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Autore	Finlay Warren H
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4.11 Effect of aerodynamic pressure and temperature changes on hygroscopic effects; 4.12 Corrections to simplified theory for small droplets; 4.13 Corrections to account for Stefan flow; 4.14 Exact solution for Stefan flow; 4.15 When can Stefan flow be neglected?; Chapter 5. Introduction to the Respiratory Tract; 5.1 Basic aspects of respiratory tract geometry; 5.2 Breath volumes and flow rates; Chapter 6. Fluid Dynamics in the Respiratory Tract; 6.1 Incompressibility; 6.2 Nondimensional analysis of the fluid equations; 6.3 Secondary flow patterns; 6.4 Reduction of turbulence by particle motion
6.5 Temperature and humidity in the respiratory tract; 6.6 Interaction of air and mucus fluid motion; Chapter 7. Particle Deposition in the Respiratory Tract; 7.1 Sedimentation of particles in inclined circular tubes; 7.2 Sedimentation in alveolated ducts; 7.3 Deposition by impaction in the lung; 7.4 Deposition in cylindrical tubes due to Brownian diffusion; 7.5 Simultaneous sedimentation, impaction and diffusion; 7.6 Deposition in the mouth and throat; 7.7 Deposition models; 7.8 Understanding the effect of parameter variations on deposition; 7.9 Respiratory tract deposition; 7.10 Targeting deposition at different regions of the respiratory tract

Sommario/riassunto

The Mechanics of Inhaled Pharmaceutical Aerosols, An Introduction provides a unique and comprehensive treatment of the mechanics of inhaled pharmaceutical aerosols. The book covers a wide range of topics and many new perspectives are given by drawing on research from a variety of fields. Novel, in-depth expositions of the most common delivery devices are given, including nebulizers, dry powder inhalers and propellant metered dose inhalers. The behaviour of aerosols in the respiratory tract is explained in detail, with complete coverage of the fundamentals of current deposition models.