
SiGe, Ge, and Related Compounds 5: Materials, Processing, and Devices

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Electronics and Photonics



Published by

The Electrochemical Society

65 South Main Street, Building D
Pennington, NJ 08534-2839, USA

tel 609 737 1902

fax 609 737 2743

www.electrochem.org

ecstransactions™

Vol. 50, No. 9

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Published by:

The Electrochemical Society
65 South Main Street
Pennington, New Jersey 08534-2839, USA

Telephone 609.737.1902
Fax 609.737.2743
e-mail: ecs@electrochem.org
Web: www.electrochem.org

ISSN 1938-6737 (online)
ISSN 1938-5862 (print)
ISSN 2151-2051 (cd-rom)

ISBN 978-1-62332-008-9 (Hardcover)
ISBN 978-1-60768-357-5 (PDF)

Printed in the United States of America.

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Session Co-Chairs: Y. Kim and M. Sakuraba

- (E17-3178) 8:00 AM
(Invited) Beyond Graphene: Synthesis of Epitaxial Silicene Sheets 609
*G. Le Lay (Aix-Marseille University), P. De Padova (CNR-ISM),
A. Resta (CNRS-CINaM), T. Bruhn, and P. Vogt (TU-Berlin)*
- (E17-3179) 8:30 AM
(Invited) Epitaxial Growth of Low Defect SiGe Buffer Layers for Integration 613
of New Materials on 300 mm Silicon Wafers
*G. Kozłowski, O. Fursenko, P. Zaumseil, T. Schroeder (IHP),
M. Vorderwestner, and P. Storck (Siltronic AG)*
- (E17-3180) 9:00 AM
Nano-Synthesis Approach to the Fabrication of Monocrystalline Silicon-like 623
(III-V)_yIV_{5-2y} Semiconductors
*A. V. Chizmeshya, J. Kouvetakis, G. Grzybowski, R. T. Beeler, and
J. Menéndez (Arizona State University)*
- (E17-3181) 9:20 AM
(Invited) Undoped Ge Core-Si(Ge) Shell Nanowires: Synthesis, Local 635
Composition and Strain Characterization
*S. Hu, I. A. Goldthorpe, A. F. Marshall, and P. C. McIntyre
(Stanford University)*

Chapter 13

Emerging Applications Session 1: Quantum Effects / Spintronics

Wednesday AM

Session Chair: T. Krishnamohan

- (E17-3182) 10:05 AM
(Invited) Spin Coherence in Si and Applications to Quantum Information 647
Processing
S. A. Lyon, A. M. Tyryshkin, J. He, and R. M. Jock (Princeton University)

- (E17-3183) 10:35 AM
 (Invited) Single-Shot Readout of Singlet-Triplet Qubit States in a Si/SiGe Double Quantum Dot 655
J. R. Prance, Z. Shi, C. B. Simmons, D. E. Savage, M. G. Lagally (University of Wisconsin-Madison), L. R. Schreiber, L. M. Vandersypen (Kavli Institute of Nanoscience, TU Delft), M. Friesen, R. Joynt, S. N. Coppersmith, and M. A. Eriksson (University of Wisconsin-Madison)
- (E17-3184) 11:05 AM
 A Design Scheme for Topological Insulators Based Bonds, Bands, Symmetry and Spin Orbit Coupling 663
C. Felser, L. Muechler, S. Chadov (Max Planck Institute Chemical Physics of Solids), G. Fecher, B. Yan (Johannes Gutenberg-Universität), J. Kübler (Max-Planck-Institut Chemische Physik fester Stoffe), H. Zhang, and S. Zhang (Stanford University)
- (E17-3185) 11:25 AM
 Measurement and Control of Individual Electron Spins in Silicon MOS-based Quantum Dots n/a
H. Jiang (UCLA)

Chapter 14

Surfaces and Interfaces Session 2: Nanowires and New Materials

Wednesday AM

Session Co-Chairs: S. Miyazaki and P. McIntyre

- (E17-3186) 10:05 AM
 (Invited) Non Planar Non Si CMOS - Challenges and Opportunities 669
C. Hobbs, K. Ang, R. Hill (SEMATECH), I. Ok (IBM), B. Min (SEMATECH), D. L. Franca (Research Foundation of SUNY), H. Stamper, S. Vivekanand, M. Rodgers, S. Gausepohl (CNSE), P. Kirsch, and R. Jammy (SEMATECH)
- (E17-3187) 10:35 AM
 Phonon Dispersion in <100> Si Nanowire Covered with SiO₂ Film Calculated by Molecular Dynamics Simulation 673
T. Watanabe, T. Zushi, M. Tomita, R. Kuriyama, N. Aoki, and T. Kamioka (Waseda University)

