CONTENTS

		List of Contributors Preface	vii ix
1		LABORATORY STUDIES OF REACTING AND TRANSIENT SYSTEMS J. F. DURANA AND A. W. MANTZ	
	I. II. III.	Introduction Techniques for Studying Mixing Systems Techniques for Studying Fast Systems References Bibliography	1 3 38 70 72
2		POLLUTION: TRACE GAS ANALYSIS PHILIP L. HANST	
	I.	Past Applications of Spectroscopy in the Analysis of the Atmosphere	79
		Advantages of the Fourier Transform Technique	81
		Long Path Cells	82
	IV.	g	87
	V.		88
	VI. VII.		91 96
	VII.	· · · · · · · · · · · · · · · · · · ·	20
	V 111.	from Water Vapor	99
	IX.	·	102
	X.		
		Pollutant Gases	105
		References	109
3	,	AIR POLLUTION: GROUND-BASED SENSING OF SOURCE EMISSIONS WILLIAM F. HERGET	
	I.	Remote Measurement of Source Emissions	111
	II.		112
	III.	·	116
	IV.	Measurement Programs	117
	V.	Summary	126
		References	127

vi	Contents
V:	Content

Vİ			Contents
4		LIQUID CHROMATOGRAPHY DETECTION USING FT-IR D. WARREN VIDRINE	
	I. II. IV. V.	Introduction Liquid Chromatography Flowcell Detection Optical System Summary References	129 130 139 152 164 164
5		APPLICATION OF FT-IR TO SURFACE STUDIES R. J. JAKOBSEN	
	I. II. III. IV.	Introduction Instrumentation for Surface Analysis Applications Summary References	165 166 167 190 191
6		QUANTITATIVE FT-IR: A DETAILED LOOK AT THE PROBLEMS INVOLVED TOMAS HIRSCHFELD	
	I. II. III. IV.	FT-IR, Murphy's Law, and Constructive Paranoia A Detailed Look at FT-IR Performance Classical Spectroscopic Errors in FT-IR New Effects in FT-IR References	193 196 215 226 239
7		ASTRONOMY: PLANETARY ATMOSPHERES UWE FINK AND HAROLD P. LARSON	
	I. II. IV. V. VI.	Introduction Development of Fourier Spectroscopy Overview of Planetary Atmospheres and Surfaces Applications of Fourier Spectroscopy in Astrophysics Instrumentation for Astrophysical Applications Future Directions References	243 245 249 255 281 302 307
		Index	315