1. Record Nr. UNINA9910790325403321

Titolo	Nanoscaled semiconductor-on-insulator materials, sensors and devices : selected, peer reviewed papers from the 6th International Workshop on Semiconductor-on-Insulator Materials and Devices, 24-28 October, 2010 Kyiv, Ukraine / / edited by Alexei N. Nazarov and Jean-Pierre Raskin
Pubbl/distr/stampa	Durnten-Zurich, Switzerland : , : Trans Tech Publications, , [2011] Enfield, N.H. : , : Distributed in the Americas by Trans Tech Publications, , [date of distribution not identified] ©2011
ISBN	3-03813-615-8
Descrizione fisica	1 online resource (199 p.)
Collana	Advanced materials research, , 1022-6680 ; ; volume 276
Altri autori (Persone)	NazarovA. N (Alexei N.) RaskinJ.-P <1971-> (Jean-Pierre)
Disciplina	621.38152
Soggetti	Semiconductors Silicon-on-insulator technology Nanoelectromechanical systems 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 and indexes.
Nota di contenuto	Nanoscaled Semiconductor-on-Insulator Materials, Sensors and Devices; Preface and Committee Members; Table of Contents; I. Technology of Semiconductor-On-Insulator Structures and Devices; ZnO Films and Crystals on Bulk Silicon and SOI Wafers: Formation, Properties and Applications; Influence of Hydrogen Plasma Treatment on a-SiC Resistivity of the SiC/SiO2/Si Structures; Diamond - Graphite Heterostructures Formed by Nitrogen and Hydrogen Implantation and Annealing; Hydrogen Gettering within Processed Oxygen-Implanted Silicon; II. Physics of New SOI Devices Gate Control of Junction Impact Ionization Avalanche in SOI MISFETs: Theoretical ModelSemi-Analytical Models of Field-Effect Transistors with Low-Dimensional Channels; Model of Nonuniform Channel for the Charge Carrier Transport in Nanoscale FETs; High Temperature Effects

on Harmonic Distortion in Submicron SOI Graded-Channel MOSFETs; Some Issues of Modeling the Double Barrier Metal-Oxide-Semiconductor Tunnel Structures; Electrical Properties of High-K LaLuO3 Gate Oxide for SOI MOSFETs; Effects of High-Energy Neutrons on Advanced SOI MOSFETs; III. SOI Sensors and MEMS Polysilicon on Insulator Structures for Sensor Application at Electron Irradiation & Magnetic FieldsOn-Chip Tensile Testing of the Mechanical and Electro-Mechanical Properties of Nano-Scale Silicon Free-Standing Beams; Non-Standard FinFET Devices for Small Volume Sample Sensors; 3D SOI Elements for System-on-Chip Applications; Routes towards Novel Active Pressure Sensors in SOI Technology; IV. Nanodots, Nanowires and Nanofilms; Photovoltage Performance of Ge/Si Nanostructures Grown on Intermediate Ultrathin SiOX Layers Interface and Bulk Properties of High-K Gadolinium and Neodymium Oxides on SiliconEffect of Ge Nanoislands on Lateral Photoconductivity of Ge-SiOX-Si Structures; A Model of the Evolution of the Au/Si Droplet Ensembles during Rapid Thermal Annealing at High Temperatures; The Nanometer Scaled Defects Induces with the Dislocation Motion in II-VI Insulated Semiconductors; Keywords Index; Authors Index

Sommario/riassunto

This special collection covers: 1. the technology of semiconductor-on-insulator structures and devices; 2. the physics of new SOI devices; 3. SOI sensors and MEMS; 4. nanodots, nanowires and nanofilms. The first part covers a wide variety of SemOI-based structures such as ZnO-on-Insulators, a-SiC-on-Si oxide, graphite inner films fabricated by ion implantation, and others. The second part presents new devices based upon impact ionization near to the source junction, the modeling of charge transport in nano-scale SOI MOSFETs, the electrical properties of SOI MOSFETs with LaLuO3 high-k gate diel