

CONTENTS

1 INTRODUCTION

2 REFRACTIVE INDEX DETECTION

I.	Introduction	5
II.	Two Types of RI Detectors	7
III.	The Physical Property	11
IV.	Refractive Index of Binary Mixtures	20
V.	Minimum Detectability	24
VI.	Linear Dynamic Range	28
VII.	Problems with Changing Solvent Composition	30

3 ABSORBANCE DETECTION

I.	Overview of Absorbance Detectors	39
II.	Instrumentation	42
III.	Quantitative Measurement	50
IV.	Troubleshooting	64

4 PHOTODIODE ARRAY ABSORBANCE DETECTION

I.	Introduction	67
II.	Theory	68
III.	Optics	71
IV.	Data Output	77
V.	Applications of Diode Array Detectors	99
VI.	Summary	106

5 FLUORESCENCE DETECTION

I.	Introduction	111
II.	Photophysical Processes of Molecules in Solution	113
III.	Chemical Effects on Fluorescence	115
IV.	Fluorescence Detector Instrument Designs	120
V.	Signal-to-Noise Ratio Considerations	135
VI.	Quantitation	136
VII.	Fluorometric Derivatization in HPLC	138
VIII.	Chemiluminescence	139

6 ELECTROCHEMICAL DETECTION

I.	Introduction	145
II.	Amperometric Detection	148
III.	Conductivity Detection	163
IV.	Conclusion	171

7 MASS SPECTROMETRY AS AN LC DETECTION TECHNIQUE

I.	Introduction	175
II.	MS as an LC Detector	190
III.	LC/MS Interfacing Techniques	193
IV.	Summary and Selected Applications	207

8 POST-COLUMN DERIVATIZATION TECHNIQUES

I.	Introduction	211
II.	Scope of post-Column Reaction Detection	212
III.	Characteristics of Post-Column Reactions	212
IV.	Post-Column Reactor System Design	213
V.	Reactions Suitable for Post-Column Reaction Detection	220
VI.	Conclusion	230

9 OTHER MODES OF DETECTION

I.	Introduction	233
II.	Radioactivity	234
III.	Infrared Detection	247
IV.	Light-Scattering Detection	256
V.	Optical Activity	262
VI.	Other Detectors	271

INDEX	289
-------	-----