Purity	Target Name	Purity
Ag	99.99%	Dy2O3	99.99%	MgO	99.99%	SnZn	99.95%
Al	99.999%	Er	99.95%	Mn	99.99%	Sr	99.99%
AlCu	99.99%	Er2O3	99.99%	MnPt	99.99%	SrO	99.99%
AlSi	99.99%	Eu	99.99%	MnIr	99.95%	SrRuO3	99.99%
Al2O3	99.95%	Eu2O3	99.95%	MnO2	99.99%	SrTiO3	99.99%
Al2S3	99.95%	Fe	99.99%	Мо	99.95%	Ta	99.99%
AlN	99.99%	FeMn	99.95%	Mo2C	99.99%	Ta2O5	99.99%
AlSi	99.99%	FePt	99.95%	MoO3	99.99%	TaC	99.99%
As2Se3	99.95%	Fe20Ni80	99.95%	MoS2	99.99%	TaN	99,99%
As2Te3	99.95%	Fe2O3	99.99%	MoSi2	99.999%	TaSi2	99,99%
Au	99.99%	Fe2Si	99.95%	NaNbO3	99.999%	Tb	99,99%
AuGe	99.99%	Fe3O4	99.99%	Nb	99.99%	Tb2O3	99.99%
AuPd	99 99%	FeMn	99 95%	Nb2O5	99 99%	Tb407	99 99%
AuSn	99.99%	FeAl	99.95%	NbC	99.99%	Te	99,99%
AZO	99 95%	FeCo	99.9%	NbN	99 99%	Ti	99 99%
B	99.9%	FeCoSiB	99.95%	NhSe2	99 99%	Ti2O3	99 99%
B4C	99.95%	FeHf	99.95%	NhTi	99.95%	TiAl	99.99%
Ba	99.9%	FePO4	99 99%	Nd	99 99%	TiB2	99.99%
BaO	99.99%	FePt	99.95%	Ni	99.9%	TiC	00.00%
BaSrTiO	99.95%	Ga	99.99%	NiCr	99.99%	TiN	99.95%
BaTiO3	99.05%	Ga2O3	99.05%	NiFe	99.05%	TINTIO2	99.95%
Bi	90 00%	GaN	00 000/2	NiV	90.00%	TiO	90.95%
Bi2O3	90 000/2	GaTi	00 050/2	Ni2Ga3	90.05%	TiO2	90.95%
Bi4Ti3O12	00 050/	Gd	00 000/	Ni2MnGa	00 050/	TiO2Ee	00 050/
BiFeO2	77.73% 00.000/	Gd2O3	77.77% 00.050/	NiCoCrAIV	77.73% 00.050/	TiO2Nb	77.73% 00.050/
Direus	99.99%	CDC	99.93%	NICOCIAII	99.93%	TIOZINU	99.93%
DI2505	99.93%	GDC	99.93%	NICI NICI-SI	99.99%	TiW	99.99%
BIV04	99.95%	Ge	99.99%	NICISI	99.95%	11w	99.99%
BN	99.95%	GeCr	99.95%	Nife	99.99%	V	99.99%
C	99.999%	GeO2	99.95%	NIO	99.99%	V203	99.99%
Ca	99.95%	Gesb	99.99%	N1S	99.9%	V205	99.99%
CaF2	99.99%	GeSe2	99.95%	Nili	99.99%	VC	99.99%
CaHfO3	99.95%	GIZO	99.95%	Os	99.99%	VN	99.99%
CaO	99.99%	GZO	99.99%	Pb	99.99%	V02	99.99%
Cd	99.99%	Hf	99.99%	PbF2	99.99%	V05	99.95%
Cd2SnO4	99.99%	HfO2	99.99%	PbO	99.99%	W	99.99%
CdO	99.99%	Но	99.95%	PbSr2TiO7	99.95%	WTi	99.95%
CdS	99.95%	Ho2O3	99.95%	Pble	99.99%	WC	99.99%
CdSn	99.95%	IGZO	99.95%	PbTiO3	99.95%	WO3	99.99%
CdTe	99.95%	In	99.999%	PbZrO3	99.999%	WSi2	99.95%
Ce	99.95%	In2O3	99.99%	Pd	99.95%	Y	99.99%
CeO2	99.99%	Ir	99.99%	Pr	99.95%	Y2O3	99.99%
Co	99.95%	IrMn	99.95%	Pr6O11	99.99%	Yb	99.99%
CoNi	99.99%	IrO2	99.99%	Pt	99.99%	Yb2O3	99.95%
Co2Fe	99.95%	ITO	99.99%	PZT	99.99%	YBa2Cu3O7	99.95%
Co3O4	99.99%	IZO	99.99%	Re	99.95%	YBCO	99.95%
CoCrHf	99.95%	La	99.99%	Rh	99.9%	YIG	99.99%
CoCrPt	99.95%	LaO7SrO3MnO3	99.95%	Ru	99.9%	YSZ	99.95%
CoFe	99.95%	La2O3	99.99%	RuO2	99.9%	Zn	99.99%
CoFe2O4	99.99%	LaB6	99.99%	Sb	99.95%	ZnAl	99.95%
CoFeB	99.99%	LaF3	99.99%	Sb2Se3	99.99%	ZnCo	99.95%
CoFeO4	99.95%	LaGaO3	99.95%	Sb2Te3	99.99%	ZnMgO2	99.95%
CoPt	99.95%	LaNiO3	99.95%	Sc	99.95%	ZnO	99.95%
CoTaZr	99.95%	Li2O	99.99%	Se	99.99%	ZnOGa	99.95%
CoTb	99.95%	Li3PO4	<u>99.95</u> %	Si	99.999%	ZnOGa2O3	99.95%
Cr	99.95%	Li4Ti5O12	99.95%	SiGe	99.99%	ZnOSnO2	99.95%
Cr2N	99.95%	LiCoO2	99.99%	Si3N4	99.95%	ZnS	99.9%
Cr2O3	99.99%	LiF	99.99%	SiC	99.99%	ZnSCdS	99.95%
Cr3C2	99.95%	LiFePO4	99.99%	SiCr	99.95%	ZnSe	99.99%
CrO3	99.95%	LiMn2O4	99.99%	SiO	99.99%	ZnTe	99.99%
CrSi2	99.95%	LiNiO2	99.99%	SiO2	99.995%	Zr	99.99%
Cu	99.99%	LSCF	99.99%	Sm	99.99%	ZrB2	99.95%
Cu2O	99.99%	Mg	99.99%	Sm2O3	99.99%	ZrC	99.95%
Cu2S	99.99%	Mg2Si	99.99%	SmNiO3	99.95%	ZrN	99.95%
Cu2ZnSnS4	99.99%	Mg2Sn	99.95%	Sn	99.99%	ZrO2	99.99%
CuGa	99.95%	Mg3Bi2	99.95%	SnTe	99.99%	ZrO2Y2O3	99.95%
CuO	99.99%	MgB2	99.99%	SnO2	99.99%	SnTiO3	99.95%
CuO2	99.95%	MgF2	99,99%	SnTiO3	99.95%	ZTSO	99.95%
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Plasma Technology Limited PTL provides a wide variety of high quality magnetron sputter deposition systems to meet customers' thin film deposition requirements.

