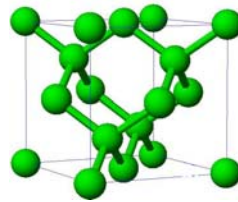
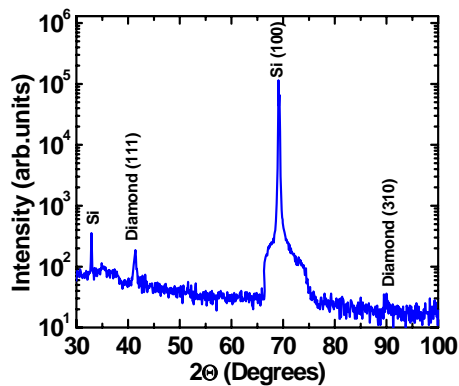


Blue Wave Semiconductors' BW1000 Hot Filament CVD System

Single 2"/4" Wafer Deposition System for R&D

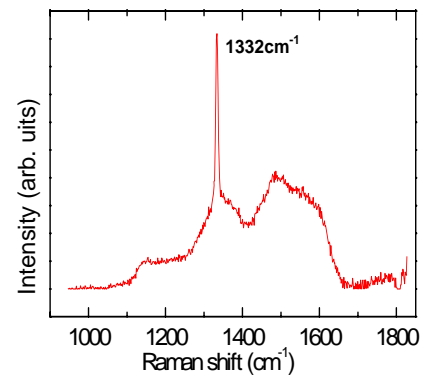


The Blue Wave Semiconductors' BW1000 HF CVD system provides high quality polycrystalline (MCD, NCD) diamond film synthesis on single 2" (or 4" optional) wafer substrates. It's basic system configuration and wide range of available options allow for excellent and repeatable uniform growth processes for diamond, CNT and related film synthesis in an R&D environment. The BW1000 is a very affordable, versatile and user friendly, turnkey solution for the researcher new to diamond film synthesis or an expert wanting to expand CVD integration with other deposition techniques for advanced research.



Applications

- Nanocrystalline diamond
- Microcrystalline diamond
- Doped conductive films
- CNT



Blue Wave Semiconductors' BW1000 Hot Filament CVD System Specification

- Accommodates large substrates 2" in diameter (4" optional)
- Stainless steel chamber, water-cooled with 6 ports
- Multiple large ports for viewing and monitoring process
- Adjustable multiple filament mounts with easy access for replacement
- Manual linear motion drive for sample transfer under hot filament after carburization
- Standard vacuum gauge with display
- Vacuum controls for fine pressure adjustment with mechanical pump for 10^{-3} Torr base pressure or 10^{-7} Torr with optional turbo pump and controller
- Precise gas flow with Mass Flow Controllers for three gases
 1. CH₄ (10sccm)
 2. H₂: (100sccm)
 3. Ar: (100sccm) for purge or user specified gas
- Gas control panel
 - MFC Manual Mode Selection
 - Course and Fine flow adjustment
- Easy access and connection for gas, electrical and cooling water facilities
- Robust steel enclosure with 19" wide panel mounting for system components and options.

Standard Options

(Allows wide range of user customized enhanced process capability)

- Independently closed-loop controlled substrate heater (850°C)
- Substrate rotation (up to 10rpm max. for highly uniform deposition)
- 4" diameter wafer/substrate
- Motorized control to adjust filament-substrate stage separation
- DC substrate bias
- Additional MFCs for B-doping, or user specified
- Load-lock with gate valve and easy sample transfer from load-lock chamber to CVD chamber
- In-situ metrology: RGA, OES and Pyrometer
- Computerized Recipe Control (Labview)