Fourier Transform Infrared (FTIR) Spectroscopy

The materials characterization laboratory is equipped with a Nicolet FTIR Spectrometer Magna-560 (Figure 1). The system includes high speed digital signal processor (DSP) system control, permanent optical alignment of its Stonehenge optics, and Windows based OMNIC software. The system has pre-aligned, pinned in place, user serviceable system components. The Magna-IR Spectrometer utilizes DSP technology to provide superior system stability via dynamic alignment.

Figure 1: The Nicolet FTIR Spectrometer Magna-560.

The spectrometer has a spectral range from 25,000-50 cm-, expanding the range of the applications and experiments that can be performed. This provides access to the far-IR, near-IR, visible and FT-Raman spectral domains through a variety of beam splitter, source, detector, and beam path choices. The Magna 560 FT-IR system is equipped with "Diffuse Reflectance" accessories including a "High Temperature / Vacuum Chamber". This enables in situ analysis of powdered samples under non-ambient conditions. Specialized experiments to simulate process conditions can be designed.