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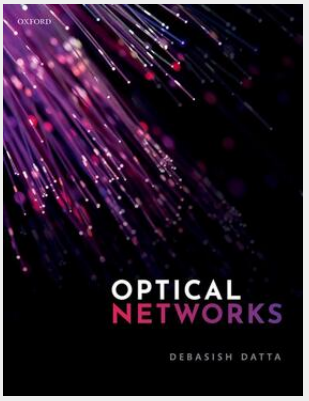
Optical Networks

Following the emergence of lasers and optical fibers, optical networking made its beginning in the 1970s with high-speed LANs/MANs. In the 1980s, when the bandwidth of intercity microwave links turned out to be inadequate for digital telephony, the technology for single-wavelength optical communications using SONET/SDH arrived as a saviour to replace the microwave links. However, single-wavelength links couldn't utilize the huge bandwidth (40 THz) of optical fibers, while the bandwidth demands kept soaring. This necessitated the use of wavelength-division multiplexing (WDM) for concurrent transmission over multiple wavelengths, increasing the available bandwidth significantly. Today, optical networking has become an indispensable part of telecommunication networks at all hierarchical levels. The book Optical Networks provides a graduate level presentation of optical networks, capturing the past, present and ensuing developments with a unique blend of breadth and depth. The book is organized in four parts and three appendices. Part I presents an overview and the enabling technologies in two chapters, Part II presents the single-wavelength optical networks in three chapters, while Part III deals with the various forms of WDM optical networks in four chapters. Finally, Part IV presents some selected topics in six chapters, dealing with a number of contemporary and emerging topics. Optical Networks provides a comprehensive all-in-one text for beginning graduate as well as final-year undergraduate students, and also allows R&D engineers to quickly refresh the basics and then move on to emerging topics.



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