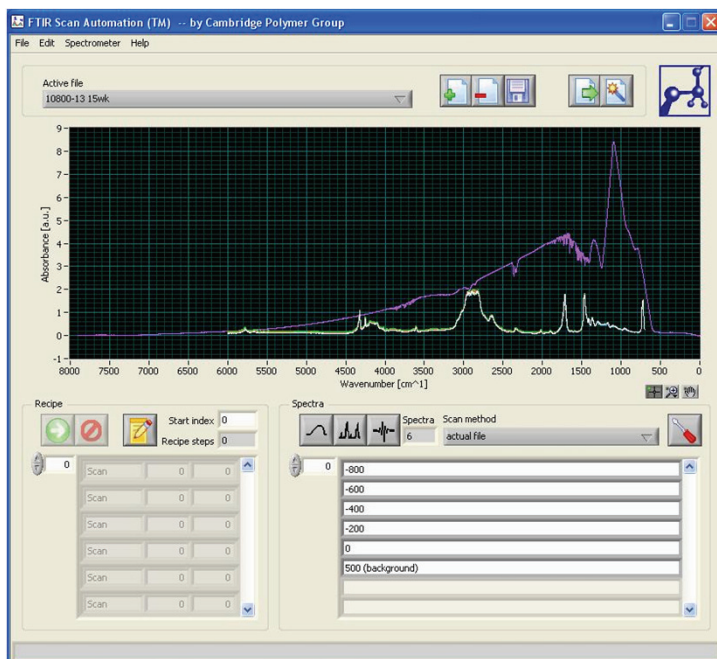


# Spatial determination of chemical composition

## Summary

Fourier Transform Infra-red Spectroscopy or FTIR can be used to determine the concentration of specific reaction products or contaminants in polymers and biological materials. Although most commercial systems allow some form of scanning, reliable multi-step analysis and automation is not common. CPG presents custom software that works in conjunction with existing Agilent stages for the FTIR equipment to provide fully automated and customizable two-dimensional determination of chemical species.



## Description

FTIR can identify the chemical structure of a molecule by measuring the absorbance of light at different frequencies. However, in many cases it is not the average composition in a specimen, but the spatial distribution that is of interest. Although many commercial FTIRs are equipped with automated stages, few have realized the full potential. In particular many ASTM standards require multiple analysis points across a specimen, with subsequent analysis. Thus a system that automates the scanning in a “recipe” form, and automates the analysis is invaluable for quality control and R&D, particularly in the biomedical industry where oxidation index and vitamin E index are becoming critical parameters.

## Specifications

- Developed for Prior Scientific stages
- Fully integrated with Agilent FTIR software
  - Automatic scanning and analysis
- Custom recipes and background determination
  - virtually infinitely flexible scan patterns

Standards simplified using this approach

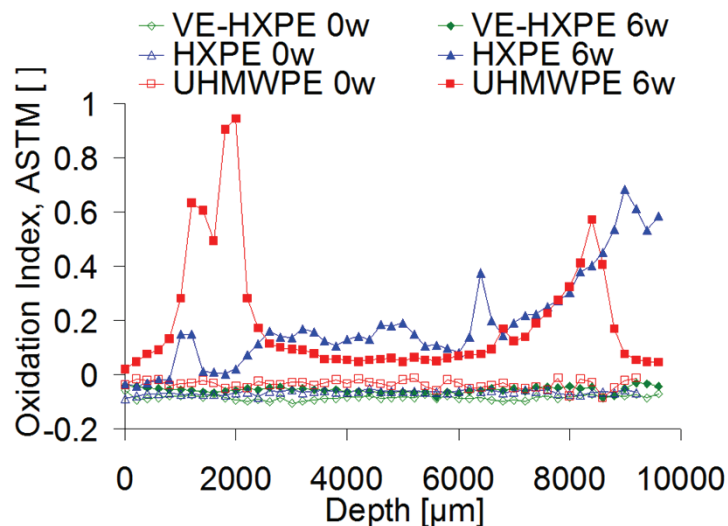
ASTM F2102

ASTM F2695

ASTM F2381

## Markets

- Biomedical materials
- Absorption and elution kinetics
- Oxidation profiles
- Biological distributions



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We work with clients throughout the product life cycle to:

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- **Design prototypes for proof-of-concept studies**
- **Create and execute experimental design**
- **Validate and verify manufacturing processes**
- **Perform root-cause analysis in product failures**

Cambridge Polymer Group, Inc. was founded in 1996 to provide a cost-effective resource for testing, research and development to clients who need periodic access to Ph.D.-level scientists and their support structure. We have developed a host of testing methods and materials for our clients, which number more than 300.



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