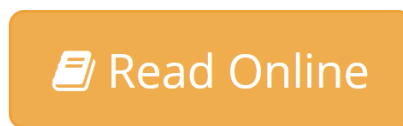


# Broadband Optical Modulators: Science, Technology, and Applications

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## Broadband Optical Modulators: Science, Technology, and Applications

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*"...provides the full, exciting story of optical modulators. ... a comprehensive review, from the fundamental science to the material and processing technology to the optimized device design to the multitude of applications for which broadband optical modulators bring great value. ... Especially valuable in my view is that the authors are internationally known researchers, developers, and systems people who are experts in their field, writing now, with the perspective that time offers, about their groundbreaking work. "*

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Considered the most comprehensive book yet published on this critical subject, **Broadband Optical Modulators: Science, Technology, and Applications** offers an incredibly wide-ranging yet in-depth overview of the state of the art in the design and use of optical modulators. A compilation of expert insights, this book covers fundamental and practical aspects, from materials to systems, addressing historical and more recent developments.

Coverage includes:

- Optical and electro-optic properties of traditional single crystalline lithium niobate, silicon, and III-V compound semiconductors, as well as emerging electro-optic polymers and organic nonlinear optic crystals
- Discussion of factors important to modulator design, fabrication, and performance
- Fundamental topics, such as electro-optic effect in nonlinear optic crystals and semiconductors

Leaders in the field created this invaluable reference for scientific researchers involved in high-speed device research and development, especially in the areas of optical transmitters and optical modulators for fiber-optics communication systems. Helping readers master optical modulation techniques, this book will be invaluable to engineers (system/subsystem designers, product developers, and

technical and project managers) and other professionals in the telecommunications and defense industries. It offers the audience?which includes graduate students?an in-depth understanding of the new modulator architectures and technologies now available, as well as the strengths, weaknesses, advantages, and trade-offs associated with each.

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**Bibliography**

- Sales Rank: #2147769 in Books

- Published on: 2011-11-16
- Original language: English
- Number of items: 1
- Dimensions: 1.40" h x 7.20" w x 10.20" l, 2.60 pounds
- Binding: Hardcover
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#### Review

Graduate students and research scientists will benefit from this outstanding book. Readers interested in recent technologies will find several chapters devoted to applications beyond the digital telecom system. This excellent volume also offers newcomers a great introduction to the subject ... those interested in modulator operation will appreciate the coverage on modulator drivers, reliability of lithium niobate modulators and bias control techniques.

*?Optics & Photonics News*

This book ... provides the full exciting story of optical modulators. It is a comprehensive review from the fundamental science, ... material and processing technology to optimized device design [and] the multitude of applications ... .The book should prove valuable to a broad spectrum of readers, including graduate students, new entrants to the field and systems researchers and engineers who want either an overview or in-depth understanding of this exciting and highly enabling field.

?From the Foreword by Rodney C. Alferness, Bell Laboratories, Alcatel-Lucent, USA

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