



## Holographic Data Storage [

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Springer

Physics Computer engineering Physics Optics, Optoelectronics,  
Plasmonics and Optical Devices Electrical Engineering

Monografía

Holographic Data Storage is an outstanding reference book on an exciting topic reaching out to the 21st century's key technologies. The editors, Hans J. Coufal (IBM), Demetri Psaltis (CalTech), and Glenn Sincerbox (University of Arizona), together with leading experts in this area of research from both academic research and industry, bring together the latest knowledge on this technique. The book starts with an introduction on the history and fundamentals, multiplexing methods, and noise sources. The following chapters describe in detail recording media, components, channels, platforms for demonstration, and competing technologies such as classical hard disks or optical disks. More than 700 references make this book the ultimate source of information for the years to come. The book is intended for physicists, optical engineers, and executives alike

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**Contenido:** I Introduction -- History and Physical Principles -- Volume Holographic Multiplexing Methods -- Fundamental Noise Sources in Volume Holographic Storage -- II Recording Media -- Bit Error Rate for Holographic Data Storage -- Media Requirements for Digital Holographic Data Storage -- Inorganic Photorefractive Materials -- Hologram Fixing and Nonvolatile Storage in Photorefractive Materials -- Two-Color Holography in Lithium Niobate -- Overview of Photorefractive Polymers for Holographic Data Storage -- Photopolymer Systems -- Photopolymers for Digital Holographic Data Storage -- Photoaddressable Polymers -- III Components -- Laser Sources -- Beam Deflectors and Spatial Light Modulators for Holographic Storage Application -- Beam Conditioning Techniques for Holographic Recording Systems -- Detector Arrays for Digital Holographic Storage Applications -- IV Channels -- Modulation Codes for Holographic Recording -- Interleaving and Error Correction for Holographic Storage -- Equalization for Volume Holographic Data Storage Systems -- Gray-Scale Data Pages for Digital Holographic Data Storage -- V Demonstration Platforms -- System Optimization for Holographic Data Storage Systems -- Tamarack Optical Head Holographic Storage -- High-Density, High-Performance Data Storage via Volume Holography: The Lucent Technologies Hardware Platform -- IBM Holographic Digital Data Storage Test Platforms -- Digital Holographic Demonstration Systems by Stanford

University and Siros Technologies -- Holographic Read-Only Memory -- Digital Holographic Data Storage with Fast Access -- A Demonstration Platform for Phase-Coded Multiplexing -- Volume Holographic Optical Correlators -- VI Competing Technologies -- The Continuing Evolution of Magnetic Hard Disk Drives -- Optical Disk Storage Roadmap -- Alternative Storage Techniques

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