Pilot and volume production PLD

Solmates' equipment is the ultimate proof that PLD has now reached the maturity level of High Volume Manufacturing. This system is designed for low maintenance and low cost of ownership. Equipped with automated wafer handling it offers high stability and run- to-run consistency at commercial throughput and yield.

The **pilot and volume production Pulsed Laser Deposition** series accelerate the entry of novel material into commercial products. Alternative deposition processes are required in order to meet upcoming technology nodes in power.

- Designed for stability, reliability and low maintenance
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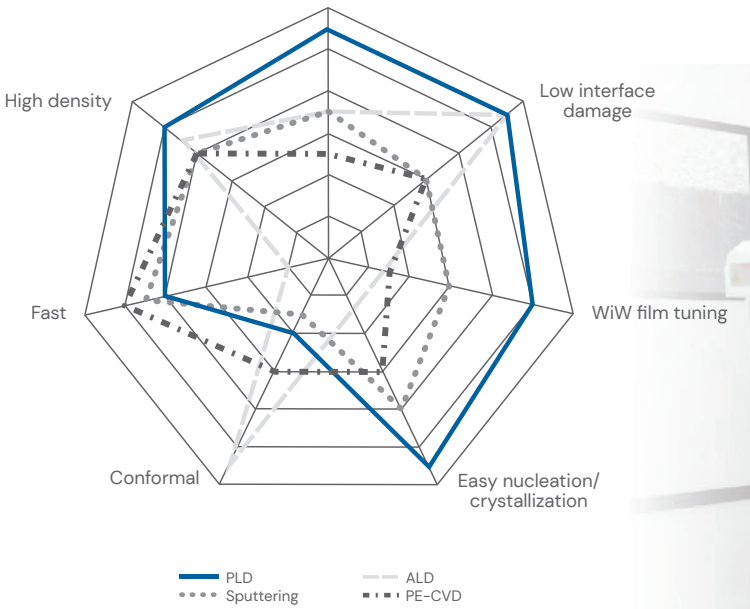
- Low cost of ownership, commercial throughput and yield
- Patented (time-of-flight) particle filter technology
- Compact target size and high target utilization
- Suitable for ballroom and bay-chase cleanrooms
- Human machine interface via touch screen
- SEMI compliant software host interface
- SEMI S2 compliant and CE certified: interlocks and safety features
- Ease of use for daily operation
- Automated wafer handling with 1 or 2 cassette loadports
- Integration to any mainframe

Together with you Solmates invests in the production of high quality layers. A service team of highly skilled process operators is available for training, maintaining and trouble-shooting on your desired process. Whether it concerns processes on our high-volume production tool or on one of our R&D platforms, Solmates ensures a reliable process.



Solmates' unique solution for stable and cost effective thin film manufacturing

SOLMATES
THIN FILM EQUIPMENT

Global service network, proven track record and process development support for your manufacturing needs

Equipment

Substrate dimensions	Up to Ø300 mm
ubstrate shape	Round and square
Laser	KrF excimer laser
Beam delivery	Complete integrated optics
Process temperature	RT – 800°C
Substrate temperature-uniformity	<2%
Process gasses	O_2, Ar, N_2 – others on request (forming gas)
Particles	Active particle filtering technology

Process specifications

Thickness uniformity	
W / W	< 2 % 1s
WtW / RtR	< 1.5 % 1s
Composition uniformity	< 2 % 1s

Options

- Host interface
- Target library loadlock

Markets	Application / functionality	Materials
OLED & LED	Anti-reflection, TCO's, barriers, passivation	Al_2O_3, AZO, HfO_2, IGZO, ITO, MgO, Mg-ZnO, Ta_2O_5, ZnO, ZrO_2
MEMS & NEMS	Sensing, actuation, acoustics	Al_2O_3, $BiFeO_3$, KNN, $LaNiO_3$, $PbTiO_3$, $Pb(Zr,Ti)O_3$, PMN-PT, $SrRuO_3$ $LiNbO_3$, ZnO, AlN, Sc:AlN, HfO_2
CMOS & power IC	High-k, passivation, barriers, spintronics	AlN, Al_2O_3, CeO_2, HfO_2, MgO, PZT, $SrTiO_3$, TiN, ZrO_2
Energy	SOFC, PV, batteries, thermoelectrics	YSZ, CIGS, Gd-CeO_2, ITO, $(La,Sr)(Co,Fe)O_3$, Li_xM-nO_2, Li_xCoO_2, Na_xCoO_2, $Zn_{1-x}Al_xO$
Photonics	Electro-optics, IR-detection, waveguides, quantum computing, Pockels	Al_2O_3, $BaTiO_3$, ITO, $LiNbO_3$, PLZT, Y_3Fe5O_{12}, ZnO
Memory	MRAM	$BiFeO_3$, $CoFe_2O_4$, CrO_2 , LSMO, $MnFe_2O_4$, MnO
Conductors	Electrodes, reflectors, alloys, super-conductors, metal-insulator transition, oxide electrodes	$Ba(Bi, Pb)O_3$, $LaNiO_3$, $SrRuO_3$, $SrLaCuO_4$, V_2O_3, Yba_2Cu_3O7-x, ITO
Epitaxy	templates, superlattices, 2D-materials	CeO_2, GaN, $LaAlO_3$, MgO, $SrTiO_3$, TiN, YSZ, MoS_2
RF & 5G	SAW, BAW, discrete devices (varactors, beam-steering, high-K)	AlN, BN, $BaTiO_3$, Ba1-xSrxTiO3, Sc:AlN, $LiNbO_3$

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