Measurement of: Absorbance / Reflectance / Transmittance

Equipment: UV 3101 PC Shimadzu UV-Vis-NIR spectrophotometer.

Property Measured:

1. Absorption Coefficient.
2. Band Gap Determination
3. Particle size measurements

Photograph (small size)

Basic Principle:

The ultraviolet-visible light absorbance of the materials was examined by using UV-Vis absorption spectroscopy. A typical absorption spectrophotometer measures the amount of optical absorption in a material, as a function of wavelength. In such double beam spectrophotometers, a beam of light from a broadband light source gets separated into its component wavelengths by a prism or diffraction grating. Each monochromatic beam in turn is split into two equal intensity beams. One beam, the sample beam passes through the sample. The other beam, the reference beam passes through an identical reference.The intensities of these light beams are then measured by detectors and then compared. The ratio of these intensities can then be used to measure absorbance or transmittance of light through the sample

Capabilities:

Wavelength Range: 180nm~ 2600 nm

Spectral band width (slit width)

Resolution length range: 0.1nm

MIDDLE 200nm/min (These are the speeds when scanning with 0.5nm sampling interval.)

SLOW 100nm/min

SUPER SLOW 50nm/min

Sample Requirement: Either Solution samples (very diluted) or Thin Films.