Cambridge Polymer Group

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.

Specifications

Developed for Prior Scientific stages

Fully integrated with Agilent FTIR software

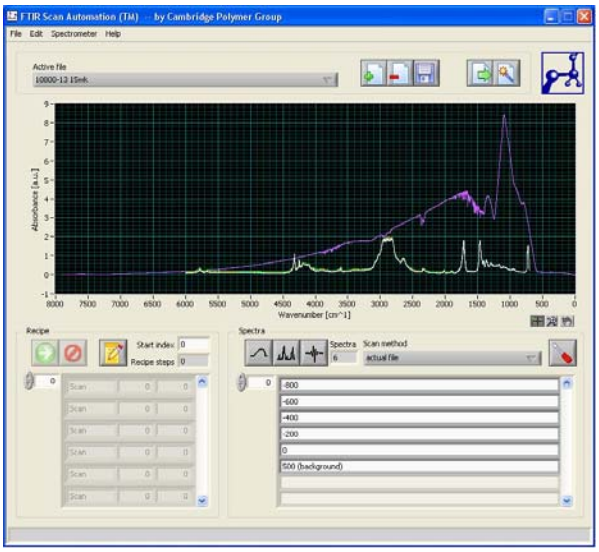
- Automatic scanning and analysis

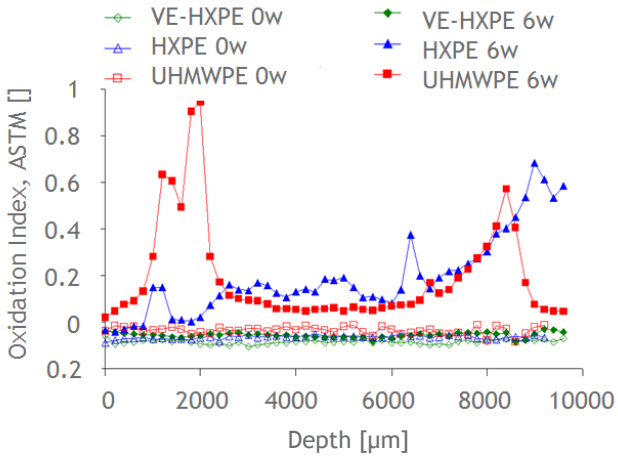
Custom recipes and background determination

- Virtually infinitely flexible scan patterns

Standards simplified using this approach

- ASTM F2102
- ASTM F2695
- ASTM F2381





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.

Markets

Biomedical materials

Absorption and elution kinetics

Oxidation profiles

Biological distributions

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