- (E17-3188) 10:55 AM
(Invited) Electron Transport and Strain Mapping in Ge-Si_xGe_{1-x} Core-Shell Nanowire Heterostructures 681
D. C. Dillen (The University of Texas at Austin), J. Nah (Chungnam National University), K. M. Varahramyan, S. K. Banerjee, and E. Tutuc (The University of Texas at Austin)
- (E17-3189) 11:25 AM
 Liquid-Phase Deposition of Thin Si and Ge Films Based on Ballistic Electro-reduction 691
T. Ohta, R. Mentek (Tokyo Univ. of A & T), B. Gelloz (Nagoya University), N. Mori (Osaka Univ.), and N. Koshida (Tokyo University of Agriculture and Technology)
- (E17-3190) 11:45 AM
 Evidence of Layer-by-Layer Oxidation of Ge Surfaces by Plasma Oxidation Through Al₂O₃ 699
R. Zhang, P. Huang, J. Lin, M. Takenaka, and S. Takagi (The University of Tokyo)

Chapter 15
Processing Session 2: Germanium and Nanoscaled Devices

Wednesday PM

Session Co-Chairs: H. W. Kennel and J. Murota

- (E17-3191) 1:40 PM
(Invited) GOI Substrates: Fabrication and Characterization 709
A. Sakai, S. Yamasaka, J. Kikkawa, S. Takeuchi, Y. Nakamura (Osaka University), Y. Moriyama, T. Tezuka (GNC, AIST), and K. Izunome (Covalent Silicon Corp.)
- (E17-3192) 2:10 PM
(Invited) Strained Nanoscaled Devices 727
D. Grützmacher, Q. Zhao, S. Richter, L. Knoll, J. Moers, J. Gerharz, G. Mussler, D. Buca, and S. Mantl (Forschungszentrum Jülich)
- (E17-3193) 2:40 PM
 Effect of Two-step Oxidation in Ge Condensation on Surface Roughness Property of Relaxed SiGe layer-on-insulator Substrates n/a
T. Shim, T. Kim, D. Lee (Hanyang University), R. Okuyama (SUMCO Corporation), and J. Park (Hanyang University)

(E17-3194) 3:00 PM	
Electrical Isolation of Dislocations in Ge Layers on Si(001) Substrates through CMOS Compatible Suspended Structures	737
<i>V. A. Shah, M. Myronov, C. Wongwanitwatana, M. Prest, J. S. Richardson-Bullock, E. H. Parker, T. E. Whall, and D. R. Leadley (University of Warwick)</i>	
(E17-3195) 3:20 PM	
Formation of Graded SiGe on Insulator by Segregation-Controlled Rapid-Melting-Growth	747
<i>R. Matsumura, Y. Tojo, H. Yokoyama, M. Kurosawa, T. Sadoh, and M. Miyao (Kyushu University)</i>	
(E17-3196) 3:40 PM	
Modeling Two Dimensional Solid Phase Epitaxial Growth for Patterned Ge Substrates	753
<i>B. L. Darby, B. R. Yates, A. Kumar (University of Florida), A. Kontos (Applied Materials), R. G. Elliman (Australian National University), and K. S. Jones (University of Florida)</i>	

Chapter 16
Optoelectronics Session 3: Receivers, Emitters, and Interconnects

Wednesday PM
Session Chair: G. Masini

(E17-3197) 1:40 PM	
<i>(Invited)</i> Germanium/Silicon Heterostructures for Terahertz Emission	763
<i>R. W. Kelsall, V. Dinh, P. Ivanov, A. Valavanis, L. J. Lever, Z. Ikonic (University of Leeds), P. Velha, D. Dumas, K. F. Gallacher, D. J. Paul (University of Glasgow), J. Halpin, M. Myrnov, and D. R. Leadley (University of Warwick)</i>	
(E17-3198) 2:10 PM	
<i>(Invited)</i> Ge Photodiodes for CMOS Photonics Optical Engines and Interconnects	773
<i>S. Sahni and G. Masini (Luxtera)</i>	

