**FTIR Spectroscopy**

FTIR spectroscopy is a powerful tool for the identification of organic materials and some inorganic compounds. The technique involves the interaction of infrared radiation (IR) with a sample by either transmission of an IR beam through the sample or by reflection of an IR beam off of the sample. Absorbance of certain wavelengths of the IR beam by the sample can be related to the presence of specific functional groups present in the sample. Thus, chemical information can be determined based on the wavelengths and intensities of IR bands absorbed by the sample. For most common materials, the spectrum of an unknown can be identified by comparison to a library of known compounds. In addition to textbook references, ASG has access to numerous computer spectral libraries. To identify less common materials, IR results are combined with other techniques such as GC-MS, X-ray Diffraction, and SEM/EDS. microscopy.

Several FT-IR accessories are available to allow collection of spectra in a number of modes including transmission, reflection-absorption, diffuse reflectance, and attenuated total reflectance (ATR). This flexibility allows the analysis of a wide variety of samples and sample types.

Some of the more common uses of FT-IR are:

1. Evaluation of paper and plastic defects
2. Characterization of contaminates
3. Identification of organic unknowns
4. Evaluation of papermaking compounds

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| Sample size: | 0.5g minimum of powders | |
| | Minimum 10 mm x 10 mm x 1 mm thick for small bulk samples | |
| | or consultation if limited sample size | |
| Turnaround: | 10 working days or less | |
| Contact: | John Catino | (610) 533-6766 |