

NANO VAK

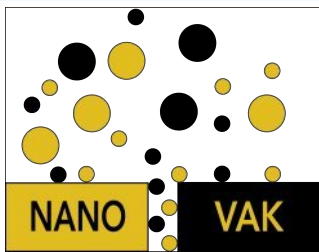
NANO VAK® offers global products



Thermal & Sputter Combined Systems

Box type Physical Vapor Deposition system, based on prismatic/cylindrical vacuum chambers have 2 thermal and/or 1-4 DC-RF sputter sources (NVTS) enabling the user to do full co-evaporation. Multi-layered thin films of different materials can be prepared by NVTS systems. NANO VAK® Combined System can be tailored to fit user desires in order to produce multilayered, nanosize metallic, oxide, carbide or nitride films, such as Si, Al, Ti, SiO, WO, BaF₂, MgF₂, TiO₂, Si₃N₄, SiO₂, TiN.

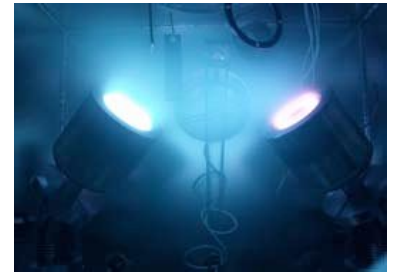
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Thermal & Sputter Combined Systems



- Prismatic / cylindrical vacuum chambers made of SS304L. Feather-touch, electro-polished, clean surfaces. Standard 1", QF, CF, ISO ports as desired
- Internal lighting & baking up to 100 °C. UV-blocking, observation window & rotatable shutter
- Easily upgradable to add on additional thermal and sputtering sources
- RF Power supply, 13.6 MHz, 300 - 1200 W
- DC Power supply, 0 - 1000 V DC, 2000 W
- 10^{-8} Torr base pressure level, 10^{-7} Torr vacuum level in one hour, for loaded system
- Turbomolecular & Mechanical pump, cryo and dry pump as desired, high pumping speed for low pump-down time. Wide range ($1000 - 10^{-9}$ Torr) vacuum control and measurement
- Ability to fix pressure precisely to desired values for plasma generation (1 - 100 mTorr)
- Optional 50 - 700 °C PID controlled sample heating with ± 1 °C sensitivity, 1 - 10 cm sample attachments, 3", 4", 6" wafer loading ability
- 2 - 30 rpm sample rotation unit, continuous speed adjustment
- Optional ICP, CCP, DC - RF sample plasma cleaning unit
- Automatic closed loop water cooling, interlock controlled, automatic on-off process control to prevent premature use of power without water cooling
- $0,1 \text{ \AA/s}$ dual-channel precision thickness-rate measuring unit with 1 - 4 QCM's
- Four 10V - 250A, 2x2 channel, co-evaporation thermal sources. Proprietary boxed source design to prevent cross contamination, easy replacement of boats/baskets
- DC/RF magnetron sputtering sources (1", 2", 3"). Flex head, 85 mm diameter, magnetic/nonmagnetic material sputtering
- Digital mass flow meter controlled gas inputs (Ar, N₂, O₂, He, CH₄, H₂), easy mix of gases, 0.1 SCCM sensitivity
- Throttle, vent and isolation valves, The chamber remains under vacuum with an isolation valve, when not in use
- 1.5 hour experiment cycle-time, possibility for 4 - 6 experiments per day
- L120xW80xH180 cm footprint, lockable wheels. Easy passage through standard doors
- All system functions are controlled by touch screen LabVIEW control program. Full panel control is available when the program is turned off
- One year warranty for design, materials and workmanship