1. Record Nr. UNINA9910309859803321

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Titolo	Silicon Optoelectronic Integrated Circuits / / by Horst Zimmermann
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2018
ISBN	3-030-05822-0
Edizione	[2nd ed. 2018.]
Descrizione fisica	1 online resource (XXI, 441 p. 449 illus., 71 illus. in color.)
Collana	Springer Series in Advanced Microelectronics, , 1437-0387 ; ; 13
Disciplina	621.36
Soggetti	Lasers Photonics Optical materials Electronics - Materials Electronic circuits Nanotechnology Electronics Microelectronics Optics, Lasers, Photonics, Optical Devices Optical and Electronic Materials Circuits and Systems Electronics and Microelectronics, Instrumentation
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Basics and Theory -- Integrated Silicon Photodetectors -- Detectors in Thin Crystalline Silicon Films -- SiGe Photodetectors -- Design of Integrated Optical Receiver Circuits -- 6 Examples of Optoelectronic Integrated Circuits -- Circuits for Electronic-Photonic Integration.
Sommario/riassunto	This book reviews various topics in optoelectronics and the design of microelectronic circuits. It introduces readers to the essential features of optical absorption and device physics of photodetectors, as well as their integration in modern CMOS and BiCMOS technologies. This information provides the basis for understanding the underlying mechanisms of Optoelectronic Integrated Circuits (OEICs), which are described in the main part of the book. In the second edition of this

book, new and outstanding integrated high-bandwidth pin photodiodes as well as avalanche photodiodes in the linear mode and in the Geiger mode are introduced. To cover the topic comprehensively, the book presents detailed descriptions of OEICs for a wide range of applications: from various optical sensors, smart sensors, image sensors, 3D-sensors and optical storage systems, to fiber receivers and receivers for optical wireless communication, as well as single-photon detection. This new edition also reflects the latest trends in OEIC research on integrated optical receivers at the quantum limit and electronic-photonic integration, and highlights outstanding 3D-integrated application examples like a multi-node optical switch, an optical transceiver, and a high-resolution 3D sensor. .