(E17-3199) 2:40 PM	
Long Wavelength $\geq 1.9 \mu\text{m}$ Germanium for Optoelectronics Using Process Induced Strain	779
<i>P. Velha, K. F. Gallacher, D. C. Dumas, D. J. Paul (University of Glasgow), M. Myronov, and D. R. Leadley (University of Warwick)</i>	
(E17-3200) 3:00 PM	
Fabrication of Ge-on-Si Substrates for the Integration of High-Quality GaAs Nanostructures on Si	783
<i>S. Bietti (Universita' degli Studi di Milano-Bicocca), S. Cecchi (Politecnico di Milano), C. Frigeri (CNR-IMEM Parma), E. Grilli (Universita' di Milano Bicocca), A. Fedorov (IFN-CNR), A. Vinattieri, M. Gurioli (Universita' di Firenze), G. Isella (Politecnico di Milano), and S. Sanguinetti (Universita' degli Studi di Milano-Bicocca)</i>	
(E17-3201) 3:20 PM	
Advanced Ge-on-Si Telecommunication Receivers	791
<i>C. R. Doerr (ACACIA COMMUNICATIONS)</i>	

Chapter 17

Strain Session 1: Channels, Source/Drain, and GaN

Wednesday PM

Session Chair: K. Uchida

(E17-3202) 4:15 PM	
(Invited) Heteroepitaxial Lattice Mismatch Stress Relaxation in Nonpolar and Semipolar GaN by Dislocation Glide	797
<i>E. C. Young and J. S. Speck (University of California Santa Barbara)</i>	
(E17-3203) 4:45 PM	
Channel Strain Evolution of Recessed Source/Drain $\text{Si}_{1-x}\text{C}_x$ Structures by Modifying Scaling Factors	801
<i>S. Kim, D. Byeon, M. Jung, D. Ko (Yonsei University), S. Chopra, Y. Kim (Applied Materials), and H. Lee (Sungkyunkwan University)</i>	
(E17-3204) 5:05 PM	
High Ge Content SiGe Selective Processes for Manufacturing Source/Drain in the Next Generations of pMOS Transistors	807
<i>A. Hikavyy, W. Vanherle, L. Witters, B. Vincent, J. Dekoster, and R. Loo (imec)</i>	

- (E17-3205) 5:25 PM
 Formation of Uniaxially Strained Si/Ge Channels on SiGe Buffers Strain-
 Controlled with Selective Ion Implantation 815
*K. Sawano, Y. Hoshi, S. Nagakura (Tokyo City University), K. Arimoto,
 K. Nakagawa (University of Yamanashi), N. Usami (Tohoku University),
 and Y. Shiraki (Tokyo City University)*

Chapter 18
Emerging Applications Session 2: Quantum Effects / Spintronics

Wednesday PM
 Session Chair: T. Krishnamohan

- (E17-3206) 4:15 PM
 (Invited) Coherent Manipulation of a Si/SiGe-based Singlet-Triplet Qubit 823
*E. T. Croke, M. G. Borselli, B. M. Maune, B. Huang, T. D. Ladd,
 P. W. Deelman, K. S. Holabird, A. A. Kiselev, I. Alvarado-Rodriguez,
 R. S. Ross, A. E. Schmitz, M. Sokolich, T. M. Hazard, M. F. Gyure, and
 A. T. Hunter (HRL Laboratories LLC)*
- (E17-3207) 4:45 PM
 (Invited) Optical Spin Orientation in SiGe Heterostructures 831
*G. Isella, F. Bottegoni, S. Cecchi, A. Ferrari,
 F. Ciccacci (Politecnico di Milano), F. Pezzoli, A. Giorgioni, E. Gatti,
 E. Grilli, M. Guzzi (Università di Milano Bicocca), C. Lange, N. Köster,
 R. Woscholski, S. Chatterjee (Philipps-Universität Marburg), D. Trivedi,
 P. Li, Y. Song, and H. Dery (University of Rochester)*
- (E17-3208) 5:15 PM
 Enhancement-Mode Buried Strained Silicon Channel Double Quantum Dot
 with Integrated Electrometer 837
*T. Lu (Sandia National Labs), N. Bishop, T. Pluym, P. Kotula, M. Lilly,
 and M. Carroll (Sandia National Laboratories)*
- (E17-3209) 5:35 PM
 Local Quantity Analysis of Nanosize Electronics and Spintronics Material 843
M. Senami and A. Tachibana (Kyoto University)

