

1. Record Nr.	UNINA9911034856803321
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Titolo	Introduction to Condensed Matter Theory // by Pedro D. Sacramento
Pubbl/distr/stampa	Cham : , : Springer Nature Switzerland : , : Imprint : Springer, , 2025
ISBN	3-031-86251-1
Edizione	[1st ed. 2025.]
Descrizione fisica	1 online resource (1362 pages)
Collana	Physics and Astronomy Series
Disciplina	530.41
Soggetti	Condensed matter Quantum statistics Thermodynamics Statistical physics Condensed Matter Physics Quantum Fluids and Solids Statistical Physics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Chapter 1: Introduction to macroscopic systems -- Chapter 2: Revision of thermodynamics -- Chapter 3: Microscopic description -- Chapter 4: Classical Statistical Physics -- Chapter 5: Stochastic processes -- Chapter 6: Introduction to transport processes -- Chapter 7: Quantum Statistical Physics -- Chapter 8: Crystalline structures -- Chapter 9: Lattice vibrations: Phonons -- Chapter 10: Electronic energy bands -- Chapter 11: Linear response theory -- Chapter 12: Electromagnetic response -- Chapter 13: Effects of magnetic fields -- Chapter 14: Microscopic description of interactive quantum systems.
Sommario/riassunto	This textbook is designed for advanced undergraduate and early graduate students. It provides a comprehensive overview of key concepts in thermodynamics, statistical physics, solid state physics, condensed matter physics, phase transitions, and critical phenomena. Ideal for use in multiple courses within the field of condensed matter physics, this book offers a thorough review of the essential material typically covered in these courses. Unlike many textbooks that focus heavily on many-body techniques and complex diagrammatic methods, this book presents its content in a more accessible manner. It covers a

broad range of topics, including some not usually addressed in introductory courses, while maintaining a technical level that is less intricate than traditional many-body texts. This book integrates graduate-level discussions with undergraduate material and simplifies advanced topics wherever possible. For students interested in exploring more challenging subjects, the book references additional textbooks and resources, enabling them to deepen their understanding of advanced concepts and methods. This volume, the first of two, presents readers with a microscopic description of condensed systems and is mainly concerned with single-particle properties.

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