

Table of Contents

	page
Preface	iii
Symposium Organizers	iv
 Compound Semiconductor Power Transistors II	
Challenges Facing GaN-Based Electronic Devices	3
<i>G.D. Via, A. Crespo, G. DeSalvo, T. Jenkins, J. King, and J. Sewell</i>	
Wide Bandgap Bipolar Microwave Power Transistors: Status and Issues	18
<i>J.C. Zolper</i>	
GaN MODFET Technology for Microwave High Power and Robust Low-Noise Amplifiers	23
<i>C. Nguyen, M. Micovic, N.X. Nguyen, W.S. Wong, P. Hashimoto, and P. Janke</i>	
AlGaN/GaN Heterojunction Bipolar Transistor: Limiting Factors and Optimum Design for High Frequency Performances	34
<i>C. Monier, A.G. Baca, S.J. Pearson, F. Ren, P.C. Chang, L. Zhang, J.R. LaRoche, J. Han, and R.J. Shul</i>	
Recent Advances in High Efficiency pHEMT Devices and Power Amplifiers	43
<i>D. Teeter, C. Whelan, A. Platzker, S. Bouthillette, S. Nash, G. Chu, B. Hoke, P. Marsh, and T. Kazior</i>	
Device Technologies for Future Mobile Wireless Applications	58
<i>H.-S. Tsai, Y.C. Wang, J.M. Kuo, Y.K. Chen, F. Ren, and J.R. Lothian</i>	
Low Cost MHEMT MMIC Technology for High Gain, High Efficiency Power Applications	66
<i>P.C. Chao</i>	
InP Heterojunction Bipolar Transistor (HBT) Technology for Power Applications	69
<i>K.W. Kobayashi, A.K. Oki, A. Gutierrez-Aitken, P. Chin, L.T. Tran, L.-W. Yang, D. Sawdai, E. Kaneshiro, P.C. Grossman, K. Sato, T.R. Block, H.C. Yen, and D.C. Streit</i>	

Table of Contents	page
Electrical and Optical Characterisation of High Voltage 4H Silicon Carbide Diodes ... <i>A. Hallen, U. Zimmermann, J. Osterman, A. Galeckas, J. Linnros, and B. Breitholtz</i>	82
Formation and Thermal Stability of Ni/WSi/Ti/Pt Composite Ohmic Contacts to n-SiC for High Power Device Applications <i>M.W. Cole, P.C. Joshi, C.W. Hubbard, D.J. Demaree, M.C. Wood, M.H. Ervin, and F. Ren</i>	90
Low Dit Dielectric/GaN MOS Systems <i>M. Hong, H. M. Ng, J. Kwo, A. R. Kortan, J. N. Baillargeon, S. N. G. Chu, J. P. Mannaerts, A. Y. Cho, F. Ren, C. R. Abernathy, S. J. Pearton, and J. I. Chyi</i>	103
Enhancement-Mode Power AlGaAs/InGaAs/AlGaAs Pseudomorphic High Electron Mobility Transistors <i>Y. Tkachenko, C. Wei, Y. Zhao, A. Klimashov, and D. Bartle</i>	110
High Voltage Heterojunction Bipolar Transistors <i>T. Hussain, M. Sokolich, M. Montes, and M. Brand</i>	120
DC and Microwave Characteristics of 100 V GaAs/AlGaAs HBTs <i>A.G. Baca, P.C. Chang, J.F. Klem, C.I.H. Ashby, and D.C. Martin</i>	128

State-of-the-Art Program on Compound Semiconductors (XXXII)

Reliable AlGaAs/GaAs and GaInP/GaAs Power HBTs for X-Band Applications <i>K.J. Riepe, H. Blanck, W. Doser, P. Auxemery, and D. Pons</i>	139
100 mm Diameter AlGaN and GaN Films Grown on Si(111) Substrates <i>H.M. Liaw, P. Fejes, R. Venugopal, J. Wan, G.L. Martinez, B.J. Skromme, and M.R. Melloch</i>	150
Raman Scattering from Vapor Phase Epitaxial Growth of SiC on Porous 6H-SiC <i>J. Spanier, G. Dunne, L. Rowland, and I. Herman</i>	162
Novel GaAs-Based FETs for High-Voltage High-Power Applications <i>M. Kuzuhara, Y. Mochizuki, Y. Nashimoto, and M. Mizuta</i>	168
Selective RIE in BCl ₃ /SF ₆ Plasmas for GaAs HEMT Gate Recess Etching <i>Y.-S. Lee, K. Upadhyaya, and K. Nordheden</i>	182

