



Explore the latest advancements in FT-IR instrumentation, including Fourier transform ion cyclotron resonance (FT-ICR) mass spectrometry, time-resolved FT-IR, and near-field infrared nanospectroscopy. These cutting-edge techniques enable the study of complex systems with unprecedented sensitivity and resolution.

### **Chapter 3: FT-IR Applications in Materials Science**

Discover how FT-IR spectroscopy is used to characterize the structure, properties, and interactions of materials. Applications include polymer analysis, surface characterization, nanocomposite evaluation, and thin-film studies.

### **Chapter 4: FT-IR in Environmental Science**

Learn how FT-IR spectroscopy plays a crucial role in monitoring environmental pollutants, identifying air and water contaminants, and analyzing soil and sediment samples. Its applications in environmental monitoring and remediation are explored.

### **Chapter 5: FT-IR in Biomedical Applications**

Witness the transformative applications of FT-IR spectroscopy in biomedical research. From disease diagnosis and biomarker identification to tissue characterization and drug development, this chapter highlights the impact of FT-IR in healthcare.

### **Chapter 6: FT-IR in Cultural Heritage**

Uncover the invaluable contributions of FT-IR spectroscopy in preserving and understanding cultural heritage artifacts. Applications include the analysis of paintings, manuscripts, textiles, and archaeological samples,

providing insights into their composition, age, and degradation mechanisms.

## **Chapter 7: Advanced Data Analysis Techniques**

Master advanced data analysis techniques specifically tailored for FT-IR spectroscopy. Multivariate analysis, chemometrics, and machine learning algorithms are presented to help readers extract meaningful information from complex spectral data.

"Selected Applications of Modern FT-IR Techniques" is an essential resource for researchers, students, and industry professionals in various scientific disciplines. It provides a comprehensive understanding of the principles, instrumentation, and practical applications of advanced FT-IR techniques. With its in-depth coverage and expert insights, this book will inspire new discoveries and empower researchers to solve complex scientific challenges.



## Selected Applications of Modern FT-IR Techniques

★★★★★ 5 out of 5

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