

Optomechanical Systems Engineering (Wiley Series in Pure and Applied Optics)

By Keith J. Kasunic

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Optomechanical Systems Engineering (Wiley Series in Pure and Applied Optics) By Keith J. Kasunic

Covers the fundamental principles behind optomechanical design

This book emphasizes a practical, systems-level overview of optomechanical engineering, showing throughout how the requirements on the optical system flow down to those on the optomechanical design. The author begins with an overview of optical engineering, including optical fundamentals as well as the fabrication and alignment of optical components such as lenses and mirrors. The concepts of optomechanical engineering are then applied to the design of optical systems, including the structural design of mechanical and optical components, structural dynamics, thermal design, and kinematic design.

Optomechanical Systems Engineering:

- Reviews the fundamental concepts of optical engineering as they apply to optomechanical design
- Illustrates the fabrication and alignment requirements typically found in an optical system
- Examines the elements of structural design from a mechanical, optical, and vibrational viewpoint
- Develops the thermal management principles of temperature and distortion control
- Describes the optomechanical requirements for kinematic and semi-kinematic mounts
- Uses examples and case studies to illustrate the concepts and equations presented in the book
- Provides supplemental materials on a companion website

Focusing on fundamental concepts and first-order estimates of optomechanical system performance, *Optomechanical Systems Engineering* is accessible to engineers, scientists, and managers who want to quickly master the principles of optomechanical engineering.

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Editorial Review

Review

"The whole book is written in a very accessible style, and there are plenty of good exercises for the reader. It would be a good resource for engineers and research students entering the field." (*Optics & Photonics News*, 4 September 2015)

From the Back Cover
Optomechanical Systems Engineering emphasizes a practical, systems-level overview of optomechanical engineering, bridging the gap between mechanical and optical design. Starting with the fundamentals of imaging, it reviews how optical system concepts flow down into optomechanical requirements, including chapters on:

- Optical fundamentals
- Optical fabrication
- Optical alignment
- Structural design of mechanical components
- Structural design of optical components
- Structural vibrations
- Thermal management
- Kinematic design
- System design

The focus is on the fundamental principles underlying real-world design problems, as well as the commercial off-the-shelf (COTS) components used to solve them. By focusing on fundamental concepts and first-order, back-of-the-envelope estimates of optomechanical system performance, **Optomechanical Systems Engineering** is accessible to engineers, scientists, and managers who want to quickly master the principles of optomechanical engineering.

About the Author
Keith J. Kasunic has more than 25 years of experience developing optical, electro-optical, infrared, and laser systems. He holds a Ph.D. in Optical Sciences from the University of Arizona, an MS in Mechanical Engineering from Stanford University, and a BS in Mechanical Engineering from MIT. He is currently the Technical Director of Optical Systems Group LLC. He also teaches courses on optomechanical engineering as an SPIE Instructor, an Affiliate Instructor with Georgia Institute of Technology's SENSIAC, an Instructor for the Optical Engineering Certificate Program at University of California–Irvine, and an Adjunct Professor at University of Central Florida's CREOL.

Users Review

From reader reviews:

Katrina Frey:

Now a day individuals who Living in the era wherever everything reachable by connect with the internet and the resources in it can be true or not call for people to be aware of each facts they get. How a lot more to be smart in having any information nowadays? Of course the solution is reading a book. Studying a book can help individuals out of this uncertainty Information particularly this Optomechanical Systems Engineering (Wiley Series in Pure and Applied Optics) book because this book offers you rich info and knowledge. Of course the details in this book hundred pct guarantees there is no doubt in it everbody knows.

Douglas Dossett:

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Brett Munoz:

Optomechanical Systems Engineering (Wiley Series in Pure and Applied Optics) can be one of your beginner books that are good idea. Most of us recommend that straight away because this guide has good vocabulary that will increase your knowledge in language, easy to understand, bit entertaining but delivering the information. The article author giving his/her effort to put every word into joy arrangement in writing Optomechanical Systems Engineering (Wiley Series in Pure and Applied Optics) but doesn't forget the main place, giving the reader the hottest and also based confirm resource details that maybe you can be one of it. This great information can drawn you into brand new stage of crucial contemplating.

Jessie Adams:

With this era which is the greater man or who has ability to do something more are more treasured than other. Do you want to become one of it? It is just simple way to have that. What you need to do is just spending your time almost no but quite enough to possess a look at some books. One of several books in the top record in your reading list is Optomechanical Systems Engineering (Wiley Series in Pure and Applied Optics). This book which is qualified as The Hungry Slopes can get you closer in turning out to be precious person. By looking upward and review this publication you can get many advantages.

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