Q Series

Sputter Deposition Systems

Magnetic Materials

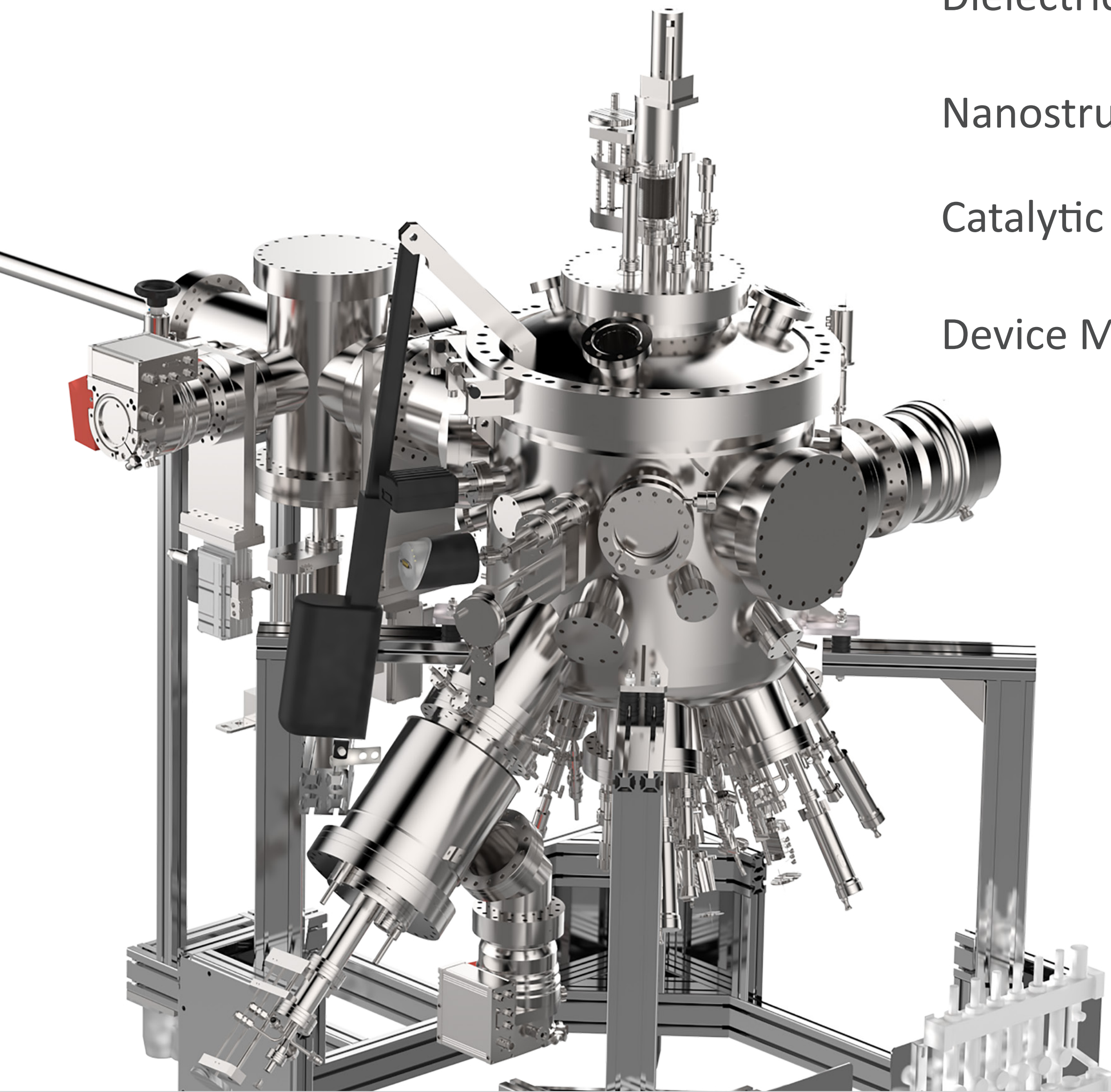
Semiconductor Films

Dielectric Materials

Nanostructured Films

Catalytic Materials

Device Metallisation



MANTIS

Partnered with SIGMA Surface Science

Specifications

Model	Q500-ORIGIN	Q500-FLEX	Q500-CREATOR
Chamber diameter	500mm (20") – optional water cooled chamber walls		
Number and size deposition ports	4 x DN100CF (6" O.D.) confocal 1 x DN150CF (8" O.D.) central	6 x DN100CF (6" O.D.) confocal 1 x DN150CF (8" O.D.) confocal 5 x DN40CF (2 ¾" O.D.) confocal 1 x DN150CF (8" O.D.) central	8 x DN100CF (6" O.D.) confocal 1 x DN150CF (8" O.D.) central
In-situ analysis ports	2 x DN40CF (2 ¾" O.D.) QCM, RGA 1 x DN63CF (4.5" O.D.)	2 x DN100CF (6" O.D.) e.g. RHEED 4 x DN40CF (2 ¾" O.D.) Reflectance (e.g. Ellipsometry) 2 x DN40CF (2 ¾" O.D.) QCM, RGA 1 x DN63CF (4.5" O.D.)	2 x DN100CF (6" O.D.) e.g. RHEED 4 x DN40CF (2 ¾" O.D.) Reflectance (e. g. Ellipsometry) 2 x DN40CF (2 ¾" O.D.) QCM, RGA 1 x DN63CF (4.5" O.D.)
Chamber access	Dual differentially pumped o-ring sealed hinged top flange (automatic lift option).	Dual differentially pumped o-ring sealed hinged top flange (automatic lift option). Full UHV compatible COF wire sealed top flange.	Dual differentially pumped o-ring sealed hinged top flange (automatic lift option). Full UHV compatible COF wire sealed top flange.
Chamber bakeout (optional)	Heater tapes	Heater tapes or full bakeout tent (*)	Heater tapes or full bakeout tent (*)
Default pumping arrangement	355 l/s. turbo pump 6.6 cbm/h roughing pump	685 l/s. turbo pump 14 cbm/h roughing pump	685 l/s. turbo pump 14 cbm/h roughing pump
