

IWCE 2013 Program

June 4

Short Course: Quantum Theory of Electron Transport

- S1** 13:30–14:30
T. Ando (*Tokyo Institute of Technology*)
“Electronic and Transport Properties of Graphene”
- S2** 14:30–15:30
J.R. Barker (*University of Glasgow*)
“The Non-Equilibrium Green Function Approach to Quantum Transport in Nano-Structures”
15:30–16:00 *Coffee Break*
- S3** 16:00–17:00
M.V. Fischetti (*University of Texas at Dallas*)
“Pseudopotential-based Calculation of Electronic Structure and Transport in Nanostructures”
- S4** 17:00–18:00
C. Hamaguchi (*Osaka University, Sharp*)
“ $k \cdot p$ Perturbation and Energy Bands of Semiconductors”
18:00–20:00 *Registration and Welcome Reception*

June 5

9:05–9:15 Opening and Welcome Remarks
N. Mori (*Osaka University*)

Session A: Quantum Transport Theory and Techniques

- A1** 9:15–9:45 **[invited talk]**
I. Knezevic (*University of Wisconsin-Madison*)
“Master Equations in Quantum Transport”
- A2** 9:45–10:15 **[invited talk]**
M. Trovato and L. Reggiani (*Università di Catania, Università del Salento*)
“A Nonlocal Formulation of Quantum Maximum Entropy Principle Including Fractional Exclusion Statistics”
- A3** 10:15–10:30
P. Marconcini, D. Logoteta, and M. Macucci (*Università di Pisa*)
“A Sinc-Based Approach for the Solution of Differential Transport Problems with Periodic Boundary Conditions”
- A4** 10:30–10:45
B. Fu and M.V. Fischetti (*University of Texas at Dallas*)
“Open-Boundary-Condition Ballistic Quantum Transport using Empirical Pseudopotentials”
10:45–11:15 *Coffee Break*

Session B: 2D Semiconductor and Graphene

- B1** 11:15–11:45 [invited talk]
S. Salahuddin (*University of California, Berkeley*)
“Electronics with 2D Semiconductors and their Heterostructures”
- B2** 11:45–12:00
F. Zahid, L. Liu, Y. Zhu, J. Wang, and H. Guo
(*University of Hong Kong, Nanoacademic Technologies, McGill University*)
“Tight-Binding Modeling of the Band Structures of Monolayer, Bilayer, and Bulk MoS₂”
- B3** 12:00–12:15
S. Berrada, V. Hung Nguyen, A. Alarcón, D. Querlioz, J. Saint-Martin, A. Bournel, C. Chassat, and P. Dollfus (*University of Paris-Sud, L.Sim*)
“Graphene Nanomesh Transistors with High On/Off Ratio and Good Current Saturation”
- B4** 12:15–12:30
N. Sule, K.J. Willis, S.C. Hagness, and I. Knezevic (*University of Wisconsin-Madison*)
“Effects of Charged Impurity Clusters on the Conductivity of Supported Graphene”
- B5** 12:30–12:45
M. Manoharan, S. Inoue, and H. Mizuta (*JAIST, University of Southampton*)
“First-Principles Study of CO₂ and NH₃ Adsorption on Armchair Graphene Nanoribbon”
- B6** 12:45–13:00
A. Afzalian, A. Lherbier, J.-C. Charlier, and D. Flandre (*Université catholique de Louvain*)
“Multiscale Simulation of Epoxide Adsorbate Functionalization on Graphene Nanoribbons”
- 13:00–14:30 *Lunch*

Session C: Quantum Transport and Fluctuation

- C1** 14:30–14:45
Y. Wang, Y. He, G. Klimeck, and T. Kubis (*Purdue University*)
“Nonequilibrium Green’s Function Method: Algorithm for Regular and Irregular Leads”
- C2** 14:45–15:00
W.G. Vandenberghe and M.V. Fischetti (*University of Texas at Dallas*)
“Determination of Bound States in a Device with Transmitting Boundary Conditions”
- C3** 15:00–15:15
W. Goes, M. Toledano-Luque, O. Baumgartner, F. Schanovsky, B. Kaczer, and T. Grasser (*TU Wien, imec*)
“A Comprehensive Model for Correlated Drain and Gate Current Fluctuations”
- C4** 15:15–15:30
S. Ravandi, B. Fu, W.G. Vandenberghe, S. Aboud, and M.V. Fischetti
(*University of Texas at Dallas, Stanford University*)
“Pseudopotential-Based Study of Gate Leakage and Contact Resistance beyond the 10 nm Node”
- C5** 15:30–15:45
A. Martinez, J.R. Barker, and M. Aldegunde (*Swansea University, University of Glasgow*)
“Impact of Dielectric Induced Dynamical Many-Body Correlation Effects on the Transfer Characteristic of Si Nanowire Transistor”

