

1. Record Nr.	UNINA9911006724103321
Autore	Riccio Michele
Titolo	Formation of Solid-State Structures
Pubbl/distr/stampa	Zurich : , : Trans Tech Publications, Limited, , 2024 ©2024
ISBN	9783036416328 3036416323
Edizione	[1st ed.]
Descrizione fisica	1 online resource (221 pages)
Collana	Solid State Phenomena, , 1662-9779 ; ; Volume 359
Altri autori (Persone)	IraceAndrea BreglioGiovanni
Soggetti	Semiconductors Solid state physics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Intro -- Formation of Solid-State Structures -- Preface -- Table of Contents -- Free-Standing 3C-SiC P-Type Doping by Al Ion Implantation -- TEM Investigation on High Dose Al Implanted 4H-SiC Epitaxial Layer -- Evolution of the Substitutional Fraction on Post-Implantation Annealing in Al/4H-SiC Systems -- Low Resistivity Aluminum Doped Layers Formed Using High Dose High Temperature Implants and Laser Annealing -- Improving HfO ₂ Thick Films for SiC Power Devices by Si, Y and La Doping -- Dopant Activation Comparison in Phosphorus and Nitrogen Implanted 4H-Silicon Carbide -- Transient-Enhanced Diffusion of Implanted Aluminum in 4H-SiC -- Calibration of Aluminum Ion Implantation Monte-Carlo Model for TCAD Simulations in 4H-SiC -- Prediction of Contact Resistance of 4H-SiC by Machine Learning Using Optical Microscope Images after Laser Doping -- The Effect of Nitrogen Plasma Treatment Process on Ohmic Contact Formation to N-Type 4H-SiC -- Ni/4H-SiC Ohmic Contact Formation Using Multipulse Nanosecond Laser Annealing -- Lift-Off Process for Patterning of a Sputter-Deposited Thick Metal Stack for High Temperature Applications on 4H-SiC -- Plasma Treatment after NiSi-Based Ohmic Contact Formation on 4H-SiC to Enhance Adhesion of Subsequent Backside Metallization -- Effect of Substrate Heating on

Low Contact-Resistance Formation by Excimer Laser Doping for 4H-SiC -- Nickel Ohmic Contacts Formed on 4H-SiC by UV Laser Annealing -- Electrical and Structural Properties of Ohmic Contacts of SiC Diodes Fabricated on Thin Wafers -- Empirical Model of Low-Ohmic Nickel-Based Contact Formation on N-Type 4H-SiC Depending on Thermal Budget -- Low-Ohmic Nickel Contacts on N-Type 4H-SiC by Surface Roughness Dependent Laser Annealing Energy Density Optimization -- Long Term Reliability and Deterioration Mechanisms of High-Temperature Metal Stacks on 4H-SiC.

Metal Contact Processing Experiments towards Realizing 500 °C Durable RF 4H-SiC BJTs -- Performance Improvement by Carbon-Dioxide Supercritical Fluid Treatment for 4H-SiC Vertical Double Diffusion MOSFETs -- Hydrogen Etching Process of 4H-SiC (0001) in Limited Regions -- Comparative Study of the Self-Aligned Channel Processes for 4H-SiC VDMOSFET -- Demonstration of Low Interface Trap Density ($\sim 3 \times 10^{11} \text{eV}^{-1} \text{cm}^{-2}$) SiC/SiO₂ MOS Capacitor with Excellent Performance Using H₂+NO POA Treatment for SiC Power Devices -- Increasing Mobility in 4H-SiC MOSFETs with Deposited Oxide by In-Situ Nitridation of SiC Surface -- Demonstrating SiC In Situ Rounded Trench Processing Technologies for Future Power Trench MOSFET Applications -- High Mobility 4H-SiC P-MOSFET via Ultrathin ALD B₂O₃ Interlayer between SiC and SiO₂ -- Quality Improvement of SiC Substrate Surface with Using Non-Abrasive CMP Slurry -- Addition of Transition Metal Ion CMP Slurry for Forming Ultra-Flat SiC Crystal -- Increasing 4H-SiC Trench Depth by Improving the Dry Etch Selectivity towards the Oxide Hard Mask -- A Comparison between Different Post Grinding Processes on 4H-SiC Wafers -- Influence of Active Area Etching Method on the Integrity of Gate Oxide on 4H-SiC -- High-K Gate Dielectric for High-Performance SiC Power MOSFET Technology with Low Interface Trap Density, Good Oxide Lifetime (ttddb 104s), and High Thermal Stability (800 °C) -- Keyword Index -- Author Index.

Sommario/riassunto

Special topic volume with invited peer-reviewed papers only.