Catalytic Chemical Vaper Deposition Apparatus  
(Cat-CVD) CAT-100

Cat-CVD apparatus for basic experiment of mass production of solar cell

**Feature**

Provides kinds of thin film deposition utilizing Catalytic Chemical Vaper Deposition method, that creates a uniform and highly-dense radicals in a low temperature by using catalytic cracking reaction between heated catalyzer and source gas in the vacuum chamber.

**Application**

- Amorphous silicon thin film deposition
- Silicon nitride passivation film deposition
- Cat-doping : phosphorus (P) and boron (B)
- PTFE repellent film deposition

**Material Gas**

- Hydrogen
- Oxygen
- Nitrogen
- Silane
- Ammonia
- Phosphine
- Diborane
- Methane, etc.

**Advantage**

- High cracking efficiency of gas (95% for SiH₄)
- High speed deposition (>10nm/s for a-S film)
- Substrate without damages caused by charged particles
- Enables low temperature deposition under 100°C
- Provides uniform and elaborate film deposition

**Automatic Control**

- Gas introduction
- Pumping • Venting
- Substrate transfer by robot
- Catalyzer wire electrical heating • Substrate heating
- Water leak detection • Various interlocks

**Process chamber**

- Water cooled • SUS • Mirror finished inner faces
- Two rings installation for gas introduction
- Vertically placed substrate tray
- Noncontact heater heats specimen up to 350 °C
- Deposition control by substrate shutter
- Ultimate pressure : <5×10⁻⁴ Pa

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Assembling in VIC factory

Apparatus operation at customer’s site

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