1. Record Nr. UNINA9910438046103321

Titolo	Integrated Circuits for Analog Signal Processing / / edited by Esteban Tlelo-Cuautle
Pubbl/distr/stampa	New York, NY : , : Springer New York : , : Imprint : Springer, , 2013
ISBN	1-283-53177-1 9786613844224 1-4614-1383-4
Edizione	[1st ed. 2013.]
Descrizione fisica	1 online resource (326 p.)
Altri autori (Persone)	Tlelo-CuautleEsteban
Disciplina	621.38173
Soggetti	Electronic circuits Electronics Signal processing Electronic Circuits and Systems Electronics and Microelectronics, Instrumentation Signal, Speech and Image Processing
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Analysis, Design and Optimization of Active Devices -- Nullors, their Bipolar CMOS Implementations and Applications in Analog Circuit Synthesis and Design -- Current Feedback Op-Amps, their Variants, Integratable Implementations and Applications in Analog Signal Processing -- Generation of Grounded Capacitors Minimum Component Oscillators -- Active Filter Design Using a Two-Graph Based Transformation Technique -- Analog Baseband Filter Design Considerations for Wireless Receivers -- Flexible Nanometer CMOS Low-Noise Amplifiers for the Next-Generation Software-Defined-Radio Mobile Systems -- Clocked Nanometer CMOS Comparators -- Low-Power Electronics for Biomedical Sensors -- Sensor Conditioning Circuits -- Steady State Simulation of Mixed Analog/Digital Circuits -- Variability-Aware Optimization of RF Integrated Inductors in Nanometer-Scale Technologies -- A Survey on the Static and Dynamic Translinear Paradigm.
Sommario/riassunto	This book presents theory, design methods and novel applications for

integrated circuits for analog signal processing. The discussion covers a wide variety of active devices, active elements and amplifiers, working in voltage mode, current mode and mixed mode. This includes voltage operational amplifiers, current operational amplifiers, operational transconductance amplifiers, operational transresistance amplifiers, current conveyors, current differencing transconductance amplifiers, etc. Design methods and challenges posed by nanometer technology are discussed and applications described, including signal amplification, filtering, data acquisition systems such as neural recording, sensor conditioning such as biomedical implants, actuator conditioning, noise generators, oscillators, mixers, etc. Presents analysis and synthesis methods to generate all circuit topologies from which the designer can select the best one for the desired application; Includes design guidelines for active devices/elements with low voltage and low power constraints; Offers guidelines for selecting the right active devices/elements in the design of linear and nonlinear circuits; Discusses optimization of the active devices/elements for process and manufacturing issues of nanometer technology.