658.56 REC

CONTENT

			Page
Preface			xi
1.	AN INTRODUCTION TO RECEPTION MODELING		1
	1	INTRODUCTION	1
	2	PRINCIPLE OF MASS CONSERVATION	2
	3	OVERVIEW	3
	4	SUMMARY	8
	5	REFERENCES	8
2.	SAMPLINE AND ANALYSIS METHODS FOR AMBIENT PM-10 AEROSOL		11
	1	INTRODUCTION	11
	2	AIR SAMPLING	12
	3	FILTER MEDIA	14
	4	MASS AND ELEMENTAL ANALYSIS METHODS	17
	5	IONIC ANALYSIS OF PARTICLES COLLECTED ON FILTERS	31
	6	CONCLUSIONS	37
	7	ACKNOWLEDGEMENTS	40
	8	REFERENCES	40
3.	SOURCE SAMPLING FOR RECEPTOR MODELING		45
	1	INTRODUCTION	45
	2	HIGH-TEMPERATURE POINT SOURCES – DILUTION SAMPLING	48
	3	RESIDENTAL WOOD COMBUSTION	53
	4	HIGH-TEMPERATURE POINT SOURCES – PLUME SAMPLING	56
	5	1 LOW-TEMPERATURE POINT SOURCES SAMPLING REQUIREMENTS	57
	6	MOBILE SOURCES	57
	7	PROCESS FUGITIVE EMISSIONS	65
	8	PASSIVE FUGITIVE EMISSIONS	68
	9	PROFILE DEVELOPMENTS	70
	10	ACKNOWLEDGEMENTS	74
	11	REFERENCES	78
4.	CHEMICAL MASS BALANCE		83
	1	INTRODUCTION	83
	2	CMB MATHEMATICS	84
	3	CMB MODEL ASSUMPTIONS	88
	4	CMB INPUT AND OUTPUT DATA	93
	5	USING THE CMB MODEL	100
	6	SUMMARY	111
	7	REFERENCES	112
5.	MULTIVARIATE RECEPTOR MODELS		117
	1	INTRODUCTION	117
	2	MULTIVARATE MODEL FUNDAMENTALS	119
	3	MULTIVARIATE FACTOR ANALYSIS AS APPLIED TO LOS ANGELES PARTICULATE COMPOSITION OBSERVATIONS	130
	4	CONCLUSIONS	144
	5	REFERENCES	144

6. SCANNING ELECTRON MICROSCOPY 149
1 INTRODUCTION 149
2 SCANNING ELECTRON MICROSCOPE 150
3 SAMPLE PREPARATION 160
4 DATA ANALYSIS 162
5 PARTICLE CLASSIFICATION 163
6 PARTICLE CLASS BALANCE 187
7 OTHER APPROACHES TO DATA ANALYSIS 205
8 CONCLUSIONS 206
9 REFERENCES 208

7. RECEPTOR MODELING FOR VOLATILE ORGANIC COMPOUNDS 213
1 INTRODUCTION 213
2 SOURCE FINGERPRINTS 216
3 APPLICATIONS 223
4 EVALUATION 233
5 REFERENCES 249

8 RECEPTOR MODELING IN THE CONTEXT OF AMBIENT AIR QUALITY STANDARD FOR PARTICULATE MATTER 255
1 INTRODUCTION 255
2 AIR QUALITY MANAGEMENT FOR PARTICULATE MATTER 255
3 PM-10 SOURCE ATTRIBUTION 258
4 RECONCILING RECEPTOR AND DISPERSION MODEL RESULTS 266
5 REFERENCES 295

9 APPLICATION OF RECEPTOR MODELING TO SOLVING LOCAL AIR QUALITY PROBLEMS 299
1 INTRODUCTION 299
2 THE ROLE OF RECEPTOR MODELS IN AIR QUALITY MANAGEMENT 303
3 CONTROL STRATEGY DEVELOPMENT USING RECEPTOR MODELS 304
4 RECEPTOR MODEL CASE STUDIES 310
5 BARRIERS TO PRACTICAL APPLICATIONS OF RECEPTOR MODELS 312
6 FUTURE APPLICATIONS 315
7 CONCLUSIONS 317
8 REFERENCES 317

INDEX 321