

Fourier Transform Infrared Spectroscopy (FTIR)



Since the IR spectrum of every molecule is unique, IR spectroscopy can be used as a tool of characterization for structural elucidation and compound identification; both in organic and inorganic chemistry. The technique can be applied to a wide range of samples such as liquids, gases, and solid-state matters. It is a sensitive technique, which can routinely detect microgram-order samples.

FTIR (Fourier Transform Infrared) Spectroscopy is one of the most common spectroscopic techniques used by organic and inorganic chemists. IR spectroscopy operates in the mid-infrared region with wavenumbers spanning from about 400 cm^{-1} to 4000 cm^{-1} . It functions on the basis of absorption of IR photons by a sample. The technique works in the fact that bonds and groups of bonds vibrate at characteristic frequencies. During a FTIR analysis, absorption of IR photons by a sample is subjected to a modulated IR beam. Some of the infrared radiation is absorbed by and some of it is passed through (transmitted) the sample. The resulting spectrum represents the molecular absorption and transmission, thus creating a molecular fingerprint of a sample.

FTIR Models	Detectors	Location
Perkin Elmer, System 2000	DTGS	364
Thermo Nicolet IR 200	DTGS	370
Thermo Nicolet IR 200	DTGS	263
Thermo Nicolet IR 200	DTGS	175
Thermo Nicolet IR 200	DTGS	110
Perkin Elmer	MCT	206

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