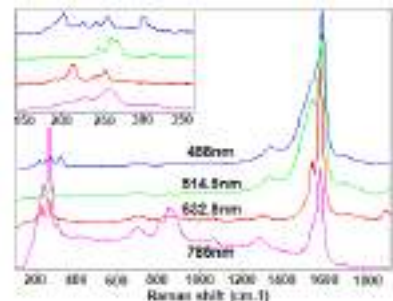


Thermal Chemical Vapour Deposition & High Vacuum Annealing System

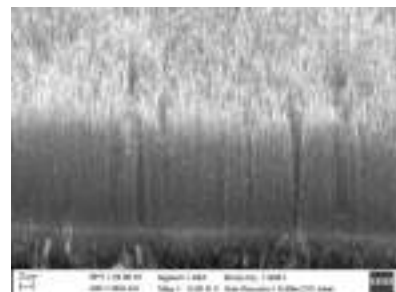


Features:

- Customized System Design
- Single and Multi Heating Zone Furnace
- Multiple Gas Channels
- Manual and/or Automated versions
- Customized Water cooling flanges for better cooling

Application:

- Synthesis of Carbon Nano-materials (e.g CNF, CNT, Graphene), Metal Oxides (e.g ZnO) etc.
- High Vacuum Annealing



We are both developer and suppliers of vacuum deposition process systems and believe in providing the best solutions to our clients through modular approach and customization. We meet up with every requirement of our clients with high quality at cost effectiveness.

We provide customized Thermal Chemical Vapour Deposition (CVD) systems for the synthesis of nano materials like Carbon Nano-tubes, Graphene, Metal Oxides, Sintering of nano-materials in Vacuum or specific ambient. The Thermal CVD system consists of:

1. Split Tube Furnace



Specifications:

Furnace type	High quality Research Grade Furnace
Furnace Material	Ceramic Alumina Fiber
Tube Material	RCA Tube , Quartz Tube, Alumina Tube
Tube Size	60mm, 80mm , 100 mm OD x 1200mm L
Max/Working Temperature	1200°C to 1700°C
Heating element type	Kanthal, SiC/MoSi2
Temperature controller	Programmable temperature controller.
Temperature accuracy	+/-1°C
Heating zone length	150 mm to 450mm (Customized)
Temperature Controller	+/-1°C with display of set and actual temperature
Vacuum sealing & flange kit	Customized Stainless Steel Water Cooling Flanges
Safety indication	EMO, Interlocks
Any noise and vibration	No
Over Temperature Protection controller with manual reset and temperature display with separate thermocouple	Yes

2. Vacuum System



Specifications:

A. Pumping System

Vacuum pump type	Rotary Pump, Turbo Molecular Pump(TMP)
Ultimate Vacuum	5 X 10 ⁻³ Torr (10 ⁻⁶ Torr With TMP)
Vacuum leak integrity	~ 5 mTorr/min leak rise rate
Vacuum Gauges	Wide range gauges (Atm to 10 ⁻⁹ Torr) Pirani gauge (Atm to 10 ⁻³ Torr)
Vacuum seals	Viton , Kalrez
Valves	Solenoid, Pneumatic , Diaphragm, Angle, Gate Vales

B. Gas Supply System with MFC

MFC 1 flow rate	5 -200 sccm*
MFC 2 flow rate	5 -200 sccm*
MFC 3 flow rate	5 -200 sccm*

*Gases: Ar, N2, H2, O2, CH4, C2H2

Response rate <1 sec

Controllers & Displays

*Gas type, flow rate and nos of MFCs can be customized
as per requirements

C. Closed Loop Automatic Pressure Control

Self contained closed-loop electronic system

Accuracy: ±0.25% full scale

Full Scales Pressure Range: 2 - 1000Torr

Seals: Viton

Fittings: Swagelok ¼" compression fittings

3. Operation:

The Thermal CVD system can be operated in three modes:

- Manual Mode
- Semi-Auto Mode*
- Automated Mode*

*Using PLC based Control

4 Electrical & Control Panel:



Electrical power distribution box is embedded inside the TCVD system that supplies, distributes and controls power for the complete TCVD and High Vacuum Annealing system.



5. System Rack:

System comes with a base and control integrated rack.

6. Accessories:

	A. Chiller	
	Water Tank	8 - 20 Ltr
	Max. Water Flow Rate	5 - 20 Ltr/Min
	Protection	Protection from Over Flow
	Power Supply, Current	AC 1P 220V 50Hz, 0.45 A
	B. Chamber Tube & Water Cooled Flanges	
	60 mm, 80 mm, 100 mm Quartz, Alumina, RCA Tube	
	Water Cooled Flanges for the appropriate tube	
	Furnace handle hook	
	High temperature crucible	
	Protective gloves	

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TechnoS mission is to build a services excellence centre in India to support the spread of High Technology Products, Scientific Process Equipments and Analytical Tools. Our business philosophy is to bridge Principal Suppliers and End-users to serve both the ends and create "High Quality with Cost Efficiency".



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