The AP5150 uses thermal CVD to deposit semiconducting, dielectric, and insulating films such as boron phosphor silicate glass (BPSG). Thermal CVD does not result in undesirable charging effects that can be present in films when deposited by a plasma enhanced CVD process.

Our proprietary planetary rotation design, shown in the video below, improves temperature, thickness, and composition uniformity. The planets are keyed with the main platen (sun) rotation and speeds are adjustable up to 10 rpm. The motion can be jogged by a foot switch for convenient loading and unloading of your wafers.

Operated through our CVDWinPrC™ process control software, the systems automatically log data and graphically show time-dependent values of user-selected parameters. CVDWinPrC™ also allows users to load preprogrammed recipes, modify, check and create new recipes, and view realtime or saved process data.

Safety Protocols
The systems have application configured safety protocols embedded into relay logic, PLC, and CVDWinPrC™ software.

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Operation and Controls

The lid houses a shower head for uniform injection of the precursor gases and vapors. The lid (with showerhead) tilts to face the operator for ease of access for cleaning and maintenance. The graphite sun and planets lift out for cleaning when required.

There are four (4) independent temperature zones with thermocouple control for adjusting radial temperature profile. Gas and vapor flow rates are controlled by mass flow controllers. All process parameters are recipe programmable.

The system is controlled by our proprietary CVDWinPrC™ software package. All digital sequences and analogue values are stored in the datalog files. The system is also controlled via the graphical user interface for troubleshooting and maintenance. The manual control panel has pushbutton controls for raising and lowering the lid, and alarm/warning reset. A programmable logic controller (PLC), housed in the system cabinet, runs continuously with safety interlocks.

The system is housed in an exhausted cabinet with gas leak detection. The reactor compartment is HEPA filtered to minimize the risk of particulate contamination of the wafers before and after deposition.

Features and Benefits

- Thermal CVD for depositing semiconducting, dielectric, and insulating films without unwanted charging effects
- Planetary rotation for improved temperature, thickness, and composition uniformity
- Footswitch for jogging rotation for easy loading and unloading
- Automatic raising and lowering of the lid/showerhead
- Lid tilt mechanism for ease of maintenance
- Four radial temperature zones with independent thermocouple monitoring and control
- CVDWinPrC™ software for HMI, recipe editing, data logging, and real time graphing
- Exhausted cabinet with HEPA filtered reactor compartment
- Gas leak detection
- System placement options available, including bulkhead, through-wall, and ballroom.

CVD Equipment Corporation offers CVD processing systems with support equipment such as gas cabinets and exhaust gas conditioning systems. All major components from one vendor makes component interfacing seamless.

Call us at +1 631-981-7081 to discuss a product solution for your project. We can also be reached at sales@cvdequipment.com or visit our website.