C6 15:45–16:00

L. Gerrer, S. Ling, S.M. Amoroso, A.M. El-Sayed, M.B. Watkins, A.L. Shluge, and A. Asenov
(*University of Glasgow, University College London, Gold Standard Simulations*)
“Negative Bias Temperature Instabilities: A Multiscale Approach from First Principles to TCAD Time-Dependent Variability Simulations”

C7 16:00–16:15

M. Uematsu, K.M. Itoh, G. Mil’nikov, H. Minari, and N. Mori
(*Keio University, Osaka University, JST CREST*)
“Width Dependence of RDD-Induced Current Fluctuation in Silicon Nanowire Transistors”

C8 16:15–16:30

C.-Y. Chen, Y.-Y. Chen, and Y. Li (*National Chiao Tung University*)
“Multi-Fin Bulk FinFET Characteristic Fluctuation Induced by Process Variation and Random Dopant”

16:30–18:30 [Poster Session](#)

June 6

Session D: Semiclassical Transport

D1 9:00–9:30 **[invited talk]**

T. Sadi (*Aalto University*)
“The Monte Carlo Approach for Investigating Electrothermal Effects in Nanostructures”

D2 9:30–9:45

D. Rideau, Y.M. Niquet, O. Nier, P. Palestri, D. Esseni, V.H. Nguyen, F. Triozon, I. Duchemin, D. Garetto, L. Smith, L. Silvestri, F. Nallet, C. Tavernier, and H. Jaouen
(*STMicroelectronics, IMEP-LAHC, SP2M, CEA-LETI, University of Udine, Synopsys*)
“Mobility in FDSOI Devices: Monte Carlo and Kubo Greenwood Approaches Compared to NEGF Simulations”

D3 9:45–10:00

S. Oki, T. Misawa, and Y. Awano (*Keio University*)
“Quasi Self-consistent Monte Carlo Particle Simulations of Local Heating Properties in Single Layer Graphene Nano-channel FETs”

D4 10:00–10:15

E.A. Towie, C. Riddet, and A. Asenov (*University of Glasgow*)
“3D Monte Carlo Simulation of III-V Implant-Free Quantum-Well and FinFET MOSFETs”

D5 10:15–10:30

R. Hathwar, M. Saraniti, and S.M. Goodnick (*Arizona State University*)
“Full Band Monte Carlo Simulation of Silicon Nanowires and Junctionless Nanowire MOSFETs”

D6 10:30–10:45

K. Kukita, I.N. Adisusilo, and Y. Kamakura (*Osaka University, JST CREST*)
“Influence of Phonon Dispersion Relation on Thermal Resistance in Silicon Nanostructures”

10:45–11:15 *Coffee Break*

Session E: Spin and Memory Deives

- E1** 11:15–11:45 **[invited talk]**
 V. Sverdlov, H. Mahmoudi, A. Makarov, D. Osintsev, J. Weinbub, T. Windbacher, and S. Selberherr
 (TU Wien)
 “Modeling Spin-Based Devices in Silicon”
- E2** 11:45–12:15 **[invited talk]**
 B. Magyari-Ko e and Y. Nishi (Stanford University)
 “Modeling the Resistive Switching Process in Transition Metal Oxide Based Non-Volatile Memory
 Devices”
- E3** 12:15–12:30
 A. Makarov, V. Sverdlov, and S. Selberherr (TU Wien)
 “Structural Optimization of MTJs with a Composite Free Layer”
- E4** 12:30–12:45
 D. Osintsev, V. Sverdlov, and S. Selberherr (TU Wien)
 “Influence of Surface Roughness Scattering on Spin Lifetime in Silicon”
- E5** 12:45–13:00
 A. Papp, G. Csaba, and W. Porod (University of Notre Dame)
 “Non-Boolean Computing Using Spin Waves”
- 13:00–14:30 *Lunch*

