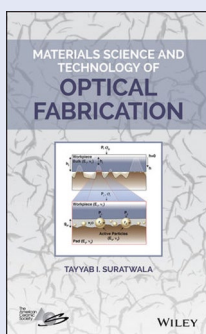


Silicon Photonics

Edited by Sebastian Lourdudoss, Ray T. Chen and Chennupati Jagadish

ACADEMIC PRESS: 2018. 240PP. £169.00.

This first edition reviews recent advances in the field of silicon photonics, including photonic crystal lasers and nanolasers on silicon, monolithic quantum-dot light source for silicon photonics, membrane lasers and photodiodes on silicon, photonic integrated circuits on silicon, and III-V-on-silicon nanocomposites. Advanced technologies, such as transfer printing in silicon photonics, epitaxial integration of antimonide-based semiconductor lasers on silicon, the heterogeneous integration of III-V on silicon by bonding, the growth of III-V on silicon-compliant substrates and lasers by metal-organic chemical vapour deposition are also described. Last but not least, integrated photonics for bio- and environmental sensing is presented.

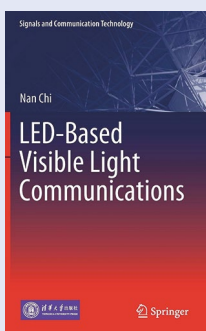


Materials Science and Technology of Optical Fabrication

By Tayyab I. Suratwala

WILEY: 2018. 416PP. £114.00.

This book presents novel characterization and fabrication techniques for improving and better understanding the optical fabrication process to increase the yield of higher-quality optics. It focuses on the fundamentals of grinding and polishing, from a materials science viewpoint, by examining the chemical and mechanical interactions and phenomena that occur over many length scales between the workpiece, slurry and lap. The book is divided into two sections. The first explains how the phenomena and corresponding process parameters affect the characteristics of the optic workpiece, namely surface figure (surface deviation from the perfect shape of the test plate), surface quality, surface roughness and material removal rate. The second section describes methods for improving the aforementioned characteristics of the workpiece as well as for improving process yield, such as fractography and scratch forensics. Also included are descriptions of polishing methods and special techniques used for fabricating optics with high damage resistance.

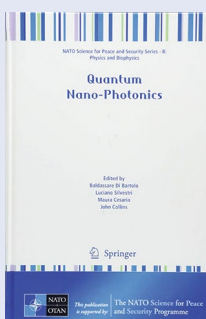


LED-Based Visible Light Communications

By Nan Chi

SPRINGER: 2018. 245PP. £44.99.

This title introduces the visible light communication (VLC) technology based on light-emitting diodes (LEDs). Composed of nine chapters, it discusses the basic concepts and ways to realize the system, including the transmitter, channel and the receiver. It also presents the modulation technologies of VLC, its pre- and post-equalization technologies, high-speed VLC system experiments and VLC technology development trends.



Quantum Nano-Photonics

Edited by Baldassare Di Bartolo, Luciano Silvestri, Maura Cesaria and John Collins

SPRINGER: 2018. 474PP. £89.99.

This volume aims to bring together researchers working in the fields of quantum optics and nano-optics. Consisting of 46 chapters, it discusses the main topics of interest in applied and fundamental research from pedagogical introductions on the fundamental principles to the current state-of-the-art. Topics covered include, for example, nanophotonics with and without photons, single-photon emitters and emitters of entangled photon pairs based on epitaxially grown semiconductor quantum dots, terahertz nanoscale science and technology, nitrogen-vacancy centres in diamond as single-photon emitters, Casimir forces, semiconductor nanophotonics using surface polaritons, quantum aspects of biophotonics, waveguide-integrated superconducting single-photon detectors, coupled quantum bits based on trapped ions, quantum nanoplasmonics, and quantum metamaterials.

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