

Table of Contents

Preface

Comparison of the Irradiation Temperature Effect of on the Carrier Removal Rates in GaN and SiC A.A. Lebedev, K.S. Davydovskaya, V.V. Kozlovski, M.E. Levinstein, D.A. Malevsky, A.E. Nikolaev, A.V. Sakharov and N.S. Solonitsyn	1
Investigation of Mechanical Stress and Warpage in 200 mm Silicon Carbide Wafers: Implications for Production Scalability L. Dong, Q.Q. Wu and S. Nufer	7
Challenges in Measuring Thin SiO₂ Layers on 4H-SiC via Spectroscopic Ellipsometry L. Makai, J. Körfer, Z. Pap, B. Fodor and M. Rommel	15
A Frequency-EBIC Technique for High Spatial Resolution of the Effective Minority Charge Carrier Lifetime in SiC PN-Junctions C.S. Gruber, G. Pobegen and J. Smoliner	21
Evaluation of Oxide Processing Steps in SiC Technology Using Contactless Corona-Based CV Measurements R. Karhu, V. Häublein, M. Wilson, M. Rommel and B. Kallinger	29
Characterization of the Electric Field in Silicon Carbide Detectors by Optical Beam Induced Current S. de Luca, A.S. Mancuso, A. Muoio, E. Sangregorio and F. La Via	37
A Study on Simplifying the Process of a Single Cycle for Multiple Epitaxy and Implantation Method to Fabricate SiC Super Junction H.W. Chen, C.Y. Cheng, W.L. Lai, Y.C.S. Wu and B.Y. Tsui	43
Effects of 673K Temperature Anneal on a 4H-SiC CMOS NOT Logic Gate N. Rinaldi, L. di Benedetto, M. Rommel, A. May, L. Baier, R. Liguori, A. Rubino and G.D. Licciardo	49
Edge Termination Design for Ultra High-Voltage (>10 kV) 4H-SiC Power Devices Using Background Doping Modulation (BDM) M. Torkey, J. Lynch, N. Yun, S. Mancini, M. Hinojosa, A. Lelis and W. Sung	55
Carbon Vacancy Engineering on High-Temperature Annealing as a Cost-Effective Approach for Reverse Recovery Suppression in SiC-MOSFETs M. Matsuoka, D. Soda, K. Miyazaki, T. Tanioka, K. Tojima, A. Kiyoi, Y. Kagawa and T. Nitta	61
4H-SiC Diodes to Probe Stark Effect Detection in 7Be Decay Lifetime V. Boldrini, M. Canino, M. Pieruccini, V. Carrano, H.C. Neitzert, L. di Benedetto, C. Santonastaso, R. Buompane, M.L. Mitsou, N. Casali, R.P. Yadav, M. Laubenstein, C.D.E. Boschi, A. Rubino, A. Formicola and L. Gialanella	69
Enhanced Breakdown Voltage and Enlarged Process Window for Junction Termination Extension in SiC Power Devices Using Hybrid Random and Channeling Implantation S.Y. Zheng, X.J. Luo and H.X. Jiang	75
Effect of Varying N⁺ Source Implantation Depth on the Electrical Characteristics of 1.2 kV 4H-SiC MOSFETs D.C.Y.B.Y. Mudiyansele, S. deBoer, S.A. Mancini, J. Lynch, S.Y. Jang, A.J. Morgan and W. Sung	81