

1. Record Nr.	UNINA9910966527603321
Titolo	CMOS nanoelectronics : innovative devices, architectures, and applications // edited by Nadine Collaert
Pubbl/distr/stampa	Boca Raton, Fla., : Pan Stanford Pub., 2012 Singapore : , : Pan Stanford Pub., , 2013
ISBN	1-04-022174-2 0-429-11283-1 981-4364-03-7
Edizione	[1st ed.]
Descrizione fisica	1 online resource (444 p.)
Altri autori (Persone)	CollaertNadine
Disciplina	621.3815
Soggetti	Molecular electronics Nanotechnology
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.
Nota di contenuto	Front Cover; Contents; Preface; I. Integration of Multi-Gate Devices (FinFET); 1. Introduction to Multi-Gate Devices and Integration Challenges; 2. Dry Etching Patterning Requirements for Multi-Gate Devices; 3. High-k Dielectrics and Metal Gate Electrodes on SOI MuGFETs; 4. Doping, Contact and Strain Architectures for Highly Scaled FinFETs; II. Circuit-Related Aspects; 5. Variability and Its Implications for FinFET SRAM; 6. Specific Features of MuGFETs at High Temperatures over a Wide Frequency Range; 7. ESD Protection in FinFET Technology; III. Exploratory Devices and Characterization Tools 8. The Junctionless Nanowire Transistor9. The Variational Principle: A Valuable Ally Assisting the Self-Consistent Solution of Poisson's Equation and Semi-Classical Transport Equations; 10. New Tools for the Direct Characterisation of FinFETs; 11. Dopant Metrology in Advanced FinFETs
Sommario/riassunto	This book covers one of the most important device architectures that have been widely researched to extend the transistor scaling: FinFET. Starting with theory, the book discusses the advantages and the integration challenges of this device architecture. It addresses in detail the topics such as high-density fin patterning, gate stack design, and

source/drain engineering, which have been considered challenges for the integration of FinFETs. The book also addresses circuit-related aspects, including the impact of variability on SRAM design, ESD design, and high-T operation. It discusses a new d
