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### Optical Fiber Telecommunications Volume VIB: Systems and Networks (Optics and Photonics)

From Academic Press



**Optical Fiber Telecommunications Volume VIB: Systems and Networks** (**Optics and Photonics**) From Academic Press

Optical Fiber Telecommunications VI (A&B) is the sixth in a series that has chronicled the progress in the R&D of lightwave communications since the early 1970s. Written by active authorities from academia and industry, this edition brings a fresh look to many essential topics, including devices, subsystems, systems and networks. A central theme is the enabling of high-bandwidth communications in a cost-effective manner for the development of customer applications. These volumes are an ideal reference for R&D engineers and managers, optical systems implementers, university researchers and students, network operators, and investors.

Volume A is devoted to components and subsystems, including photonic integrated circuits, multicore and few-mode fibers, photonic crystals, silicon photonics, signal processing, and optical interconnections.

Volume B is devoted to systems and networks, including advanced modulation formats, coherent detection, Tb/s channels, space-division multiplexing, reconfigurable networks, broadband access, undersea cable, satellite communications, and microwave photonics.

- All the latest technologies and techniques for developing future components and systems
- Edited by two winners of the highly prestigious OSA/IEEE John Tyndal award and a President of IEEE's Lasers & Electro-Optics Society (7,000 members)
- Written by leading experts in the field, it is the most authoritative and comprehensive reference on optical engineering on the market

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#### **Editorial Review**

#### Review

"It consists of two impressive volumes... It covers quite a few advances and novelties in the field, such as streaming, routing, and switching in optical networks; higher-order modulation; and space division multiplexing... It requires a reasonably knowledgeable reader...searching for a particular topic of interest to study in more detail."--Computing Reviews, May 20, 2014 "Optical fiber communications researchers and engineers, most at corporations but some in academic and public laboratories, update the compendium of current knowledge from the 2008 fifth edition. This second of two volumes concentrates on systems and networks."--Reference & Research Book News, October 2013 "For more than three decades, the OFT series has served as the comprehensive primary resource covering progress in the science and technology of optical fiber telecoms. It has been essential for the bookshelves of researchers and engineers active in the field. OFT VI provides updates on considerable progress in established disciplines, as well as introductions to important new topics. [OFT VI] ... generates a value that is even higher than that of the sum of its chapters."--Herwig Kogelnik, Vice President Adjunct, Bell Labs, Alcatel-Lucent "Optical fiber telecommunications is the Internet's "silver bullet". Without [its] innovations, we would not be enjoying today's abundance of bandwidth and the Internet's many unforeseen applications. [This field's] amazing pace of innovation has been long sustained due partially to this historic book series now extended by OFT VI... This series has long served to help organize, communicate, and set the agenda for innovations, thereby accelerating them. [For example, 100Mbps Ethernet] ... was carried on optical fibers in the 1970s. Today, we have standardized 100Gbps Ethernet. Who knows where OFT VI will lead, but surely to Terabit Ethernet, and soon."--Bob Metcalfe, Ethernet inventor and Professor, University of Texas at Austin "This sixth edition ... is not a simple update of this technical field, but it is extending its coverage to include new materials, devices, systems, and applications. It is the next step forward to cover the entire photonics networking technology field that supports our information-based society. I strongly recommend this musthave book to both academic and industrial readers."--Hideo Kuwahara, Fellow, Fujitsu Laboratories Ltd. "This field ... continues its amazing rate of technological progress as it transforms the world's economic infrastructure. ... In order [for new businesses and services] to benefit from these advances, it is essential to understand the new technologies and their potential to transform the world. In these volumes, the authors continue the outstanding task of bringing together ... many of the world's leading technologists in a manner that offers lucid descriptions of the most important recent innovations. This excellent and unique book belongs in the library of all those involved in optical communications and their applications."--Henry Kressel, Managing Director, Warburg Pincus

#### From the Back Cover

Optical Fiber Telecommunications VI (A&B) is the sixth in a series that has chronicled the progress in the R&D of lightwave communications since the early 1970s. Written by active authorities from academia and industry, this edition brings a fresh look to many essential topics, including devices, subsystems, systems and networks. A central theme is the enabling of high-bandwidth communications in a cost-effective manner for the development of customer applications. These volumes are an ideal reference for R&D engineers and managers, optical systems implementers, university researchers and students, network operators, and investors.

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#### About the Editors:

Ivan Kaminow retired from Bell Labs in 1996 after a 42-year career. He conducted seminal studies on electrooptic modulators and materials, Raman scattering in ferroelectrics, integrated optics, semiconductor lasers (DBR, ridge waveguide), birefringent optical fibers, and WDM networks. Later, he led research on WDM components (EDFA, AWG, fiber FP filter) and networks. He is a member of the National Academy of Engineering and a recipient of the IEEE Edison Medal, OSA Ives Medal, and IEEE Photonics Award. Since 2004, he has been Adjunct Professor of EE at the University of California, Berkeley.

