

Table of Contents

Preface

Chapter 1: Silicon Carbide Wafer Manufacturing

Transfer of Heteroepitaxial Grown 3C-SiC Layers for Application in Optical Frequency Combs M. Kollmuss, X.D. Shi, H.Y. Ou and P.J. Wellmann	3
Suppression of In-Grown SF Formation and BPD Propagation in 4H-SiC Epitaxial Layer by Sublimating Sub-Surface Damage before the Growth K. Toda, D. Dojima, K. Kojima, H. Mihara, S. Mitani and T. Kaneko	9
Ni-Silicide Ohmic Contacts on 4H-SiC Formed by Multi Pulse Excimer Laser Annealing P. Badalà, I. Deretzis, S. Sanzaro, F.M. Pennisi, C. Bongiorno, G. Fisicaro, S. Rascunà, G. Bellocchi, A. Bassi, M. Boscaglia, D. Pagano, P. Vasquez, M. Enachescu, A. Alberti and A. La Magna	15
In Situ Monitoring of the Ambient Gas Phase during PVT Growth of Nominally Undoped High Resistivity SiC Boules J. Ihle and P.J. Wellmann	23
Study of GHz-Burst Femtosecond Laser Micro-Punching of 4H-SiC Wafers H. Mir, F. Meyer, A.A. Brand, K. Erath-Dulitz and J.F. Nekarda	29
3C-SiC Island Growth on 4H-SiC Terraces: Statistical Evidence for the Orientation Selection Rule B.J. Van Zeghbroeck and D.C. Bobela	35
Development of High Quality 8 Inch 4H-SiC Substrates X.L. Yang, Y.N. Pan, C. Gao, Q.R. Liang, L.P. Wang, J.Y. Zhang, Y.H. Gao, X.X. Ning and H.Y. Zhang	41
Tailored Polycrystalline Substrate for SmartSiC™ Substrates Enabling High Performance Power Devices H. Biard, S. Odoul, W. Schwarzenbach, I. Radu, C. Maleville, A. Potier, M. Ferrato and E. Guajioty	47
Study on Estimation of Device Yield in Non-Epitaxial 4H-SiC Material Relating to Defect Densities Influencing Bipolar Degradation with XRT- Measurements H. Jayaprakash, C. Csato, T. Erlbacher, C. Kranert, F. Krippendorf, P. Wimmer, C. Reimann and M. Rueb	53

Chapter 2: Functional Materials

PVA Nanofibers Embedded with Different Concentration of ZnO Prepared by Electrospinning Method M.A. Zulkefle, R.A. Rahman, W.F.H. Abdullah, Z. Zulkifli and S.H. Herman	61
Dielectric Properties of Epoxy Composites Containing Silver Nanoparticle and Carbon Nanotube over the X-Band Frequency N.A. Mohamad, R.N.I.R. Othman and N.F.A. Jamilr	67
Thermomechanical and Dielectric Properties Relationship of Hybrid Carbon Black and Nano Silica Epoxy Composites R.N.I.R. Othman, F. Atira and N.A. Mohamad	75
Selective Etch for Micromachining Process in Manufacturing Hybrid Microdevices composed of Ni-Mn-Ga and Silicon Layers H. Hu and K. Ullakko	81
Impedance and Dielectric Characterization of Epoxy Composites Containing Carbon Black and Carbon Nanotubes R.N.I.R. Othman, A.Z. Ghani, N.H. Osman and N.A. Mohamad	89

Chapter 3: Microwave Absorbing Materials

The Optimal Performance of a Geopolymer Hollow Pyramidal Microwave Absorber with Triangular Slotted	
M.F. Asmadi, H. Abdullah, M.N. Taib, M.I. Fazin, A. Ahmad, N.M. Kasim, N.A. Ismail and M.M. Jumidali	97
The Performance of Hollow Pyramidal Microwave Absorber Using Different Slot Size	
M.I. Fazin, H. Abdullah@Idris, M.F. Asmadi, A.R. Razali, N.M. Noor and L.M. Kasim	103
Utilization of Carbon Biomass as an Absorbing Material in Anti-Microwave Brick Walls Manufacturing	
N.H. Narudin, H. Abdullah, M.N. Taib, B.A. Hadi, A. Ahmad, N.M. Kasim and N.A. Ismail	109