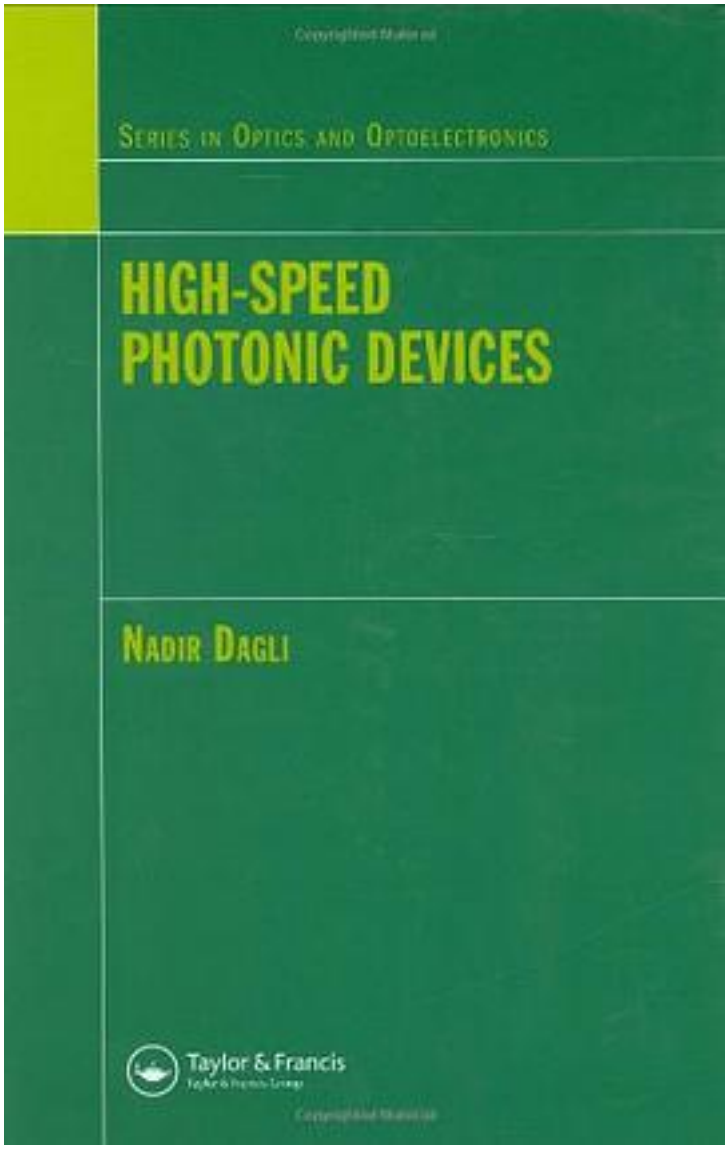
High Speed Photonic Devices



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With the ongoing, worldwide installation of 40 Gbit/s fiber optic transmission systems, there is an urgency to learn more about the photonic devices supporting this technology. Focusing on the components used to generate, modulate, and receive optical signals, High-Speed Photonic Devices presents the state-of- the-art enabling technologies behind high-speed telecommunication systems. Written by experts in the field, the book explores high-speed transmitters, receivers, electronics, and all-optical techniques. Following a brief introduction of the devices, the subsequent chapters cover...High-speed, low-driving voltage electroabsorption modulators and their integration with distributed-feedback lasers for high-bitrate and long-haul optical fiber transmission systems Linear electro-optic Ti-diffused LiNbO3 devices, specifically, traveling-wave high-speed modulators III-V compound semiconductor electro-optic modulators High-speed polymer device technology and numerous examples of new material combinations Fundamental physical processes used in common photodetectors as well as some emerging photodetector designs High-speed electronic devices and integrated circuit technologies for very high-speed future lightwave communication systems Very high-speed all-optical technologies required for multi-terabit/s optical fiber transmission systems. Although it is hard to predict which particular technology will prevail in the future, you can be sure that the systems discussed in High-Speed Photonic Devices will help pave the way for low-cost, high-performance fiber optic networks that will cover the entire globe. This improved and easily accessible communications capability will no doubt better the quality of life for everyone.

作者介绍:

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