## **CONTENTS**

		Page
1.	General Concepts of Gas Chromatographic Analysis	3
	1.1 Theoretical plates and chromatographic kinetics	3
	1.2 Retention and distribution coefficient	11
	1.3 Resolution, column capacity, speed of analysis	14
	1.4 Temperature programming	21
	1.5 Pressure programming and choice of carrier gas	25
	Appendix: Particular characteristics of HPLC	26
	References	27
2.	Instrumentation for Gas Chromatographic Environmental Analysis	29
	2.1 Injection systems for gaseous samples	29
	2.2 Calibration methods for gaseous samples	32
	2.3 Calibration methods for vapors and low-boiling liquids	35
	2.4 Introduction of large gaseous volumes into a capillary column	40
	2.5 Injection systems for liquid solutions	43
	2.6 Detectors for gas chromatographic effluents	52
	2.7 Sensitivity, response factor, detection limits, dynamic range	54
	2.8 Types of detectors	55
	Appendix : Detectors for environmental liquid chromatography	78
	References	85
3.	The Mass Spectrometer and Its Use in Environmental Analysis	89
	3.1 The mass spectrum	90
	3.2 Ionization techniques	93
	3.3 Types of mass spectrometers	97
	3.4 Interfaces for chromatographic effluents	103
	3.5 Total ion current (scaning) and selected ion monitoring operating modes	109
	References	117
4.	The Chromatographic Analysis of Volatile Air and Water Pollutants	119
	4.1 Continuous measurements of total hydrocarbon content	120
	4.2 Monitorng of Sulfur gases	124
	4.3 The determination of volatile organic compounds in open atmosphere, working	
	locations, and industrial emissions	126
	4.4 Miscellaneous	160
	4.5 The analysis of volatile organic compounds in water and biological fluids	166
	References	173
5.	Sample Preparation and analysis of Organic Micropollutants from Complex Matrices	181
	5.1 Principles of extraction techniques	182
	5.2 Extraction techniques for organic micropollutants	194
	5.3 Cleanup techniques	201
	5.4 Analysis of organic micropollutants	209
	References	223
Index		227