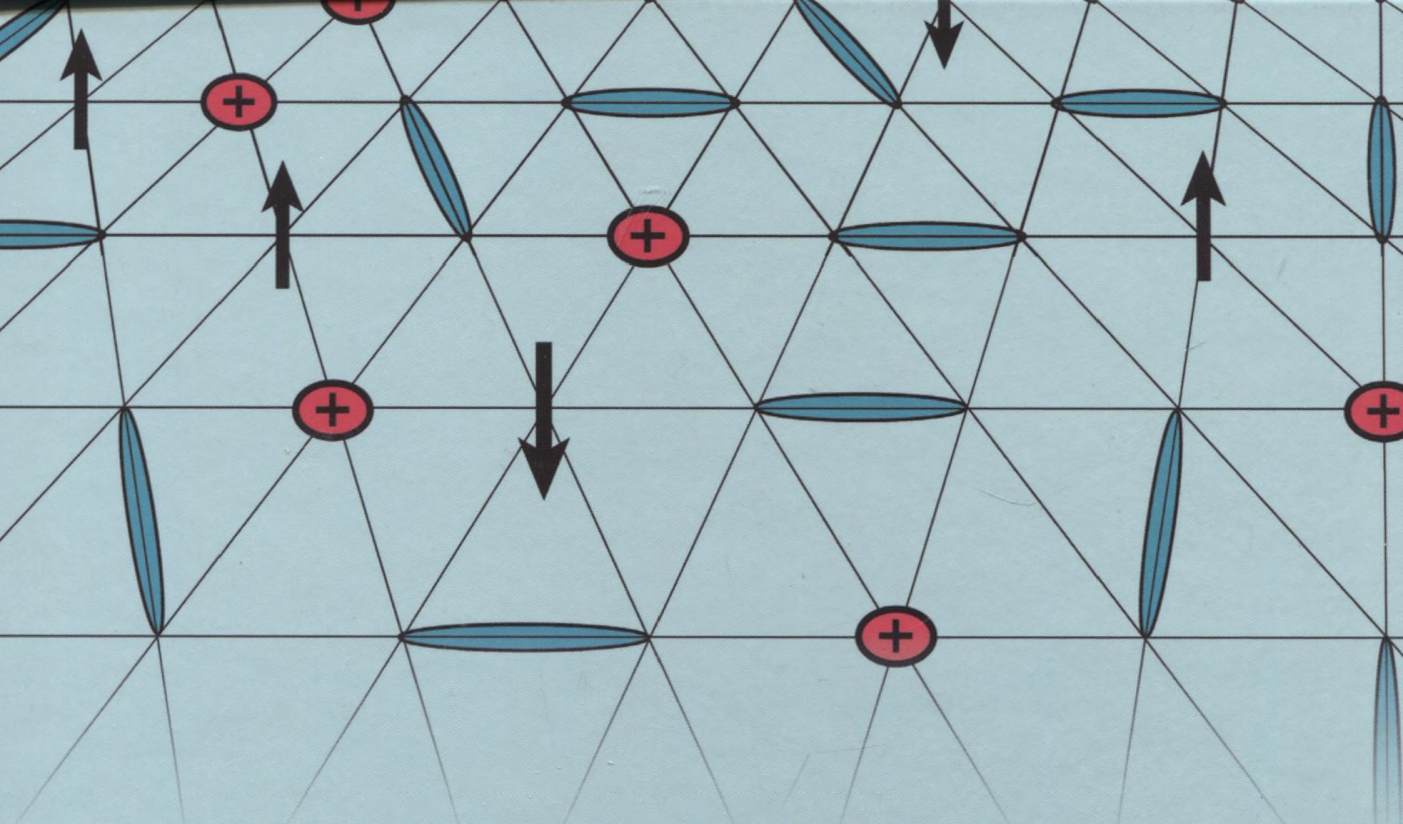




Aimed at graduate students and researchers, this book covers the key aspects of the modern quantum theory of solids, including up-to-date ideas such as quantum fluctuations and strong electron correlations. It presents the main concepts of the modern quantum theory of solids, as well as a general description of the essential theoretical methods required when working with these systems.

Using unifying concepts of order and elementary excitations, the book treats diverse topics such as the general theory of phase transitions; harmonic and anharmonic lattices; Bose condensation and superfluidity; modern aspects of magnetism including resonating valence bonds; electrons in metals and strong electron correlations. The main theoretical tools used to treat these problems are introduced and explained in a simple way, and their applications are demonstrated through concrete examples.

