

# Table of Contents

## Preface

<b>Deep-Ultraviolet Laser-Based Defect Inspection of Single-Crystal 4H-SiC and SmartSiC<sup>TM</sup> Engineered Substrates for High Volume Manufacturing</b>	
E. Cela, W. Schwarzenbach, R. Shrestha, G. Bast, S. Shahidi and G. Simpson	1
<b>Study of In-Grown Micropipes in 200 mm 4H-SiC (0001) Epitaxial Substrate</b>	
A.M.A. Lee, X.Y. Li, Q.G.R. Voo, S. Kumar, E.S. Tok, U. Chand, L.K. Bera, H.L.R. Maddi, S. Chung, F. Hébert, N. Singh and Y.C. Yeo	7
<b>Demonstration of Suppressing ISSF Expansion Using Energy Filtered Ion Implantation</b>	
H. Jayaprakash, C. Csato, M. Kato, T. Li, F. Krippendorf and M. Rueb	13
<b>Analysis of Trap Centers Generated by Hydrogen Implantation in 4H-SiC Bonded Substrates</b>	
H. Uchida, M. Kobayashi, N. Hatta, S. Ishikawa, Y. Higashi, H. Sezaki, S. Harada and K. Kojima	21
<b>Analysis of Lattice Damage in 4H-SiC Epiwafers Implanted with High Energy Al Ions with Silicon Energy-Filter for Ion Implantation</b>	
Z.Y. Chen, Q.Y. Cheng, S.S. Hu, B. Raghorthamachar, C. Carlson, D. Steski, T. Kubley, F. Krippendorf, M. Rüb, R. Koch, R. Ghandi, S. Kennerly and M. Dudley	29
<b>Formation Mechanism and Complex Faulting Behavior of a BPD Loop in 180 µm Thick 4H-SiC Epitaxial Layer</b>	
Z.Y. Chen, N.A. Mahadik, M. Dudley, B. Raghorthamachar, D.A. Scheiman, R.E. Stahlbush, Y.S. Kim and M.W. Owen	35
<b>Evaluation of 4HSiC Epitaxial CVD Process on Different 200 mm Substrates for Power Device Applications</b>	
C. Nania, D. Raciti, C. Calabretta, F. Vento, R. Anzalone, E. Fontana and A. Severino	43
<b>Characterization of Interface Trap and Mobility Degradation in SiC MOS Devices Using Gated Hall Measurements</b>	
S. Das, D.J. Lichtenwalner, S.R. Stein and S.H. Ryu	49
<b>Numerical Analysis of Correlation between UV Irradiation and Current Injection on Bipolar Degradation in PiN Diodes</b>	
Y. Igarashi, K. Takano, Y. Matsushita and T. Morita	55
<b>Investigation on Bipolar Degradation Caused by Micropipe in 3.3 kV SiC-MOSFET</b>	
H. Niwa, T. Tanaka, K. Ishibashi, H. Amishiro, A. Imai, Y. Kagawa, K. Sugawara and T. Watahiki	63
<b>Suppression and Analysis of Bipolar Degradation in 4H-SiC PiN Diodes through Proton Implantation</b>	
A. Shimbori, R. Wada, N. Tokoro, T. Kuroi, H.Y. Wong and A.Q. Huang	69