Our systems use PTL magnetron sputter sources with our field proven fully modular magnetic array and cross-contamination prevention design. Systems come with complete pumping packages, vacuum gauges, MFCs, pneumatic valves, closedloop feedback for constant pressure control, power distribution box, frame, electronic racks, water and air manifolds, and safety interlocks.

Our systems can be operated manually or via computer control. Substrate rotation stage includes heating to temperatures of 900°C, 50mm Z-distance adjustment to provide a wide range of deposition rates, RF/Pulse/DC bias for cleaning and assisting deposition.

# Magnetron Sputtering Deposition Systems



Load Locked Magnetron Sputtering System Includes five 2" PTL magnetrons with in-situ tilt, RF biased rotated 900°C substrate heater. Includes three MFCs and full computer control.



**Magnetron Sputtering System Interior** PVD sputtering system with six 2" PTL con-focal magnetrons with in-situ tilt & pneumatic shutters Systems can be configured for sputter-up, down, or sideways with confocal or normal incidence source arrangements. The integrated load lock provides quick sample turnaround, so the user can spend more time exploring properties and less time making samples.

PTL sputter systems provide users with a wide range of capabilities for the growth of new materials.

All system data is stored in easily accessed look-up tables. Deposition recipes can easily be written for a single array for automated film growth, ensuring consistency of results. The system is touch-screen plus keyboard-mouse computer controlled and provide multiple user levels access for data logging of all relevant deposition parameters.

We can provide a standard or fully customized system depending on your application.

# MAGNETRON **SPUTTERING SYSTEMS**



Sputter-Up PVD System 150 mm wafers, four 3" PTL confocal Magnetrons, Z-stage, 850°C heater, RF bias, 0-30RPM rotation three MFCs and full computer control.



#### Stable Glow Discharge Sputtering

PTL magnetron sputter sources with our field proven fully modular magnetic array and cross-contamination prevention design, ensuring stable plasma glow discharge and consistency of depositions.



#### Load Locked Sputter-Up System

100 mm wafers, six 2" PTL confocal Magnetrons, Z-stage, 850°C heater, RF bias, 0-30RPM rotation three MFCs, loadlock and full computer control.



#### **Multilayer Stacks by PVD Systems**

Adjusting the magnetron to substrate distance, control the output power of magnetron sputtering power supply as well as the deposition time, one can easily to achieve a controllable multi layer thin film



