Contents

Foreword by John J. Sciarra iii
Preface v
Contributors ix

Part One: FACTORS GOVERNING AEROSOL DEPOSITION AND TARGETING IN THE LUNG

1 Physiology of the Airways 1
   Anthony J. Hickey and David C. Thompson

2 Pharmacology of Therapeutic Aerosols 29
   David C. Thompson

3 Targeting by Deposition 61
   Igor Gonda

4 Drug Targeting to the Lung: Chemical and Biochemical Considerations 83
   Peter A. Crooks

Part Two: METHODS OF GENERATION, ADMINISTRATION, AND CHARACTERIZATION OF AEROSOLS

5 Theoretical Principles and Devices Used to Generate Aerosols for Research 129
   Keng H. Leong
Contents

6 The Design and Development of Inhalation Drug Delivery Systems
  Paul J. Atkins, Nicholas P. Barker, and Donald Mathisen
  155

7 Aerosol-Filling Equipment for the Preparation of Pressurized Pack Pharmaceutical Formulations
  Christophe Sirand, Jean-Pierre Varlet, and Anthony J. Hickey
  187

8 Methods of Aerosol Particle Size Characterization
  Anthony J. Hickey
  219

9 Summary of Common Approaches to Pharmaceutical Aerosol Administration
  Anthony J. Hickey
  255

Part Three: CLINICAL ASPECTS OF AEROSOL ADMINISTRATION AND FUTURE PERSPECTIVES

10 Therapeutic Aerosols: An Overview from a Clinical Perspective
  F. Charles Hiller
  289

11 Aerosolized Pentamidine for Treatment and Prophylaxis of Pneumocystis carinii Pneumonia in Patients with Acquired Immunodeficiency Syndrome
  A. Bruce Montgomery
  307

12 Modulated Drug Therapy with Inhalation Aerosols
  Ralph W. Niven
  321

Index
  361