

<<热力学和统计力学>>

图书基本信息

<<热力学和统计力学>>

内容概要

德国著名理论物理学家W. Griner教授编写了一套13卷集的理论物理学教科书, 本书是其中之一。这是一套内容完整而实用的大学生及硕士研究生现代物理学教材。它以系统、统一和连贯的方式阐述了现代理论物理学的诸方面。这套教材面世后, 不仅在德国产生了巨大的影响, 其英文版的及时推出, 对全世界理论物理学的教学也起了很好的促进作用。

<<热力学和统计力学>>

书籍目录

Foreword Preface Thermodynamics 1 Equilibrium and State Quantities Introduction Systems, phases and state quantities Equilibrium and temperature-the zeroth law of thermodynamics Kinetic theory of the ideal gas Pressure, work and chemical potential Heat and heat capacity The equation of state for a real gas Specific heat Changes of state-reversible and irreversible processes Exact and inexact differentials, line integrals 2 The Laws of Thermodynamics The first law Carnot's process and entropy Entropy and the second law Insertion: Microscopic interpretation of entropy and of the second law Global and local equilibrium Thermodynamic engines Euler's equation and the Gibbs-Duhem relation 3 Phase Transitions and Chemical Reactions Gibbs' Phase Rule Phase equilibrium and the Maxwell construction The law of mass action Application of the thermodynamics 4 Thermodynamic Potentials The principle of maximum entropy Entropy and energy as thermodynamic potentials The Legendre transformation The free enthalpy The Enthalpy The grand potential The transformation of all variables The maxwell relations Jacobi transformations Thermodynamic stability Statistical Mechanics 5 Number of Microstates and Entropy S 6 Ensemble Theory and Microcanonical Ensemble 7 The Canonical Ensemble 8 Applications of Boltzmann Statistics 9 The Macrocanonical Ensemble Quantum Statistics 10 Density Operators 11 The Symmetry Character of Many-Particle Wavefunctions 12 Grand Canonical Description of Ideal Quantum Systems 13 The Ideal Bose Gas 14 Ideal Fermi Gas 15 Applications of Relativistic Bose and Fermi Gases Real Gases and Phase Transitions 16 Real Gases 17 Classification of Phase Transitions 18 The Models of Ising and Heisenberg Index

<<热力学和统计力学>>

版权说明

本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问:<http://www.tushu007.com>