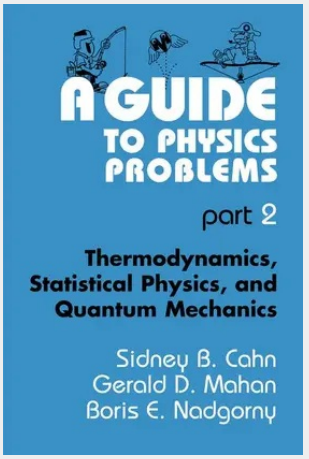
Cahn / Mahan / Nadgorny

A Guide to Physics Problems

Part 2: Thermodynamics, Statistical Physics, and Quantum Mechanics



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In order to equip hopeful graduate students with the knowledge necessary to pass the qualifying examination, the authors have assembled and solved standard and original problems from major American universities – Boston University, University of Chicago, University of Colorado at Boulder, Columbia, University of Maryland, University of Michigan, Michigan State, Michigan Tech, MIT, Princeton, Rutgers, Stanford, Stony Brook, University of Tennessee at Knoxville, and the University of Wisconsin at Madison – and Moscow Institute of Physics and Technology. A wide range of material is covered and comparisons are made between similar problems of different schools to provide the student with enough information to feel comfortable and confident at the exam. is published in two volumes: this book, covers Thermodynamics, Statistical Mechanics and Quantum Mechanics; covers Mechanics, Relativity and Electrodynamics.

Praise for

"… not only serves an important function, but is a pleasure to read. By selecting problems from different universities and even different scientific cultures, the authors have effectively avoided a one-sided approach to physics. All the problems are good, some are very interesting, some positively intriguing, a few are crazy; but all of them stimulate the reader to think about physics, not merely to train you to pass an exam. I personally received considerable pleasure in working the problems, and I would guess that anyone who wants to be a professional physicist would experience similar enjoyment. … This book will be a great help to students and professors, as well as a source of pleasure and enjoyment." (From Foreword by Max Dresden)

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