



2nd ed. 2016, XIX, 692 p. 63 illus., 36 illus. in color.

Printed book

Hardcover

69,99 € | £52.99 | \$89.99

^[1]74,89 € (D) | 76,99 € (A) | CHF 82,50

Softcover

69,99 € | £52.99 | \$89.99

^[1]74,89 € (D) | 76,99 € (A) | CHF 82,50

eBook

58,84 € | £41.99 | \$69.99

^[2]58,84 € (D) | 58,84 € (A) | CHF 66,00

Available from your library or springer.com/shop

MyCopy ^[3]

Printed eBook for just

€ | \$ 24.99

springer.com/mycopy

RAINER DICK

Advanced Quantum Mechanics

Materials and Photons

Series: Graduate Texts in Physics

- Introduces quantum mechanics with a unique focus on examples and applications in materials science and photon-matter interactions
- Presents advanced quantum mechanics clearly enough to make it accessible to graduate students in physics, chemistry and engineering
- New and updated edition includes an additional 62 new problems to aid in student's comprehension
- Includes new and expanded sections on relativistic quantum fields and applications of quantum electrodynamics
- Includes in the appendixes very essential elements of analytical mechanics, special relativity and covariant electrodynamics

In this updated and expanded second edition of a well-received and invaluable textbook, Prof. Dick emphasizes the importance of advanced quantum mechanics for materials science and all experimental techniques which employ photon absorption, emission, or scattering. Important aspects of introductory quantum mechanics are covered in the first seven chapters to make the subject self-contained and accessible for a wide audience. Advanced Quantum Mechanics, Materials and Photons can therefore be used for advanced undergraduate courses and introductory graduate courses which are targeted towards students with diverse academic backgrounds from the Natural Sciences or Engineering. To enhance this inclusive aspect of making the subject as accessible as possible Appendices A and B also provide introductions to Lagrangian mechanics and the covariant formulation of electrodynamics. This second edition includes an additional 62 new problems as well as expanded sections on relativistic quantum fields and applications of quantum electrodynamics. Other special features include an introduction to Lagrangian field theory and an integrated discussion of transition amplitudes with discrete or continuous initial or final states. Once students have acquired an understanding of basic quantum mechanics and classical field theory, canonical field quantization is easy.

Order online at springer.com / or for the Americas call (toll free) 1-800-SPRINGER / or email us at: customerservice@springernature.com. / For outside the Americas call +49 (0) 6221-345-4301 / or email us at: customerservice@springernature.com.

The first € price and the £ and \$ price are net prices, subject to local VAT. Prices indicated with [1] include VAT for books; the €(D) includes 7% for Germany, the €(A) includes 10% for Austria. Prices indicated with [2] include VAT for electronic products; 19% for Germany, 20% for Austria. All prices exclusive of carriage charges. Prices and other details are subject to change without notice. All errors and omissions excepted. [3] No discount for MyCopy.