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<i>Foreword and general introduction</i>	<i>page ix</i>
1 Some basic notions of classical and quantum statistical physics	1
1.1 Gibbs distribution function and partition function	1
1.2 Thermodynamic functions	2
1.3 Systems with variable number of particles; grand partition function	4
2 General theory of phase transitions	6
2.1 Second-order phase transitions (Landau theory)	6
2.2 (Weak) First-order phase transitions	11
2.2.1 Another possibility of getting a first-order phase transition	13
2.3 Interaction with other degrees of freedom	14
2.4 Inhomogeneous situations (Ginzburg–Landau theory)	16
2.5 Fluctuations at the second-order phase transitions	19
2.5.1 Critical indices and scaling relations	21
2.6 Quantum phase transitions	23
2.7 General considerations	25
2.7.1 Different types of order parameters	25
2.7.2 General principle	25
2.7.3 Broken symmetry and driving force of phase transitions	26
2.7.4 The Goldstone theorem	27
2.7.5 Critical points	28
3 Bose and Fermi statistics	31
4 Phonons in crystals	34
4.1 Harmonic oscillator	34
4.2 Second quantization	35
4.3 Physical properties of crystals in the harmonic approximation	38

4.4	Anharmonic effects	41
4.4.1	Thermal expansion	43
4.4.2	Melting	45
4.4.3	Another approach to melting. Quantum melting	48
4.4.4	Low-dimensional solids; why is our world three-dimensional?	51
5	General Bose systems; Bose condensation	54
5.1	Bose condensation	54
5.2	Weakly interacting Bose gas	58
5.3	Bose condensation and superfluidity	62
5.3.1	Landau criterion of superfluidity	65
5.3.2	Vortices in a superfluid	67
6	Magnetism	70
6.1	Basic notions; different types of magnetic response	70
6.1.1	Susceptibility of noninteracting spins	74
6.2	Interacting localized moments; magnetic ordering	76
6.2.1	Mean field approximation	77
6.2.2	Landau theory for ferromagnets	80
6.2.3	Antiferromagnetic interactions	84
6.2.4	General case	87
6.3	Quantum effects: magnons, or spin waves	91
6.3.1	Magnons in ferromagnets	92
6.3.2	Antiferromagnetic magnons. Zero-point oscillations and their role	98
6.4	Some magnetic models	104
6.4.1	One-dimensional models	105
6.4.2	Resonating valence bonds, spinons and holons	109
6.4.3	Two-dimensional models	117
6.5	Defects and localized states in magnetic and other systems	123
7	Electrons in metals	127
7.1	General properties of Fermi systems	127
7.1.1	Specific heat and susceptibility of free electrons in metals	129
8	Interacting electrons. Green functions and Feynman diagrams (methods of field theory in many-particle physics)	133
8.1	Introduction to field-theoretical methods in condensed matter physics)	133
8.2	Representations in quantum mechanics	136
8.3	Green functions	139
8.4	Green functions of free (noninteracting) electrons	141

8.5	Spectral representation of Green functions	143
8.5.1	Physical meaning of the poles of $G(\mathbf{p}, \omega)$	144
8.5.2	Physical meaning of the spectral function $A(\mathbf{p}, \omega)$	146
8.6	Phonon Green functions	147
8.7	Diagram techniques	149
8.7.1	Dyson equations, self-energy and polarization operators	153
8.7.2	Effective mass of the electron excitation	156
9	Electrons with Coulomb interaction	159
9.1	Dielectric function, screening: random phase approximation	159
9.2	Nesting and giant Kohn anomalies	166
9.3	Frequency-dependent dielectric function; dynamic effects	169
10	Fermi-liquid theory and its possible generalizations	175
10.1	The foundations of the Fermi-liquid theory	175
10.2	Non-Fermi-liquid states	183
10.2.1	Marginal Fermi liquid	183
10.2.2	Non-Fermi-liquid close to a quantum critical point	184
10.2.3	Microscopic mechanisms of non-Fermi-liquid behaviour; Luttinger liquid	186
11	Instabilities and phase transitions in electronic systems	188
11.1	Peierls structural transition	188
11.1.1	Qualitative considerations	188
11.1.2	Peierls instability in the general case	190
11.1.3	Different theoretical ways to treat Peierls distortion	192
11.1.4	Peierls distortion and some of its physical consequences in real systems	198
11.2	Spin-Peierls transition	202
11.3	Charge-density waves and structural transitions, higher-dimensional systems	206
11.4	Excitonic insulators	207
11.5	Intermezzo: BCS theory of superconductivity	212
11.6	Spin-density waves	216
11.7	Different types of CDW and SDW	220
11.8	Weakly and strongly interacting fermions. Wigner crystallization	222
12	Strongly correlated electrons	229
12.1	Hubbard model	230
12.2	Mott insulators	230
12.3	Magnetic ordering in Mott insulators	234

12.4	One-particle spectrum of strongly correlated systems	235
12.4.1	Aproximate treatment (Hubbard I decoupling)	236
12.4.2	Dealing with Hubbard bands. Spectral weight transfer	238
12.4.3	Motion of electrons and holes in an antiferromagnetic background	239
12.5	Ferromagnetism in the Hubbard model?	244
12.6	Phase diagram of the Hubbard model	244
12.7	Phase separation	247
12.8	t - J model	251
12.9	Orbital ordering in the degenerate Hubbard model	252
12.10	Charge-transfer insulators	258
12.11	Insulator-metal transition	265
13	Magnetic impurities in metals, Kondo effect, heavy fermions and mixed valence	272
13.1	Localized magnetic moments in metals	272
13.2	Kondo effect	276
13.3	Heavy fermion and mixed-valence systems	282
13.4	Kondo insulators	288
13.5	Ferromagnetic Kondo lattice and double exchange mechanism of ferromagnetism	290
	<i>Bibliography</i>	296
	<i>Index</i>	298