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Damage and Oxide Films; 3.8 Radiative Properties of Semitransparent Sheets; 3.9 Special Surfaces; 3.10 Experimental Methods; References; Problems; Chapter 4: View Factors; 4.1 Introduction; 4.2 Definition of View Factors; 4.3 Methods for the Evaluation of View Factors; 4.4 Area Integration; 4.5 Contour Integration; 4.6 View Factor Algebra; 4.7 The Crossed-strings Method
4.8 The Inside Sphere Method
4.9 The Unit Sphere Method; References; Problems; Chapter 5: Radiative Exchange Between Gray, Diffuse Surfaces; 5.1 Introduction; 5.2 Radiative Exchange Between Black Surfaces; 5.3 Radiative Exchange Between Gray, Diffuse Surfaces; 5.4 Electrical Network Analogy; 5.5 Radiation Shields; 5.6 Solution Methods for the Governing Integral Equations; References; Problems; Chapter 6: Radiative Exchange Between Partially Specular Gray Surfaces; 6.1 Introduction; 6.2 Specular View Factors; 6.3 Enclosures with Partially Specular Surfaces; 6.4 Electrical Network Analogy
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6.6 Semitransparent Sheets (Windows); 6.7 Solution of the Governing Integral Equation; 6.8 Concluding Remarks; References; Problems; Chapter 7: Radiative Exchange Between Nonideal Surfaces; 7.1 Introduction; 7.2 Radiative Exchange Between Nongray Surfaces; 7.3 Directionally Nonideal Surfaces; 7.4 Analysis For Arbitrary Surface Characteristics; References; Problems; Chapter 8: The Monte Carlo Method for Surface Exchange; 8.1 Introduction; 8.2 Numerical Quadrature by Monte Carlo; 8.3 Heat Transfer Relations for Radiative Exchange Between Surfaces
8.4 Random Number Relations for Surface Exchange

Sommario/riassunto

The third edition of Radiative Heat Transfer describes the basic physics of radiation heat transfer. The book provides models, methodologies, and calculations essential in solving research problems in a variety of industries, including solar and nuclear energy, nanotechnology, biomedical, and environmental. Every chapter of Radiative Heat Transfer offers uncluttered nomenclature, numerous worked examples, and a large number of problems-many based on real world situations-making it ideal for classroom use as well as for self-study. The book's 24 chapters cover the four