Reception and Workshop on Next Generation Devices

Wednesday PM

Session Co-Chairs: K. Saraswat and D. Hareme

see page vii for more details

7:00 PM

Reception

(E17-3210) 7:30 PM

Panel Discussion: How Far Can We Push Si CMOS and What are the Alternatives for Future ULSI

9:00 to 9:30 PM

Speakers

*T. Ning (IBM), S. Takaga (University of Tokyo),
W. Maszara (Global Foundries), C. Claeys (imec),
K. Uchida (Keio University), P. Gargini (Intel)*

Chapter 19 GeSn Session 2: GeSn Epitaxy

Thursday AM

Session Chair: B. Vincent

(E17-3211) 8:00 AM

(Invited) Ge_{1-x}Sn_x Materials: Challenges and Applications

853

*R. Loo, B. Vincent, F. Gencarelli, C. Merckling, A. Kumar, G. Eneman,
L. Witters, W. Vandervorst, M. Caymax, M. Heyns, and A. Thean (imec)*

(E17-3212) 8:30 AM

GeSn Alloys on Si Using Deuterated Stannane and Trigermane: Synthesis and Properties

865

*G. Grzybowski, R. T. Beeler, L. Jiang, D. J. Smith, A. V. Chizmeshya,
J. Kouvetakis, and J. Menéndez (Arizona State University)*

(E17-3213) 8:50 AM

Crystalline Properties and Strain Relaxation Mechanism of CVD Grown GeSn

875

*F. Gencarelli, B. Vincent (imec), J. Demeulemeester,
A. Vantomme (KU Leuven), A. Moussa, A. Franquet, A. Kumar,
H. Bender, J. Meersschaut, W. Vandervorst, R. Loo, M. Caymax (imec),
K. Temst (KU Leuven), and M. Heyns (imec)*

(E17-3214) 9:10 AM
 Epitaxial Growth of Ge_{1-x}Sn_x by Reduced Pressure CVD Using SnCl₄ and Ge₂H₆ 885
S. Wirths, D. Buca, A. Tiedemann, B. Holländer, P. Bernardy, T. Stoica, D. Grützmacher, and S. Mantl (Forschungszentrum Jülich)

(E17-3215) 9:30 AM
 Thermal Chemical Vapor Deposition of Epitaxial Germanium Tin Alloys n/a
Y. Huang, C. Wang, M. Jin, E. Sanchez, and Y. Kim (Applied Materials, Inc.)

Chapter 20 GeSn Session 3: GeSn Epitaxy

Thursday AM
 Session Chair: B. Vincent

(E17-3216) 10:05 AM
 (Invited) Growth and Optical Properties of Ge_{1-x}Sn_x Alloy Thin Films with a High Sn Content 897
S. Zaima, O. Nakatsuka, M. Nakamura (Nagoya University), W. Takeuchi, Y. Shimura, and N. Taoka (Nagoya University)

(E17-3217) 10:35 AM
 Growth of Ge_{1-x}Sn_x Alloys Using Combined Sources of Solid Tin and Gaseous Germane 903
S. Su, B. Cheng, D. Zhang, G. Zhang, C. Xue, and Q. Wang (Institute of Semiconductors, Chinese Academy of Sciences)

(E17-3218) 10:55 AM
 Growth and Characterization of Heteroepitaxial Layers of GeSiSn Ternary Alloy 907
T. Yamaha, O. Nakatsuka (Nagoya University), S. Takeuchi (Covalent Silicon Corp.), W. Takeuchi, N. Taoka (Nagoya University), K. Araki (Covalent Materials Co.), K. Izunome (Covalent Silicon Corp.), and S. Zaima (Nagoya University)

(E17-3219) 11:15 AM
 Single Crystalline GeSn on Silicon by Solid Phase Crystallization 915
R. R. Lieten, S. Decoster, M. Menghini, J. Seo, A. Vantomme, and J. Locquet (KU Leuven)

(E17-3220) 11:35 AM
Tin Deuteride (SnD₄) Stabilization 921
R. F. Spohn and C. B. Richenberg (Praxair, Inc.)

