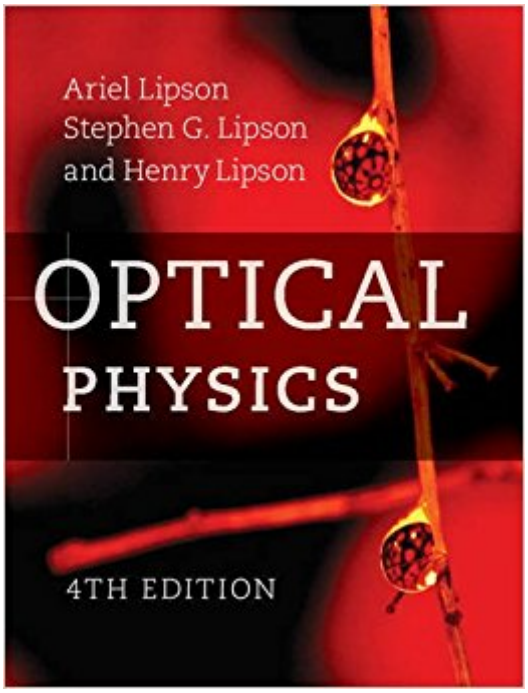
Optical Physics



Synopsis

This fourth edition of a well-established textbook takes students from fundamental ideas to the most modern developments in optics. Illustrated with 400 figures, it contains numerous practical examples, many from student laboratory experiments and lecture demonstrations. Aimed at undergraduate and advanced courses on modern optics, it is ideal for scientists and engineers. The book covers the principles of geometrical and physical optics, leading into quantum optics, using mainly Fourier transforms and linear algebra. Chapters are supplemented with advanced topics and up-to-date applications, exposing readers to key research themes, including negative refractive index, surface plasmon resonance, phase retrieval in crystal diffraction and the Hubble telescope, photonic crystals, super-resolved imaging in biology, electromagnetically induced transparency, slow light and superluminal propagation, entangled photons and solar energy collectors. Solutions to the problems, simulation programs, key figures and further discussions of several topics are available at www.cambridge.org/lipson.

Book Information

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Customer Reviews

This is a good book on optics. It is quite an advanced book and may not be suitable for beginners. It covers a broad range of topics on classical optics including geometrical optics, ray optics and physical optics. It can also be used as a reference. Another good book at about the same level is Optics by Hecht.

This book is beautifully written. The explanations are very pictorial and intuitive. Highly

recommended for self-study. There's a wealth of up-to-date theory regarding techniques stemming from a wide variety of fields associated with optical physics, such as astronomy and imaging.

Wonderfully presented, cogent, comprehensive intermediate textbook + tutorial + resource of optics from modern perspective! A true model of technical exposition made highly interesting - a textbook good enough to be bedside, also bedtime(!), companion. What it is ***NOT***: verbose! (In case those mere mortals, like me, who sometimes get tired of being beaten around the head and taken around the bush to see the fruit bearing tree want to know)... Possibly the best single optics textbook to serve as springboard to, or "unifying principle" of, other books/monographs/further specialist studies / topics. A gem of pedagogy.

Nice companion text to Hecht. Lots of fun to read.

Dmca