

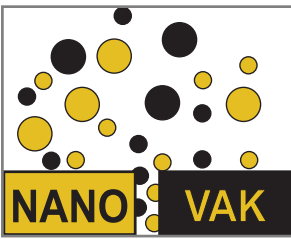
# NANOVAK

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## NVTS-400-2TH2SP Thermal & Sputter Combined System



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. 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, BaF<sub>2</sub>, MgF<sub>2</sub>, TiO<sub>2</sub>, Si<sub>3</sub>N<sub>4</sub>, SiO<sub>2</sub>, TiN.

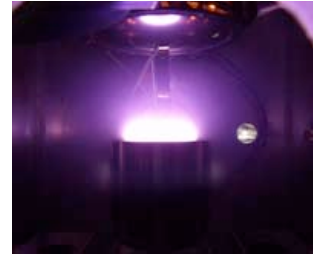


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## Thermal & Sputter Combined System



- Fully automatic computer touch screen panel control with real time LCD displays
- Prismatic / cylindrical vacuum chamber made of SS304. 40x40x40 cm in size. Feather-touch clean, electro-polished surfaces
- UV-blocking, front observation window, rotatable shutter
- Standard 1", QF, CF, ISO ports as desired. Easy upgrade to add on additional thermal and sputtering sources
- Internal lighting and baking unit with internal baking up to 125°C
- RF Power supply, 13.6 MHz, 300 - 1200 W
- DC Power supply, 0 -1000 V DC, 2000 W
- Turbomolecular + Mechanical pump,  $2 \times 10^{-6}$  Torr vacuum level in 30 minutes.  $10^{-7}$  Torr vacuum level in one hour, for fully loaded system
- Wide range ( $1000 - 10^{-9}$  Torr) vacuum control and measurement, ability to fix pressure precisely to desired values for plasma generation (1 - 100 mTorr)
- 50-300 °C PID controlled sample heating,  $\pm 1^\circ\text{C}$  sensitivity, 1-10 cm sample attachments, 2", 3", 4" wafer loading ability
- 2-30 rpm sample rotation unit, continuous adjustment ability, panel-PC control
- Automatic closed loop water cooling, interlock controlled, automatic on-off process control to prevent premature use of power without water cooling
- 0,1Å/s dual-channel precision thickness-rate measuring unit with 2 QCM's
- Four 10V - 200A, 2x2 channel, sequential thermal sources. Ability to prevent cross contamination, easy replacement
- Two, 2" DC/RF magnetron sputter sources. Flex head, 84 mm diameter, magnetic/nonmagnetic material sputtering
- Digital Mass flow meter controlled gas inputs (Ar, N<sub>2</sub>, O<sub>2</sub>), easy mix of gases, 0.1 SCCM sensitivity, panel or PC control
- 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
- 75x120 cm footprint, lockable wheels. Easily passes through the standard doors
- One year warranty for design, materials and workmanship