

1. Record Nr.	UNINA9911006687603321
Autore	Vallero Daniel A
Titolo	Fundamentals of air pollution [[electronic resource] /] / Daniel A. Vallero
Pubbl/distr/stampa	Amsterdam ; ; Boston, : Elsevier, 2008
ISBN	1-281-22727-7 9786611227272 0-08-055284-6
Edizione	[4th ed.]
Descrizione fisica	1 online resource (967 p.)
Disciplina	628.5/3 22 628.53
Soggetti	Air - Pollution
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Front Cover; Fundamentals of Air Pollution; Copyright Page; Contents; Preface to the Third Edition; Preface to the Fourth Edition; Part I: Air Pollution Essentials; Chapter 1 The Changing Face of Air Pollution; I. Defining Air Pollution; II. The Emergence of Air Pollution Science, Engineering, and Technology; III. Air Pollution Before the Industrial Revolution; IV. Air Pollution and the Industrial Revolution; V. Recent Air Pollution; VI. The 1980s; VII. Recent History; VIII. The Future; Further Reading; Suggested Reading; Questions; Chapter 2 The Earth's Atmosphere; I. The Atmosphere II. Baseline Conditions: Unpolluted Air III. What is Air Pollution?; IV. Particulate Matter; V. Concepts; References; Suggested Reading; Questions; Chapter 3 Scales of the Air Pollution Problem; I. Local; II. Urban; III. Regional; IV. Continental; V. Global; Suggested Reading; Questions; Part II: The Physics and Chemistry of Air Pollution; Chapter 4 Air Pollution Physics; I. Mechanics of Air Pollution; II. Fluid Properties; Questions; Chapter 5 The Physics of the Atmosphere; I. Energy; II. Motion; III. Energy-Motion Relationships; IV. Local Wind Systems; V. General Circulation; References Suggested Reading Questions; Chapter 6 Air Pollution Systems and Processes; I. Chemical Processes in Air Pollution; II. Air Pollution Chemodynamics; References; Suggested Reading; Questions; Chapter 7

Characterizing Air Pollution; I. Relationship Between Physics and Chemistry; II. Basic Chemical Concepts; III. Expressions of Chemical Characteristics; IV. Electromagnetic Radiation, Electron Density, Orbitals, and Valence; V. Organic Chemistry; VI. Introduction to Atmospheric Chemistry; VII. Heterogeneous Reactions; VIII. Scavenging and Removal from the Atmosphere; References; Suggested Reading Questions

Chapter 8 Air Quality; I. Averaging Time; II. Cycles; III. Primary and Secondary Pollutants; IV. Measurement Systems; V. Air Quality Levels; References; Suggested Reading; Questions; Chapter 9 The Philosophy of Air Pollution Control; I. Strategy and Tactics: The Air Pollution System; II. Episode Control; III. Air Quality Management Control Strategy; IV. Alternative Control Strategies; V. Economic Considerations; References; Suggested Reading; Questions; Chapter 10 Sources of Air Pollution; I. General; II. Combustion; III. Stationary Sources; IV. Mobile Sources; V. Air Toxics Sources

VI. Emission Inventory VII. An International Perspective: Differences in Time and Space; VIII. ODORS: More than just a Nuisance; References; Suggested Reading; Questions; Part III: Risks from Air Pollution; Chapter 11 Effects on Health and Human Welfare; I. Air-Water-Soil Interactions; II. Total Body Burden; III. The Human Respiratory System; IV. Impact of Air Pollution on Humans; V. Impact of Odor on Humans; References; Suggested Reading; Questions; Chapter 12 Effects on Vegetation and Animals; I. Injury versus Damage; II. Effects on Vegetation and Crops; III. Effects on Forests

IV. Effects on Animals

---

#### Sommario/riassunto

Fundamentals of Air Pollution is an important and widely used textbook in the environmental science and engineering community. Written shortly after the passage of the seminal Clean Air Act Amendments of 1990, the third edition was quite timely. Surprisingly, the text has remained relevant for university professors, engineers, scientists, policy makers and students up to recent years. However, in light of the transition in the last five years from predominantly technology-based standards (maximum achievable control technologies or MACTs) to risk-based regulations and air quality standards, the

---