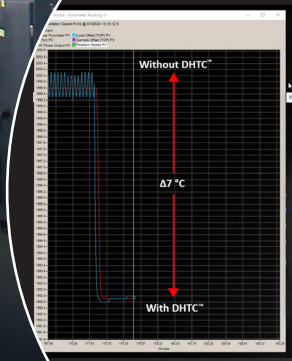
SiC Process Equipment for High Power Electronics

CVD Equipment Corporation

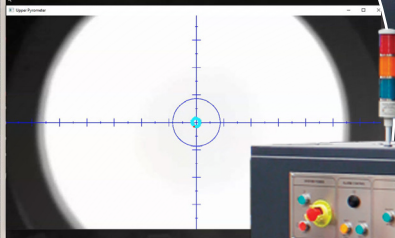
PVT200™ Physical Vapor Transport Systems

200 mm SiC Crystal Growth Solution

NEW Dynamic Hotzone Temperature Control™ (DHTC) Option



Patent Pending



Yield Improvement for SiC Crystal Growth by Optimizing Temperature Measurement & Control

CVD Equipment Corporation

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PVT200™ - Physical Vapor Transport Systems

CVD Equipment Corporation's PVT200™ Physical Vapor Transport systems have been specifically developed using our proprietary equipment technology with the goal of increasing performance and controls for large-scale manufacturing.

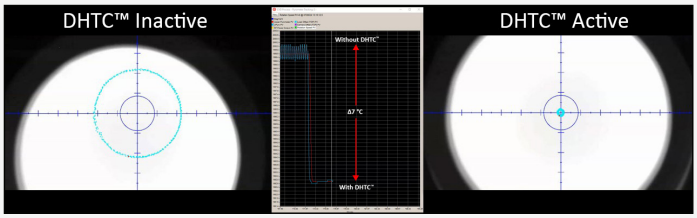
The PVT200™ provides exceptional process parameter control, repeatability and system to system matching for growing 200 mm diameter SiC boules. For physical vapor transport, temperatures up to 2,500 °C at +/- 0.5 °C are achieved for the sublimation of polycrystalline SiC source material and SiC crystal growth. CVD Equipment's PVT systems offer this exceptional temperature control in both steady state and ramp conditions. It is our reactor design and control system architecture that allows for this precise control of thermal gradients for optimal SiC boule growth.

Features and Options

- Exceptional Process Parameter Controls for Steady State & Ramp Conditions
  - Temperature Control +/- 0.5°C
  - Pressure Control +/- 0.5%
- Run-to-Run Repeatability
- System-to-System Matching
- Standard & Custom Coil Designs
- Custom Quartzware
- Hot Zone Automatic Loading Handler
- Crucible Centering
- Low Pressure Turbo Pump Option
- Dual Video Pyrometer, Top & Bottom Temperature Measurement & Control
- DHTC™ for Consistent Temperature Measurement & Yield Improvement
- MES Compatible
- Compact Footprint
- Typical 6 Month Delivery ARO

NEW Dynamic Hotzone Temperature Control™

Yield Improvement for SiC Crystal Growth by Optimizing Temperature Measurement & Control for 200 mm & 150 mm SiC Physical Vapor Transport Systems



Benefits

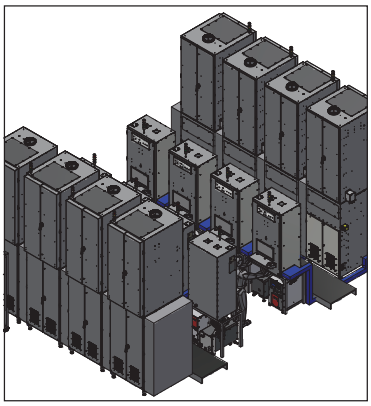
- Improved within Run, Run-to-Run & System-to-System Temperature Measurement Consistency
- Minimizing Impact of Misalignment from Hotzone Degredation, Assembly & Loading

Features & Options

- Video Processing Software & Mechanical Hardware for Temperature Measurement Accuracy & Dynamic Temperature Measurement Position Tracking
- Automated Pyrometer Tracking & Alignment to Hotzone
- Offered as an Integration Option for CVDE's PVT200™
- An Integration Option Offered for Your Existing PVT System

Technical Data

Boule Diameter	200 mm
Hotzone Dimensions	max 540 mm
Inner Quartz Tube Diameter	Contact CVD Equipment
RF Induction Heating Coil Height	Contact CVD Equipment
Frequency	9.5-10.5 kHz
Working Pressure	0.5-700 Torr
Working Temperature	max 2500 °C
Temperature Control	800 to 2500 °C



Compact footprint e.g. 8 systems

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