Table of Contents	page
MOCVD Growth of Indium Nitride	189
<i>K.-H. Chen, J.S. Huang, F.S. Yang, Y.J. Yang, and L.C. Chen</i>	
MBE Growth of Group III-Nitrides-Arsenides for Long Wavelength Opto-Electronic Devices on GaAs Substrates	195
<i>S.G. Spruytte, C.W. Coldren, A.F. Marshall, M.C. Larson, and J.S. Harris</i>	
Al _x Ga _{1-x} N-Based UV Photodetectors and Waveguides	205
<i>F. Omnes, E. Monroy, B. Beaumont, E.-H. Dogheche, F. Calle, E. Munoz, and P. Gibart</i>	
GaNP/GaP: A Novel Material System for Light-Emitting Diodes	220
<i>C.W. Tu, H.P. Xin, and R.J. Welty</i>	
A New InP/InGaAlAs Multiple-Negative-Differential-Resistance (MNDR) Switching Device	224
<i>W.-C. Wang, W.-C. Liu, H.-J. Pan, C.-C. Cheng, S.-C. Feng, C.-H. Yen, and H.J. Shih</i>	
In situ Observation of Ellipsometry Monolayer Oscillations During Metalorganic Vapor-Phase Epitaxy	229
<i>J.-S. Lee and Y. Masumoto</i>	
Ultra-low Resistance Contacts to GaAs/AlGaAs Quantized Hall Resistors	242
<i>K. Lee</i>	
Zinc Incorporation And Diffusion in InP During Ap-MOCVD Growth	247
<i>S.N.G. Chu, R.A. Logan, and M. Geva</i>	
Anodic Film Formation and Current Oscillations on InP Electrodes in Aqueous (NH ₄) ₂ S	265
<i>E. Harvey and N. Buckley</i>	
A High-Sensitivity Hydrogen Sensor Based on Pd/InP Schottky Diode Structure	276
<i>H.-J. Pan, W.-C. Liu, K.-H. Yu, W.-C. Wang, and S.-C. Feng</i>	
Backside Copper Metallization of GaAs MESFET's Using Ta or TaN As The Diffusion Barrier	282
<i>E.Y. Chang, C.Y. Chen, L. Chang, and S.H. Chen</i>	

Table of Contents	page
GaAs MOSFET - Achievements and Challenges	292
<i>M. Hong, J.N. Baillargeon, J. Kwo, A.R. Kortan, J.P. Mannaerts, A.Y. Cho, Y.C. Wang, and F. Ren</i>	
Device Characteristics of the PnP AlGaAs/InGaAsN/GaAs Double Heterojunction Bipolar Transistor	305
<i>P.C. Chang, N.Y. Li, J.R. Laroche, A.G. Baca, H.Q. Hou, and F. Ren</i>	
Fabrication of Reduced Area InGaAs/InP HBT and DHBT Devices	313
<i>R.F. Kopf, Y.-C. Wang, R.A. Hamm, R.W. Ryan, A. Tate, M.A. Melendes, R. Pullela, G. Georgiou, J.-P. Mattia, Y. Baeyens, H.-S. Tsai, N. Weimann, Q. Lee, and Y.-K. Chen</i>	
Role of Surface Preparation of GaAs on the Regrown AlGaAs/InGaAs PHEMT Structures	323
<i>S. Balasubramanian, H. Zheng, K. Radhakrishnan, G.I. Ng, and S.F. Yoon</i>	
Reduction of the Base-Collector Capacitance of Heterostructure Bipolar Transistors using Regrowth over a Patterned Subcollector	329
<i>R. Hamm, M. Lee, C. Pinzone, R. Kopf, R. Ryan, R. Pullela, A. Tate, M. Melendes, R. Melendes, and D. Werder</i>	
Step-Graded Doped-Channel(SGDC)Field-Effect Transistor	339
<i>K.-W. Lin, W.-C. Liu, K.-H. Yu, C.-C. Cheng, K.-B. Thei, and H.J. Shih</i>	
Author Index	347
Subject Index	349