Measurement of: Solids (Thin films, Powders, KBr discs), Liquid (Organic mixtures, mixtures of organic and inorganic materials, coatings, adhesives, drugs, emulsions, pastes)

Equipment: Perkin Elmer GX 2000 FTIR

Property Measured: transmission optical properties in the MID- IR spectral region (stretching vibrations of organic molecule).

Photograph (small size)

Basic Principle: Infrared spectroscopy exploits the fact that molecules absorb specific frequencies that are characteristic of their structure. These absorptions are resonant frequencies, i.e. the frequency of the absorbed radiation matches the transition energy of the bond or group that vibrates. The energies are determined by the shape of the molecular potential energy surfaces, the masses of the atoms, and the associated vibrionic coupling.

Capabilities: Scan range: Mid-infrared (650-4000 cm^{-1})

Source: MIR Globar source

Beam splitter: KBr

Detector: Deuterated triglycine sulphate (DTGS)

Laser Source: He-Ne (632.8 nm)

Sample Requirement: In case of a powder or solid sample a KBr pallet (2 % sample + 98% KBr) should be provided.