

MC-050

2-inch MOCVD / RTP system In-situ annealing capability

APPLICATIONS

**Metal and alloys, Oxides, Nitrides, III-V, II-VI,
Nanotubes and nanowires, ...**

- Semiconductor: SiO_2 , HfO_2 , Ta_2O_5 , Cu, TiN, TaN
- Nitride and alloys: GaN, AlN, GaAs, GaAsN...
- High k Dielectric: SrTiO_3 , BaTiO_3 , $\text{Ba}_{(1-x)}\text{Sr}_x\text{TiO}_3$ (BST)
- Ferroelectric: SBT, SBTN, PLZT, PZT,...
- Superconductor: YBCO, Bi-2223, Bi-2212, TI-1223, ...
- Piezoelectric: $(\text{Pb}, \text{Sr})(\text{Zr}, \text{Ti})\text{O}_3$, Modified Lead Titanate
- Colossal Magneto Resistance
- Nanotubes and nanowires
- Thermal coatings
- Mechanical coatings
- Optics
- Etc...

SPECIFICATIONS

The Annealsys MC050 is a 2-inch DLI-MOCVD / RTP reactor especially developed to meet the requirements of research and development units.

The MC050 allows doing deposition of oxides, nitrides, metals, III-V and II-VI on various types of substrates by MOCVD using diluted solid and liquid organometallic precursors.

The MC050 system can be provided with one or several direct liquid injection (DLI) vaporizers allowing the widest range of utilization of precursors for development of new materials.

Glove box loading version is available as an option.

The infrared lamp heating system provides in-situ annealing process capability inside the deposition chamber.

PERFORMANCE CHARACTERISTICS

- Temperature range: RT to 1200 C
- Up to 6 vaporizers
- Vacuum range: Atmosphere to 10^{-3} Torr



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MC-050

General features

Maximum substrate diameter	2-inch (51 mm)
Process chamber	Quartz tube with water-cooled stainless steel flanges
Heating	Halogen lamps
Temperature control	Thermocouple temperature control Digital PID temperature controllers
Vacuum, gas and liquid	Purge gas line with needle valve Up to 6 process gas lines with mass flow controllers Up to 6 vaporizer units selected function of liquid precursors Custom liquid panel depending on the application Vacuum valve and vacuum gauge Optional vacuum rotary pump Optional pressure control with throttle valve
Control	Full PC control
Facilities	Electricity: 3x400V+N+Gr or 3x220V+Gr, 50/60 Hz Power: 20 kW Water: 2 to 6 bars, pressure drop 1 bar, 8 l/mn Compressed air: 6 bars (valve actuation) Process gas fittings: Swagelok ¼ (Optional VCR)
Dimensions and weight	Width: 955 mm Depth: 1812 mm Height: 1604 mm Weight: 400 kg

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