Chapter 21
GeSn Session 4: GeSn FET

Thursday PM
Session Co-Chairs: B. Vincent and Y.-C. Yeo

(E17-3221) 1:10 PM
(Invited) Tin-Incorporated Source/Drain and Channel Materials for Field-Effect Transistors 931
Y. Yeo, G. Han, X. Gong, L. Wang, W. Wang, Y. Yang, P. Guo, B. Liu (National University of Singapore (NUS)), S. Su, G. Zhang, C. Xue (Institute of Semiconductors, Chinese Academy of Sciences), and B. Cheng (State Key Laboratory on Integrated Optoelectronics)

(E17-3222) 1:40 PM
(Invited) GeSn Channel n and p MOSFETs 937
S. Gupta, R. Chen (Stanford University), B. Vincent, D. Lin (imec), B. Magyari-Kope (Stanford University), M. Caymax, J. Dekoster (imec), J. S. Harris, Y. Nishi, and K. C. Saraswat (Stanford University)

(E17-3223) 2:10 PM
High Hole Mobility in Strained Germanium-Tin (GeSn) Channel pMOSFET Fabricated on (111) Substrate 943
G. Han (National University of Singapore (NUS)), S. Su (Institute of Semiconductors, Chinese Academy of Sciences), Y. Yang, P. Guo, X. Gong, L. Wang, W. Wang, C. Guo (National University of Singapore (NUS)), G. Zhang, C. Xue, B. Cheng (Institute of Semiconductors, Chinese Academy of Sciences), and Y. Yeo (National University of Singapore (NUS))

(E17-3224) 2:30 PM
Fabrication and Negative Bias Temperature Instability (NBTI) Study on Ge_{0.97}Sn_{0.03} P-MOSFETs with Si₂H₆ Passivation and HfO₂ High-k and TaN Metal Gate 949
X. Gong (National University of Singapore (NUS)), S. Su (Institute of Semiconductors, Chinese Academy of Sciences), B. Liu, L. Wang, W. Wang, Y. Yang, R. Cheng, E. Kong (National University of Singapore (NUS)), B. Cheng (Institute of Semiconductors, Chinese Academy of Sciences), G. Han, and Y. Yeo (National University of Singapore (NUS))

Chapter 22
Emerging Applications Session 3: Novel Devices and Memories

Thursday PM

Session Chair: T. Krishnamohan

(E17-3225) 3:05 PM

Si/SiGe Thermoelectric Generators

959

D. J. Paul, A. Samarelli, L. Ferre Llin, Y. Zhang, J. M. Weaver, P. S. Dobson (University of Glasgow), S. Cecchi (Politecnico di Milano), J. Frigerio, F. Isa (L-NESS, Politecnico di Milano), D. Chrastina (L-NESS Dip. di Fisica - Politecnico di Milano), G. Isella (Politecnico di Milano), T. Etzelstorfer, J. Stangl (Johannes Kepler Universität), and E. Müller Gubler (ETH Zurich)

(E17-3226) 3:25 PM

SiGe Band-to-Band Tunneling Calibration based on p-i-n Diodes: Fabrication, Measurement and Simulation

965

K. Kao, A. Verhulst, R. Rooyackers, A. Hikavy, E. Simoen, K. Arstila, B. Douhard, R. Loo, A. M. Simoen (imec), J. Tolle (ASM America), H. Dekkers (imec), V. Machkaoutsan, J. Maes (ASM Belgium), K. De Meyer, N. Collaert, M. Heyns, C. Huyghebaert, and A. Thean (imec)

(E17-3227) 3:45 PM

Tunneling Field-Effect Transistor (TFET) with Novel Ge/In_{0.53}Ga_{0.47}As Tunneling Junction

971

P. Guo, Y. Yang (National University of Singapore), Y. Cheng (Institute of Materials Research and Engineering), G. Han (National University of Singapore), C. Chia (Institute of Materials Research and Engineering), and Y. Yeo (National University of Singapore)

(E17-3228) 4:05 PM

Germanium Tin Tunneling Field Effect Transistor for Sub-0.4 V Operation

979

Y. Yang, K. Low, P. Guo, W. Wang, G. Han, and Y. Yeo (National University of Singapore)

(E17-3229) 4:25 PM

Si/SiGe Tunneling Static Random Access Memories

987

G. Ternent and D. J. Paul (University of Glasgow)

(E17-3230) 4:45 PM

Ge Surface-Energy-Driven Secondary Grain Growth for Vertical Channel in 3D NAND Flash Memories

