

Table of Contents

Preface

The Elusive Bulk Inclusion, Sizing, Wafer- and Ingot-Level Localization and Their Effect on Dislocation Generation and Epitaxial Defectivity in 4H-SiC J. Thörnberg and B. Magnusson	1
Formation Mechanism and Reduction of Surface Pits on 4H-SiC Epitaxial Layer W.N. Qian, F.H. Huang, J.N. Li, G. Feng, Y.Q. Sun, J.H. Zhao and J.Y. Kang	9
Minority Charge Carrier Lifetime for Evaluating 4H-SiC Epitaxial Growth by Microwave Detected Photoconductivity Decay C. Wißgott, B. Kallinger and M. Rommel	15
DLTS Analysis of Deep Levels in 4H-SiC Schottky Barrier Diode under Different Measurement Parameters L. Luo, Y. Zhong, X.S. Yang, Q.X. Zhao, P. Cui, Y.X. Cui, M.S. Xu, X.G. Xu and J.S. Han	21
Influence of Temperature Field and Doping on BPD Distribution in 8-Inch 4H-SiC Substrates Z.X. Fu, X.L. Yang, X.F. Chen, X.J. Xie, L. Sun, H.Y. Shao, W.H. Han, H.X. Wang, G.J. Yu and X.G. Xu	27
DC and RF Local Electrical Properties of Macrostepped 4H-SiC Surface Probed by Scanning Spreading Resistance Microscopy and Scanning Microwave Impedance Microscopy Modes R.C. Germanicus and G. Ferro	33
Advanced Defects Study and Monitoring in New Generation 4H-SiC Devices N. Piluso, C. Calabretta, F. Vento, R. Anzalone, C. Nania, D. Raciti, A. Rossitto, A. Lombardo, M. Coppola, A. Cannizzaro, A. Severino, G. Arena, M.M. Salamone, F. Giuffrida, L. Barbisan, P. Sharma, J. Per, M.K. Dayyala and P. Parisi	39
Investigating the Temperature Dependence of Charge Carrier Lifetime in Low-Doped Epitaxial 4H-SiC Layers Z. Yuan, A. Metreveli, L. Vines, O. Samperi, M. Ghezellou, J. Ul-Hassan and A. Hallén	45
Investigation of Micropipe Defects and Their Strain Field Distortions in SiC Substrates Using X-Ray Topography L. Sun, X.J. Xie, X.F. Chen, X.L. Yang, Y. Peng, X.B. Hu and X.G. Xu	53
High Quality P-Type 4H-SiC Growth by PVT Method S.S. Hu, H.C. Wang, Z.Y. Chen, K.X. Zhang, Y.Z. Li, J.P. Zhang, B. Raghothamachar, M. Dudley, D. Dukes and V. Torres	59
Characterization of Deep Levels Introduced by Energy Filtered Ion Implantation with DLTS and MCTS in 4H-SiC H. Jayaprakash, M. Belanche, C. Csato, F. Krippendorf, U. Grossner and M. Rueb	65
Observation and Analysis of the “Galaxy” Defect in 4H-SiC through X-Ray Synchrotron Topography K.X. Zhang, Z.Y. Chen, S.S. Hu, J.P. Zhang, Y.Z. Li, D.L. Wu, H.C. Wang, B. Raghothamachar, M. Dudley and A. Soukhajak	73
Growth and Characterization of High-Quality Thick Epitaxial 4H-SiC Wafers for High Voltage Devices Y.Z. Li, J.P. Zhang, Z.Y. Chen, H.C. Wang, K.X. Zhang, S.S. Hu, B. Raghothamachar, A.A. Burk Jr, K. Singh, M.A. Johar, N.A. Mahadik, R.E. Stahlbush and M. Dudley	79
Silicon Carbide Epitaxial Defects and Substrate Defects Analysis by Dynamic Photoluminescence and X-Ray Topography D. Lee, K. Schmidt, M.A. Johar, S. Subramanian, A. Burk and A. Souzis	87
Unveiling the Role of Crystallographic Defects in SiC Device Reliability with Multi Modal Structural Analysis C. Calabretta, N. Piluso, R. Anzalone, E. Fontana, G. Maira, G. Bellocchi, M.S. Alessandrino, F. Vento, C. Nania, S. Adamo, S. Zappalà, G. D'Arrigo, E. Vitanza, N. Bentivegna, A. Russo, G. Arena and A. Severino	93