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Autore	Iguchi Manabu
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Momentum Transfer In Single-Phase Flows -- Basic Properties of Fluid Flow -- Momentum Transfer -- Special Topics in Fluid Mechanics -- Single Phase Heat Transfer -- Basic Principles of Heat Transfer -- One-Dimensional Heat Conduction.- Convection Heat Transfer -- Radiation Heat Transfer -- Mass Transfer -- Diffusion and Mass Transfer -- Multiphase Flow -- Gas-Liquid Two-Phase Flow -- Flows Involving Solid Phase.- Multiphase Flow in Micro-Scale Systems.
Sommario/riassunto	This book presents the basic theory and experimental techniques of transport phenomena in materials processing operations. Such fundamental knowledge is highly useful for researchers and engineers in the field to improve the efficiency of conventional processes or develop novel technology. Divided into four parts, the book comprises 11 chapters describing the principles of momentum transfer, heat transfer, and mass transfer in single phase and multiphase systems. Each chapter includes examples with solutions and exercises to facilitate students' learning. Diagnostic problems are also provided at the end of each part to assess students' comprehension of the material. The book is aimed primarily at students in materials science and engineering. However, it can also serve as a useful reference text in chemical engineering as well as an introductory transport phenomena text in mechanical engineering. In addition, researchers and engineers engaged in materials processing operations will find the material useful for the design of experiments and mathematical models in transport

phenomena. This volume contains unique features not usually found in traditional transport phenomena texts. It integrates experimental techniques and theory, both of which are required to adequately solve the inherently complex problems in materials processing operations. It takes a holistic approach by considering both single and multiphase systems, augmented with specific practical examples. There is a discussion of flow and heat transfer in microscale systems, which is relevant to the design of modern processes such as fuel cells and compact heat exchangers. Also described are auxiliary relationships including turbulence modeling, interfacial phenomena, rheology, and particulate systems, which are critical to many materials processing operations.