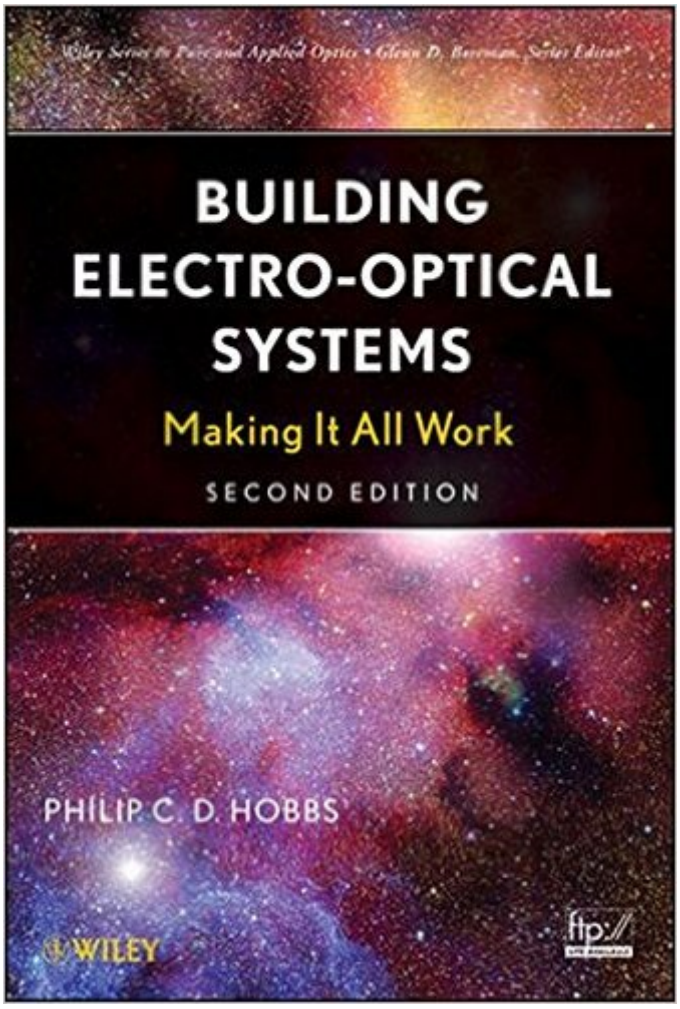
Building Electro-Optical Systems: Making It All Work



Synopsis

While most books on electro-optical systems concentrate on an individual subfield, this one presents an overview of the whole field, providing researchers with working knowledge of a number of cross-disciplinary areas. It includes essential information on how to build modern electro-optical instruments such as microscopes, cameras, optical inspection equipment, and spectrometers, and optical-related computer equipment.

Book Information

Hardcover: 820 pages

Publisher: Wiley; 2 edition (August 3, 2009)

Language: English

ISBN-10: 0470402296

ISBN-13: 978-0470402290

Product Dimensions: 7.3 x 1.8 x 10.3 inches

Shipping Weight: 3.4 pounds (View shipping rates and policies)

Average Customer Review: 5.0 out of 5 starsÂ Â See all reviewsÂ (5 customer reviews)

Best Sellers Rank: #392,690 in Books (See Top 100 in Books) #23 inÂ Books > Engineering & Transportation > Engineering > Electrical & Electronics > Electronics > Optoelectronics #34 inÂ Books > Science & Math > Physics > Light #112 inÂ Books > Science & Math > Physics > Optics

Customer Reviews

If you work on precision measurement, have ever wished for better signal-to-noise ratios (SNR) in your measurements, or have ever designed a sub-optimal optical detection scheme, it is a grave mistake to not read this book. The book is a practical, grad-student-level guide to building optical and electrical systems of the type typically found in physics/engineering labs. Most of the book is a medium-depth guide by the author to the large variety of optics, sensors, and electronics typically employed for such work. The author tells the reader the important things necessary to know in order to work with or design systems around such elements. A good portion of this knowledge is the type normally passed down in an apprentice-style fashion, and while important, is either buried behind formulas or not mentioned in most other textbooks. If I had known about this book earlier, it would have saved me many hundreds of hours when I was a graduate student. This book is the first place I look when designing new systems with parts/devices/methods I am not intimately familiar with.There are many things I like about this book. Here are a few that come to mind: a) When

explaining why a specific device or approach should be employed, an intuitive explanation is always given, rather than sole reliance on equations. b) The author can be counted on to warn readers about obvious pitfalls that are usually learned the hard way. For example, the last handful of bits in a 24 bit Sigma Delta ADC are typically useless, transimpedance amplifiers can push noise out to high frequencies, and metal film resistors are generally best to use over other types. c) The author has a lot, a lot of good tricks he's learned over the years: For example, a flashlight is an excellent shot-noise-limited light source.

Backyard Chickens, Chicken Coop Plans, Building Chicken Coops) Chicken Coop Building: The Complete Beginners Guide To Chicken Coop Building - Discover Amazing Plan To Building The Perfect Chicken Coop! (Chicken Coops ... Coop Plans, How To Build A Chicken Coop)