Session F: Quantum Transport and Optics

- F1** 14:30–15:00 **[invited talk]**
 U. Hetmaniuk, Y. Zhao, and M. Anantram (University of Washington)
 “A Nested Dissection Approach to Modeling Transport in Nanodevices”
- F2** 15:00–15:15
 M. Lindskog, D.O. Winge, and A. Wacker (Lund University)
 “Nonequilibrium Green’s Function Simulations of THz Quantum Cascade Lasers”
- F3** 15:15–15:30
 A. Grier, Z. Ikoni , A. Valavanis, J.D. Cooper, D. Indjin, and P. Harrison (University of Leeds)
 “Density Matrix Model Applied to GaAs and GaN-Based Terahertz Quantum Cascade Lasers”
- F4** 15:30–15:45
 O. Baumgartner, Z. Stanojevi , and H. Kosina (TU Wien)
 “Modeling of the Effects of Band Structure and Transport in Quantum Cascade Detectors”
- F5** 15:45–16:00
 N. Cavassilas, F. Michelini, and M. Bescond (IM2NP)
 “Quantum Calculation of Solar Cell Efficiency”
- F6** 16:00–16:15
 W. Hu, M.M. Rahman, T. Okada, A. Higo, Y. Li, and S. Samukawa
 (Tohoku University, JST CREST, National Chiao Tung University)
 “Simulation of Type-II Ge/Si Quantum Dot Solar Cells”
- 16:15–16:45 *Coffee Break*

Session G: Inelastic Scattering and Thermal Transport

- G1** 16:45–17:15 **[invited talk]**
 M. Bescond, H. Mera, N. Cavassilas, C. Li, and M. Lannoo (*IM2NP*)
 “Inelastic Scattering in Nano-devices: One-Shot Current Conserving Approach”
- G2** 17:15–17:30
 H. Mera, M. Lannoo, N. Cavassilas, and M. Bescond (*IM2NP*)
 “SCBA Made Simple”
- G3** 17:30–17:45
 R. Rhyner and M. Luisier (*ETH Zürich*)
 “Phonon-Limited Low-Field Mobility in Silicon Nanowires: NEGF Quantum Transport vs. Linearized Boltzmann”
- G4** 17:45–18:00
 H. Karamitaheri, N. Neophytou, and H. Kosina (*TU Wien*)
 “Thermal Conductivity of Si Nanowires Using Atomistic Phonon Dispersions”
- G5** 18:00–18:15
 J. Hattori and S. Uno (*Ritsumeikan University, JST CREST*)
 “Impact of Impurity Mass on Ballistic Phonon Thermal Transport in Silicon Nanowires”
- G6** 18:15–18:30
 T. Imamoto and T. Endoh (*Tohoku University, JST CREST*)
 “Improvement of Self-Heating Effect Employing Vertical-Channel Field-Effect-Diode 1T-DRAM”
- 19:30–21:30 *Banquet*

June 7

Session H: Graphene and Novel Materials

- H1** 9:00–9:30 **[invited talk]**
 S. Islam, V.E. Dorgan, A.Y. Serov, A. Behnam, K.L. Grosse, M.-H. Bae, and E. Pop (*University of Illinois at Urbana-Champaign, Korea Research Institute of Standards and Science, Stanford University*)
 “Electro-Thermal Transport in Graphene Devices”
- H2** 9:30–9:45
 S. Aboud, J. Kim, and M.V. Fischetti (*Stanford University, University of Texas at Dallas*)
 “DFT Study of Electronic Transport Properties in Supported Armchair Graphene Nanoribbons”
- H3** 9:45–10:00
 S.B. Touski, M. Pourfath, and H. Kosina (*University of Tehran, TU Wien*)
 “Electronic Transport in Graphene Nanoribbons in the Presence of Substrate Surface Corrugation”
- H4** 10:00–10:15
 M. Manoharan and H. Mizuta (*JAIST, University of Southampton*)
 “Ab-initio Study of Edge Defects in Graphene Nanoribbon”

