

## Quantum Efficiency Measurement System : Bentham PVE300

**About Instrument:** The Bentham PVE300 photovoltaic characterization system can be used for external quantum efficiency (EQE) measurement and internal quantum efficiency (IQE) calculation with the help of reflectance/transmittance measurement. Benwin+ is a control software which provides user friendly interface between optical and electronic components. The system consists of monochromator, dual light source with Xenon and QTH lamps, phase-insensitive lock-in amplifier, chopper, current pre-amplifier, integrating sphere for reflectance/transmittance measurements and Si and Ge detectors for calibration.

**Measurements:** Detector responsivity, external quantum efficiency (EQE), reflectance, transmittance, internal quantum efficiency (IQE).

### Probing Assemblies:

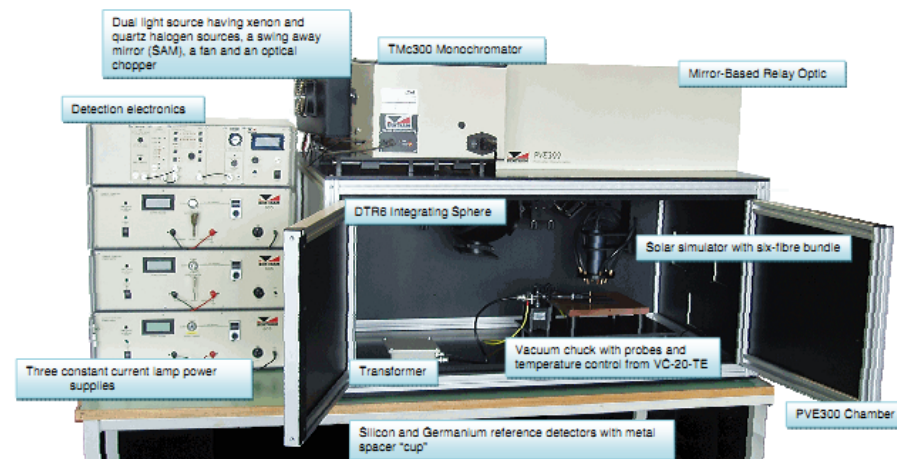
- Signatone magnetic base microprobe and chuck for standard solar cell with one contact front side and other on back side
- Two Signatone magnetic base microprobes for both contacts front side
- Specialized chuck for both contacts on back side

### Modes of operation:

- Transformer mode
- DC mode with zero chopper frequency
- AC mode with current pre-amplifier

### Brief System Features:

- **Wavelength Range:** 300nm - 1800 nm
- **Wavelength Resolution:** 2nm
- **Source:** Xenon Lamp, QTH lamp
- **Detectors:** Si detector and Ge detector
- **Additional features:**
  - Temperature controlled vacuum chuck
  - Class B bias light supply
  - Variable slit and aperture assembly



Location : NCPRE characterization lab, IIT-B

