### Optomechanical Systems Engineering

Keith J. Kasunic

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<th>Format</th>
<th>ISBN</th>
<th>Date</th>
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<tr>
<td>E-Book</td>
<td>978-1-118-91961-3</td>
<td>April 2015</td>
<td>$99.99</td>
</tr>
<tr>
<td>Hardcover</td>
<td>978-1-118-80932-7</td>
<td>April 2015</td>
<td>$124.75</td>
</tr>
<tr>
<td>O-Book</td>
<td>978-1-118-80986-0</td>
<td>March 2015</td>
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**DESCRIPTION**

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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**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.

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