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Datacenter Connectivity Technologies: Principles and Practice

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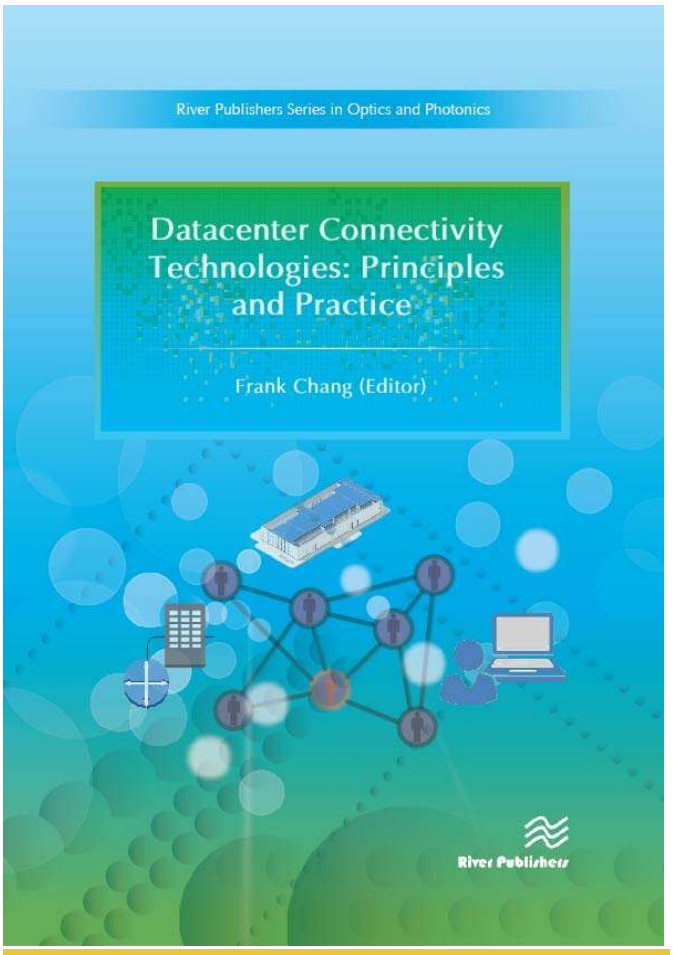
In recent years, investments by cloud companies in mega data centers and associated network infrastructure has created a very active and dynamic segment in the optical components and modules market. Optical interconnect technologies at high speed play a critical role for the growth of mega data centers, which flood the networks with unprecedented amount of data traffic.

Datacenter Connectivity Technologies : Principles and Practice provides a comprehensive and in-depth look at the development of various optical connectivity technologies which are making an impact on the building of data centers. The technologies span from short range connectivity, as low as 100 meters with multi-mode fiber (MMF) links inside data centers, to long distances of hundreds of kilometers with single-mode fiber (SMF) links between data centers.

This book is the first of its kind to address various advanced technologies connecting data centers. It represents a collection of achievements and the latest developments from well-known industry experts and academic researchers active in this field.

Technical topics covered in this book include:

- Mega data center requirements
- High volume VCSELs
- Directly modulated lasers
- Electro-absorption modulated lasers
- Pulse amplitude modulation (PAM)
- Discrete Multi-Tone modulation (DMT)
- Optical Duobinary Transmission
- Optical fibers and connectors
- Mach-zenhder modulators
- Silicon photonics
- Optical waveguide devices and packaging
- Testing and measurements
- Advanced modulation formats
- Optical coherent networks
- High-speed IC design & packaging



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