

Bestselling Textbooks in Statistical Physics

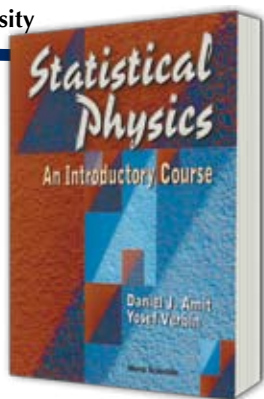
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STATISTICAL PHYSICS

An Introductory Course

by **Daniel J Amit** (*Universita di Roma "La Sapienza" & The Hebrew University*) & **Yosef Verbin** (*The Open University of Israel*)



This invaluable textbook is an introduction to statistical physics that has been written primarily for self-study. It provides a comprehensive approach to the main ideas of statistical physics at the level of an introductory course, starting from the kinetic theory of gases and proceeding all the way to Bose–Einstein and Fermi–Dirac statistics. Each idea is brought out with ample motivation and clear, step-by-step, deductive exposition. The key points and methods are presented and discussed on the basis of concrete representative systems. The book will benefit the undergraduate and graduate students in physics and engineering.

580pp	Dec 1999	
978-981-02-3192-7	US\$61	£46
978-981-02-3476-8(pbk)	US\$36	£26

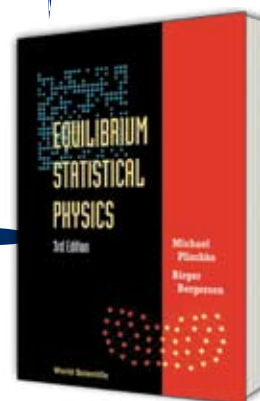
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EQUILIBRIUM STATISTICAL PHYSICS

(3rd Edition)

by **Michael Plischke** (*Simon Fraser University, Canada*) & **Birger Bergersen** (*University of British Columbia, Canada*)



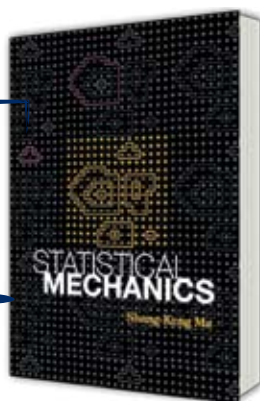
This third edition of one of the most important and best selling textbooks in statistical physics, is a graduate level text suitable for students in physics, chemistry, and materials science. A chapter on stochastic processes has also been added with emphasis on applications of the Fokker–Planck equation.

Contents: Review of Thermodynamics; Statistical Ensembles; Mean Field and Landau Theory; Applications of Mean Field Theory; Dense Gases and Liquids; Critical Phenomena I; Critical Phenomena II: The Renormalization Group; Stochastic Processes; Simulations; Polymers and Membranes; Quantum Fluids; Linear Response Theory; Disordered Systems.

640pp	Apr 2006	
978-981-256-048-3	US\$126	£78
978-981-256-155-8(pbk)	US\$69	£43

Adopted by:

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- Massachusetts Institute of Technology
- University of California, Berkeley
- Columbia University



STATISTICAL MECHANICS

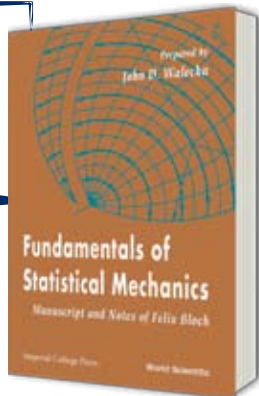
by **Shang-Keng Ma**

This is a unique and exciting graduate and advanced undergraduate text written by a highly respected physicist who had made significant contributions to the subject. This book conveys to the reader that statistical mechanics is a growing and lively subject. It deals with many modern topics from a physics standpoint in a very physical way. Particular emphasis is given to the fundamental assumption of statistical mechanics $S=1n$ and its logical foundation. Computational rules are derived without resorting to abstract ensemble theory.

