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	Conclusion; Acknowledgements; References; 4 Preparation and Properties of Porous GaN Fabricated by Metal-Assisted Electroless Etching; 4.1 Introduction 4.2 Creation of Porous GaN by Electroless Etching4.3 Morphology Characterization; 4.3.1 Porous GaN Derived from Unintentionally Doped Films; 4.3.2 Transmission Electron Microscopy (TEM) Characterization; 4.4 Luminescence of Porous GaN; 4.4.1 Cathodoluminescence (CL) of Porous GaN; 4.4.2 Photoluminescence (PL) of Porous GaN; 4.5 Raman Spectroscopy of Porous GaN; 4.5.1 Characteristics of Raman scattering in GaN; 4.5.2 Raman Spectra of Porous GaN Excited Below Band Gap; 4.6 Summary and Conclusions; Acknowledgements; References; 5 Growth of GaN on Porous SiC by Molecular Beam Epitaxy 5.1 Introduction5.2 Morphology and Preparation of Porous SiC Substrates; 5.2.1 Porous Substrates; 5.3.1 Experimental Details; 5.3.2 Film Structure; 5.3.3 Film Strain; 5.4 Summary; Acknowledgements; References; 6 GaN Lateral Epitaxy Growth Using Porous SiNx, TiNx and SiC; 6.1 Introduction; 6.2 Epitaxy of GaN on Porous SiNx Network; 6.2.1 Three-step Growth Method; 6.2.2 Structural and Optical Characterization; 6.2.3 Schottky Diodes (SDs) on Undoped GaN Templates; 6.2.4 Deep Level Transition Spectrum 6.3 Epitaxial Lateral Overgrowth of GaN on Porous TiN6.3.1 Formation of Porous TiN; 6.3.2 Growth of GaN on Porous TiN; 6.3.3 Characterization by XRD; 6.3.4 Characterization by TEM; 6.3.5 Characterization by PL; 6.4 Growth of GaN on Porous SiC; 6.4.1 Fabrication of Porous SiC; 6.4.2 GaN Growth on Hydrogen Polished Porous SiC; 6.4.3 GaN Growth on Chemical Mechanical Polished Porous SiC; Acknowledgements; References; 7 HVPE Growth of GaN on Porous SiC; Acknowledgements; References; 7 HVPE Growth of GaN on Porous SiC; Austrates; 7.1 Introduction; 7.2 PSC Substrate Fabrication and Properties; 7.2.1 Formation of Various Types of SPSC Structure; 7.2.2 Dense Layer 7.2.3 Monitoring of Anodization Process
Sommario/riassunto	Porous Silicon Carbide and Gallium Nitride: Epitaxy, Catalysis, and Biotechnology Applications presents the state-of-the-art in knowledge and applications of porous semiconductor materials having a wide band gap. This comprehensive reference begins with an overview of porous wide-band-gap technology, and describes the underlying scientific basis for each application area. Additional chapters cover preparation, characterization, and topography; processing porous SiC; medical applications; magnetic ion behavior, and many more