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Nota di contenuto	Photonics; Contents; List of Contributors; Preface; 1 Solid-State Lighting: Toward Smart and Ultraefficient Materials, Devices, Lamps, and Systems; 1.1 A Brief History of SSL [1]; 1.1.1 Stepping Stones: Red and Blue LEDs; 1.1.2 State-of-the-Art SSL Device Architecture: InGaN Blue LED + Green/Red Phosphors; 1.1.3 State-of-the-Art SSL Lamp Architectures; 1.1.4 SSL Applications; 1.2 Beyond the State-of-the-Art: Smart and Ultraefficient SSL; 1.2.1 Characteristics: Multicolor Electroluminescence, Narrowband Spectra, High Modulation Speed; 1.2.2 Potential Future System Applications 1.2.3 Benefits: "Effective" Efficiency, Consumption of Light, and GDP1.3 Ultraefficient SSL Lighting: Toward Multicolor Semiconductor Electroluminescence; 1.3.1 Blue Materials and Devices; 1.3.2 Green Materials and Devices; 1.3.3 Red Materials and Devices; 1.4 Smart Solid-State Lighting: Toward Control of Flux and Spectra in Time and Space; 1.4.1 Optical Integration: Mixing Colors While Maintaining Low Etendue; 1.4.2 Optoelectronic Integration: Reliability, Functionality, and Cost; 1.4.3 Optomechanical Integration: Control of Flux in Space; 1.5

Summary and Conclusions; Acknowledgments

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2 Integrated Optics Using High Contrast Gratings; 2.1 Introduction; 2.2 Physics of Near-Wavelength Grating; 2.2.1 Overview of the Underlying Principles; 2.2.2 Analytical Formulation; 2.2.3 HCG Supermodes and Their Interferences; 2.2.4 HCG Band Diagram; 2.3 Applications of HCGs; 2.3.1 High-Contrast-Grating-Based VCSELs; 2.3.2 All-Pass Optical Filter Array as Optical Phase Array; 2.3.3 Planar High Numerical Aperture Focusing Reflectors and Lenses; 2.3.4 Resonator with Surface-Normal Optical Coupling; 2.3.5 HCG for High-Precision Metrology
2.3.6 High Contrast Grating Hollow-Core Waveguide
2.3.7 HCG Photon Cage; 2.3.8 Vertical-to-in-Plane Optical Coupler; 2.4 Summary; Acknowledgments; References;
3 Plasmonic Crystals: Controlling Light With Periodically Structured Metal Films; 3.1 Introduction; 3.2 Surface Plasmon Polaritons; 3.3 Basics of Surface Plasmon Polaritonic Crystals; 3.3.1 Bloch Mode Structure; 3.3.2 Enhanced Optical Transmission Through Plasmonic Crystals; 3.3.3 Improving Surface Transparency of Dielectrics with Nanostructured Metal; 3.4 Polarization and Wavelength Management with Plasmonic Crystals
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3.6.3 Acoustic Effects in Plasmonic Crystals

Sommario/riassunto

"The Handbook of Photonics third volume addresses photonics technology and application. It discusses communication networks, data buffers, defense and security applications, detectors, fiber optics and amplifiers, green photonics, instrumentation and metrology, interferometers, light-harvesting materials, logic devices, optical communications, remote sensing, solar energy, solid-state lighting, and wavelength conversion"--

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