Ultimate base pressure	<5* x 10^{-8}mbar (without bakeout) <5* x 10^{-9}mbar (with bakeout heater tapes)	<5* x 10^{-8}mbar (without bakeout) <1* x 10^{-9}mbar (with bakeout tent)	<5* x 10^{-8}mbar (without bakeout) <1* x 10^{-9}mbar (with bakeout tent)
Sample size	FLAG-style (15x18mm) 2" wafers 4" wafers	FLAG-style (15x18mm) 2" wafers 4" wafers 6" wafers	FLAG-style (15x18mm) 2" wafers 4" wafers 6" wafers
Sample loading	From/to load-lock From/to cluster (transfer) systems From/to SIGMA Surface Science analysis systems (SPM/ESCA)		
Sample storage	Sample storage cassette in load-lock for up to 5 samples		
Software	TITANIUM automation software		

(*) COF wire sealed top flange only.

	Q500-ORIGIN	Q500-FLEX	Q500-CREATOR
CUSP Sputtering Source	Max. 5 sources with up to 3" targets	Max. 7 sources with up to 3" targets	Max. 9 sources with up to 3" targets
NanoGen Nanoparticle Source	No	Yes	No
MATS/RFM Atom/Ion Source	Yes	Yes	Yes
Thermal Boat Source (TBS)	Yes (instead of the central CUSP Sputtering Source)	Yes (instead of the central CUSP Sputtering Source)	Yes (instead of the central CUSP Sputtering Source)
Mini E-Beam Evaporator	Ports shared with Sputtering Sources	Max. 5 QUAD-EV Sources	Ports shared with Sputtering Sources
ComCell Effusion Cell Sources	Ports shared with Sputtering Sources	Ports shared with Sputtering Sources	Ports shared with Sputtering Sources
Thermal Gas Cracker Source (MGC)	Ports shared with Sputtering Sources	Ports shared with QUAD-EV Sources	Ports shared with Sputtering Sources

For further information please contact:
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