

## CONTENT

	Page
Preface	xi
 <b>SAMPLING METHODS AND APPROACHES</b>	
1. Standard Technical Approach for the Analysis of Ambient Air Samples	3
2. Use of a Microchip Gas Chromatograph for Ambient Air Analysis	21
3. Theory and Application of the U.S. EPA Recommended Surface Emission Isolation Flux Chamber for Measuring Emission Rates of Volatile and Semivolatile Species	39
4. A Combustion Wind Tunnel for Direct Determination of Emission Factors from Open Burning of Agricultural Wastes	57
5. Comparison of a Charcoal Tube and a Passive Sampling Device for Determination of Low Concentrations of Styrene in Air	79
6. Dynamic Gas Chromatographic Techniques for the Characterization of Carbon-Based Adsorbents Utilized in Air Sampling	91
 <b>VOLATILE ORGANIC COMPOUND ANALYSIS</b>	
7. Detector Selection for the Analysis of Volatile Organic Air toxic Compounds Using U.S. EPA Compendium Method TO-14	103
8. The Chemiluminescent Detection of Volatile Sulfur Compounds	117
9. Measurement of Oxygenated Hydrocarbons and Reduced Sulfur Gases by Full-Scan Gas Chromatography / Mass Spectrometry (GC/MS) : EPA Method TO-14	133
10. Sampling of Atmospheric Carbonyl Compounds for Determination by Liquid Chromatography After 2,4-Dinitrophenylhydrazine Labelling	149
 <b>AEROSOL SAMPLING AND ANALYSIS DEVELOPMENTS</b>	
11. Methods of Analysis for Complex Organic Aerosol Mixtures from Urban Emission Sources of Particulate Carbon	177
12. Vapor Adsorption Artifact in the Sampling of Organic Aerosol	191
13. A Sampling System for Reactive Species in the Western United States	209
14. Ice Cores as a Unique Means of Retrieving Records of chemical Compounds in the Atmosphere : Evidence of an Undocumented Tropical Volcanic Eruption in the Early 19 <sup>th</sup> Century	229
 <b>OPTICAL REMOTE SENSING</b>	
15. Remote Sensing of Volatile Organic Compounds (VOCs) : A Methodology for Evaluating Air Quality Impacts During Remediation of Hazardous Waste Sites	247
16. The Neutral Gas Laser : A Tool for Remote Sensing of Chemical Species by Infrared Absorption	257
 <b>DATA INTERPRETATION TECHNIQUES</b>	
17. Data Treatment Procedures in Ambient Air Monitoring	277
18. Assessing the Visibility Impairment Associated with Various Sulfate Reduction Scenarios at Shenandoah National Park	302
19. Evaluating Exposure to Environmental Tobacco Smoke	319
20. Bioavailability of Benzene Through Inhalation and Skin Absorption	339
 <b>INDEX</b>	 353