Tingye Li (July 1931- Dec. 2012) retired from AT&T in 1998 after a 41-year career at Bell Labs and AT&T Labs. His seminal work on laser resonator modes is considered a classic. Since the late 1960s, he and his groups had conducted pioneering studies on lightwave technologies and systems. He led the work on amplified WDM transmission systems and championed their deployment for upgrading network capacity. He was a member of the National Academy of Engineering and a foreign member of the Chinese Academy of Engineering. He received the IEEE Edison Medal, OSA Ives Medal, IEEE Photonics Award, and IEEE David Sarnoff Award. He served as President of OSA.

Alan Willner has worked at AT&T Bell Labs and Bellcore, and he is the Steven & Kathryn Sample Chair in Engineering at the University of Southern California. He received the Int'l Fellow of the U.K. Royal Academy of Engineering, NSF Presidential Faculty Fellows Award from the White House, Guggenheim and Packard Fellowships, OSA Engineering Excellence Award, and IEEE Photonics Society Engineering Achievement Award. He has served as Co-Chair of U.S. National Academies Study on Optics & Photonics, President of IEEE Photonics Society, and Editor-in-Chief of Optics Letters and IEEE/OSA Journal of Lightwave Technology.

Praise for Optical Fiber Telecommunications:

For more than three decades, the OFT series has served as **the** comprehensive primary resource covering progress in the science and technology of optical fiber telecoms. It has been essential for ... researchers and engineers active in the field. OFT VI provides updates on considerable progress in established disciplines, as well as introductions to important new topics. [OFT VI] ... generates a value that is even higher than that of the sum of its chapters.

Herwig Kogelnik, Vice President Adjunct, Bell Labs, Alcatel-Lucent

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Bob Metcalfe, Ethernet inventor and Professor, University of Texas at Austin

OFT VI ... is not a simple update of this field, but it is extending its coverage to include new materials, devices, systems and applications. It is the next step forward to cover the entire photonics networking technology field that supports our information-based society. I strongly recommend this must-have book to both academic and industrial readers.

#### Hideo Kuwahara, Fellow, Fujitsu Laboratories Ltd.

This field ... continues its amazing rate of technological progress as it transforms the world's economic infrastructure. ... [The] authors continue the outstanding task of bringing together ... many of the world's leading technologists in a manner that offers lucid descriptions of the most important recent innovations. This excellent and unique book belongs in the library of all those involved in optical communications and their applications.

Henry Kressel, Managing Director, Warburg Pincus

#### About the Author

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Alan Willner has worked at AT&T Bell Labs and Bellcore, and he is Professor of Electrical Engineering at the University of Southern California. He received the NSF Presidential Faculty Fellows Award from the White House, Packard Foundation Fellowship, NSF National Young Investigator Award, Fulbright Foundation Senior Scholar, IEEE LEOS Distinguished Lecturer, and USC University-Wide Award for Excellence in Teaching. He is a Fellow of IEEE and OSA, and he has been President of the IEEE LEOS, Editor-in-Chief of the IEEE/OSA J. of Lightwave Technology, Editor-in-Chief of Optics Letters, Co-Chair of the OSA Science & Engineering Council, and General Co-Chair of the Conference on Lasers and Electro-Optics.

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#### From reader reviews:

#### Lisa Jennings:

Why don't make it to be your habit? Right now, try to prepare your time to do the important act, like looking for your favorite guide and reading a book. Beside you can solve your short lived problem; you can add your knowledge by the reserve entitled Optical Fiber Telecommunications Volume VIB: Systems and Networks (Optics and Photonics). Try to make the book Optical Fiber Telecommunications Volume VIB: Systems and Networks (Optics and Photonics) as your friend. It means that it can to be your friend when you feel alone and beside those of course make you smarter than ever. Yeah, it is very fortuned for you. The book makes you a lot more confidence because you can know everything by the book. So , let us make new experience and knowledge with this book.

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#### **Gerard Pucci:**

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#### **Diana Gum:**

Within this era which is the greater individual or who has ability to do something more are more precious than other. Do you want to become among it? It is just simple solution to have that. What you are related is just spending your time not very much but quite enough to have a look at some books. One of the books in the top record in your reading list is definitely Optical Fiber Telecommunications Volume VIB: Systems and Networks (Optics and Photonics). This book and that is qualified as The Hungry Hillsides can get you closer in turning out to be precious person. By looking upwards and review this guide you can get many advantages.

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