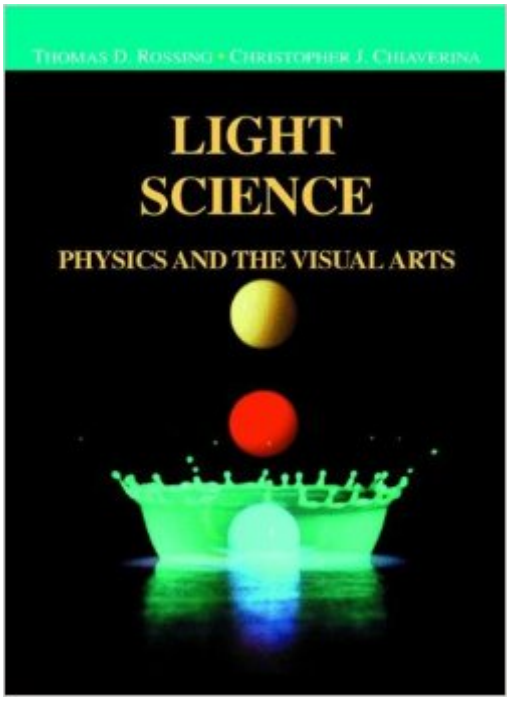
Light Science: Physics And The Visual Arts (Undergraduate Texts In Contemporary Physics)



Synopsis

Intended for students in the visual arts and for others with an interest in art, but with no prior knowledge of physics, this book presents the science behind what and how we see. The approach emphasises phenomena rather than mathematical theories and the joy of discovery rather than the drudgery of derivations. The text includes numerous problems, and suggestions for simple experiments, and also considers such questions as why the sky is blue, how mirrors and prisms affect the colour of light, how compact disks work, and what visual illusions can tell us about the nature of perception. It goes on to discuss such topics as the optics of the eye and camera, the different sources of light, photography and holography, colour in printing and painting, as well as computer imaging and processing.

Book Information

Series: Undergraduate Texts in Contemporary Physics

Hardcover: 442 pages

Publisher: Springer; 1999 edition (September 24, 1999)

Language: English

ISBN-10: 0387988270

ISBN-13: 978-0387988276

Product Dimensions: 6.7 x 1.1 x 9.6 inches

Shipping Weight: 2.2 pounds (View shipping rates and policies)

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Customer Reviews

The book by T. Rossing and C. Chiaverina is written in a profoundly elegant manner. The authors introduce the phenomena of light and colors, reflection and refraction, interference and diffraction, polarization, light sources and spectra, holography and photography, computer images and optical storages, as well as symmetry in art and nature. It is not only a textbook of contemporary optics for a one-semester undergraduate course, but it is also helpful for industry engineers working in the optical area, college professors, and physicists. Compared to most textbooks, this book has four distinct characteristics. (1) The book emphasizes the phenomena and experiments of light rather than the mathematical theories of light. (2) It includes wide fields, from geometric optics (mirror,

lens) to physical optics (slit, grating) and from quantum optics (laser, spectrum) to the symmetry, and connects them. (3) It discusses the intrinsic properties of optics and the combination of art and nature. Young students can obtain the fundamental optical concept as well as the sophisticated philosophic idea. (4) Most importantly, it stimulates the interest of the readers to explore more contents of optical phenomena and theories. My daughter, a college student, said, Â¡Ã Â I learned many things, having fun at the same timeÂ¡Ã Â .It was my pleasure to read the book and I recommend it highly.

I have used Light Science as a reference to teach an introductory optics course to middle school students. The chapters are easy to read and full of real-life examples. Each chapter concludes with quick, inexpensive experiments relating to the topic. Most experiments cost only a few dollars and use common household items. Students are excited to see the mysteries of light unfold. Lively discussions result from experiments that they can easily perform, bringing further emphasis to the topic. Light Science is in an invaluable resource for the teaching of Physical Science.

Light isn't just about electromagnetic waves - it is about human perception of those waves. This book is a wonderful resource for all teachers, and an easy and pleasurable bed-time read as well. It accurately and simply presents the pure physics of light and color and then relates it to our perception of that light and color. However, as a resource for teachers, it also provides numerous hands-on experiments suitable for students at many different levels. I'm using the polarization experiments with my high school classes at the moment. The demo using a CD as a diffraction grating is awesome, even if you don't want to explain how it works. This book is my constant companion in my effort to share "Light Science" with my students.

For what it's worth, the book does a good job of going over the basic theories of how light works. It sometimes gets a little bit too technical, but otherwise it is an interesting read.

Great price, exactly what was needed for class and it shipped to me quickly so that I had it in time to start the class.

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