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Titolo	The Essentials of Thermodynamics // by Miloslav Peka
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ISBN	9783031603211 9783031603204
Edizione	[1st ed. 2024.]
Descrizione fisica	1 online resource (179 pages)
Collana	Physical Chemistry in Action, , 2197-4357
Disciplina	536.7
Soggetti	Thermodynamics Chemical kinetics Physical chemistry Reaction Kinetics Physical Chemistry
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction -- Basic Concepts, Thermal Experience -- Motion and Energy -- The Behaviour of Gases -- Back to the Thermal Behaviour of Gases - Real Gases -- Thermodynamics- A Basic Macroscopic Model -- Heat Machines and Cycles, Internal Energy -- Further Ideas Arising from the Concept of an Ideal Gas -- Entropy in General -- Thermodynamic Potentials, Essentials Overview -- Entropy Inequality -- Another Generalization, this Time Concerning Entropy In-equality -- Multicomponent Bodies, Mixtures -- The Molecular Model Again -- Conclusions.
Sommario/riassunto	This monograph offers a unique approach to understanding thermodynamics by blending practical experience, a mathematically rigorous foundation, and historical insights. It presents the evolution of thermodynamics, demonstrating that the functions, equations, relationships, and quantities didn't simply materialize but were rooted in the human experience of heat and cold. While equilibrium thermodynamics is the primary focus, time is integrated as a fundamental element, distinguishing this from traditional treatments. Readers will find familiar heat-related experiences transformed into model equations, revealing the natural emergence of fundamental

thermodynamic concepts. These essentials are then distilled into simple axioms summarizing the core principles of equilibrium thermodynamics. The book goes beyond macroscopic descriptions, delving into microscopic connections at the atomic and molecular levels. It is suitable for a diverse readership, including students in science and technology, professionals looking to refresh their knowledge of thermodynamics, and those interested in exploring advanced, non-equilibrium thermodynamics. While it caters to a broad audience, it is particularly beneficial for individuals in chemistry and chemical engineering, requiring only a basic understanding of calculus.