576pp	May 1985	
978-9971-966-07-2	US\$51	£33

Adopted by:

- Dartmouth College
- University of Minnesota-Twin Cities
- University of New Hampshire
- The College of William and Mary
- Indiana University Bloomington



FUNDAMENTALS OF STATISTICAL MECHANICS

Manuscript and Notes of Felix Bloch

by John D Walecka (*The College of William & Mary, USA*)

"I found it particularly useful in "seminar classes", where students are required to read and cope with a new topic and then present it to their fellow students. I found that students, even at the undergraduate level, greatly benefited and enjoyed using those parts of the book relevant to their assignments ... I consider this book as one of the most cherished gems of my scientific library."

Hanoch Gutfreund

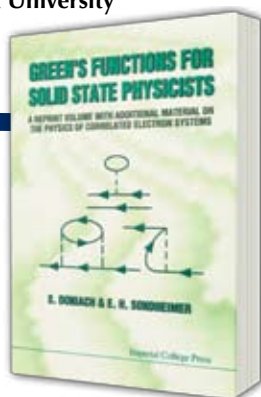
The Hebrew University of Jerusalem

Contents: Introduction and Basic Concepts; Classical Physics; The Statistical Ensemble; Thermal Equilibrium and the Canonical Distribution; Applications of Classical Statistics; Quantum Statistics; Applications of Quantum Statistics; five appendices.

316pp	Nov 2000	
978-981-02-4419-4	US\$50	£37
978-981-02-4420-0(pbk)	US\$27	£20

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GREEN'S FUNCTIONS FOR SOLID STATE PHYSICISTS

A Reprint Volume with Additional Material on the Physics of Correlated Electron Systems

by S Doniach (*Stanford University, USA*) & E H Sondheimer (*University of London, UK*)

This invaluable book grew out of a course of graduate lectures given by S Doniach at the University of London. It will appeal to beginning graduate students in theoretical solid state physics as an introduction to more comprehensive or more specialized texts and also to experimentalists who would like a quick view of the subject. A basic knowledge of solid state physics and quantum mechanics at graduate level is assumed.

336pp	Jun 1998	
978-1-86094-080-4	US\$45	£30

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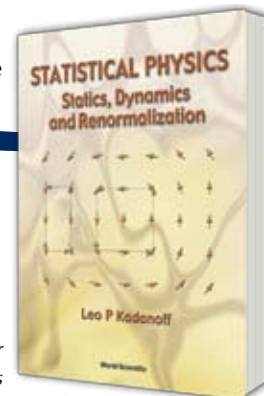
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- University of California, Los Angeles
- University of California, San Diego
- University of Houston
- Ohio State University
- University of Notre Dame
- Boston College



STATISTICAL PHYSICS

Statics, Dynamics and Renormalization

by Leo P Kadanoff (*University of Chicago*)

"It will be particularly appreciated for its emphasis on providing tools appropriate to the most active and important new research areas in statistical physics ... Kadanoff's lucid exposition and organization are clearly informed by his own unique view of the subject gained from a life-time of creative thought and profound contributions in statistical physics."

Ed Ott

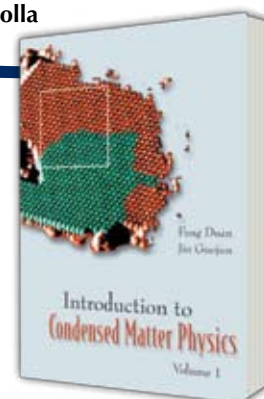
University of Maryland

The invaluable textbook has been tested in two courses. One of these is a graduate-level survey of statistical physics; the other, a rather personal perspective on critical behavior. To supplement the research-level side the book includes research in the field of self-organized criticality and complexity, diffusion-limited aggregation, correlations near critical points, real-space renormalization group, and magnetic behavior in a plain geometry.

500pp	May 2000	
978-981-02-3758-5	US\$91	£67
978-981-02-3764-6(pbk)	US\$36	£26

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INTRODUCTION TO CONDENSED MATTER PHYSICS

Volume 1

by Feng Duan & Jin Guojun (*Nanjing University, China*)

This is volume 1 of two-volume book that presents an excellent, comprehensive exposition of the multi-faceted subjects of modern condensed matter physics, unified within an original and coherent conceptual framework. Traditional subjects such as band theory and lattice dynamics are tightly organized in this framework, while many new developments emerge spontaneously from it.

616pp	Jul 2005	
978-981-238-711-0	US\$103	£68
978-981-256-070-4(pbk)	US\$58	£37

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