991

S. Lee, Y. Son, and E. Yoon (Seoul National University)

Chapter 23
Epitaxy Session 3: In Situ Doping of Si, SiGe, and Ge Epilayers

Thursday PM

Session Co-Chairs: R. Loo and B. Tillack

- (E17-3231) 3:05 PM
Epitaxial Growth and Applications of Low-Resistivity Phosphorous-Doped $\text{Si}_{1-x}\text{C}_x$ n/a
T. N. Adam (University at Albany), N. Loubet (STMicroelectronics), A. Reznicek, V. Paruchuri (IBM Research), R. Sampson (STMicroelectronics), and D. Sadana (IBM Research)
- (E17-3232) 3:35 PM
Selective Epitaxial Growth of Heavily Boron-Doped Silicon with Uniform Doping Depth Profile 999
Z. Zhu, Z. Cong, and B. Ramachandran (Applied Materials Inc.)
- (E17-3233) 3:55 PM
High Tensile Strained In-Situ Phosphorus Doped Silicon Epitaxial Film for nMOS Applications 1007
Z. Ye, S. Chopra, R. Lapena, Y. Kim, and S. Kuppurao (Applied Materials)
- (E17-3234) 4:15 PM
(Invited) Microstructure Development in Epitaxially Grown In Situ Boron and Carbon Co-Doped Strained 60% Silicon-Germanium Layers 1013
A. Reznicek (IBM Research), T. N. Adam (University at Albany), J. Li, Z. Zhu, R. Murphy (IBM Semiconductor Research and Development Center), S. W. Bedell, V. Paruchuri, and D. K. Sadana (IBM T.J. Watson Research Center)
- (E17-3235) 4:35 PM
In Situ Boron (B) Doped Germanium (Ge:B) Grown on (100), (110), and (111) Silicon: Crystal Orientation and B Incorporation Effects 1025
G. Han, Q. Zhou, P. Guo, W. Wang, Y. Yang, and Y. Yeo (National University of Singapore)

Chapter 24
Related Compounds Session 1: Heterogeneous Integration

Friday AM

Session Chair: A. Reznicek

- (E17-3236) 8:00 AM
(Invited) Materials Integration for III-V/SiGe+CMOS Integrated Circuit Platforms 1033
E. A. Fitzgerald (Massachusetts Institute of Technology)
- (E17-3237) 8:30 AM
(Invited) Heterogeneous Integration of III-V Devices and Si CMOS on a Silicon Substrate 1039
T. E. Kazior (Raytheon), J. LaRoche, and W. Hoke (Raytheon Integrated Defense Systems)
- (E17-3238) 9:00 AM
(Invited) Heterogeneous Integration of InP HBTs on CMOS: Leveraging and Providing Value to Conventional Silicon Technologies 1047
J. C. Li, Y. Royter, P. Patterson, T. Hussain, J. R. Duvall, M. C. Montes, I. Valles, F. Ku, M. F. Boag-O'Brien, A. Lopez, D. Le, D. Zehnder, S. Kim, S. T. Chen, T. Oh, M. Akmal, E. F. Wang, D. A. Hitko, M. Sokolich, D. H. Chow, P. D. Brewer, and K. R. Elliott (HRL Laboratories LLC)
- (E17-3239) 9:30 AM
(Invited) Hybrid Wafer Bonding and Heterogeneous Integration of GaN HEMTs and Si (100) MOSFETs 1055
H. Lee, Z. Li, M. Sun, K. Ryu, and T. Palacios (Massachusetts Institute of Technology)

Chapter 25
Related Compounds Session 2: Processing

Friday AM

Session Chair: A. Reznicek

- (E17-3240) 10:15 AM
(Invited) Scalable GaN-on-Silicon Using Rare Earth Oxide Buffer Layers 1065
F. Arkun, M. Lebby, R. Dargis, R. Roucka, R. S. Smith, and A. Clark (Translucent Inc.)

(E17-3241) 10:45 AM	
Formation and Characterization of Nickel Germanosilicide on Si _{1-x} Ge _x /Si/SiO ₂ /Si	1073
<i>W. Yoo (WaferMasters, Inc.), N. Hasuike, H. Harima, and M. Yoshimoto (Kyoto Institute of Technology)</i>	
(E17-3242) 11:05 AM	
Low Specific Ohmic Contacts to n-type Germanium Using a Low Temperature NiGe Process	1081
<i>K. F. Gallacher, P. Velha, D. J. Paul, I. Maclaren (University of Glasgow), M. Myronov, and D. R. Leadly (University of Warwick)</i>	
(E17-3243) 11:25 AM	
Formation of 1.7-nm-thick-EOT Germanium Dioxide Film with a High- Quality Interface Using a Direct Neutral Beam Oxidation Process	1085
<i>A. Wada (Tohoku University), R. Zhang, S. Takagi (The University of Tokyo), and S. Samukawa (Tohoku University)</i>	

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