H5 10:15–10:30

V. Nam Do, H. Anh Le, and P. Dollfus
(*Hanoi University of Science and Technology, University of Paris-Sud*)
“Electron Transport Characteristics of Graphene-Metal Interfaces”

H6 10:30–10:45

Z. Jiang, M.A. Kuroda, Y. Tan, D.M. Newns, G.J. Martyna, M. Povolotskyi, T.B. Boykin, T. Kubis, and G. Klimeck (*Purdue University, IBM TJ Watson Research Center, University of Alabama in Huntsville*)
“Tight-Binding Modeling of Intermediate Valence Compound SmSe for Piezoelectronic Devices”

10:45–11:15 *Coffee Break*

Session I: Dissipation and Transport in Nanostructures

I1 11:15–11:45 [invited talk]

Y. Asai (*AIST*)
“Non-equilibrium Low-Energy Transport Physics of Electron and Phonon at Nanoscale”

I2 11:45–12:00

H. Ryu, S. Lee, Y.-H. Matthias Tan, M. Fühlsle, J.A. Miwa, S. Mahapatra, M.Y. Simmons, L.C.L. Hollenberg, and G. Klimeck (*KISTI, Samsung Advanced Institute of Technology, Purdue University, University of New South Wales, University of Melbourne*)
“Tight-Binding Simulations of Channel Modulation in a Single Atom Transistor”

I3 12:00–12:15

Y. Tanimura and A. Sakurai (*Kyoto University*)
“An Approach to Quantum Transport Based on Reduced Hierarchy Equations of Motion”

I4 12:15–12:30

T. Ono (*Osaka University*)
“Ab-initio Study on Scattering Potentials of Defects on Ge(001) Surfaces”

I5 12:30–12:45

X. Gao, D. Mamaluy, E. Nielsen, R. Muller, R. Young, N. Bishop, M. Lilly, and M. Carroll
(*Sandia National Laboratories*)
“Efficient Self-Consistent Quantum Transport Simulator for Quantum Well Devices”

I6 12:45–13:00

M. Macucci and P. Marconcini (*Università di Pisa*)
“Is There a Mesoscopic Braess Paradox?”

13:00–14:30 *Lunch*

Session J: Engineering Applications

J1 14:30–14:45

V.P. Georgiev, S. Markov, L. Vilà-Nadal, A. Asenov, and L. Cronin (*University of Glasgow*)
“Molecular-Metal-Oxide-nanoelectronicS (M-MOS): Achieving the Molecular Limit”

J2 14:45–15:00

A. Scheinmann and A. Schenk (*Integrated Systems Laboratory*)
“Defect Analysis with TCAD-Based DLTS Simulation”

- J3** 15:00–15:15
Z. Stanojević, O. Baumgartner, K. Schnass, M. Karner, and H. Kosina (*TU Wien, Global TCAD Solutions*)
“VSP – a Quantum Simulator for Engineering Applications”
- J4** 15:15–15:30
S.-H. Park, N. Kharche, D. Basu, Z. Jiang, S.K. Nayak, C.E. Weber, and G. Klimeck (*Purdue University, Intel, Brookhaven National Laboratory, Rensselaer Polytechnic Institute*)
“Scaling Effect on Specific Contact Resistivity in Nano-scale Metal-Semiconductor Contacts”
- J5** 15:30–15:45
K. Alam, S. Takagi, and M. Takenaka (*University of Tokyo*)
“Thickness Dependent Performance of (111) GaAs UTB nMOSFETs”
- J6** 15:45–16:00
J. Lee, Y. Lee, H. Choi, and M. Shin (*KAIST*)
“Quantum Simulation of III-V Double Gate Schottky Barrier MOSFETs”
- J7** 16:00–16:15
A. Wang and T. Endoh (*Tohoku University, JST CREST*)
“Reduction of Self-Heating Effect in CMOS Inverter of Vertical MOSFET by Common-Gate Layout”
- J8** 16:15–16:30
K. Fukuda, T. Mori, W. Mizubayashi, Y. Morita, A. Tanabe, M. Masahara, T. Yasuda, S. Migita, and H. Ota (*AIST*)
“A Compact Model for Wire-Type Tunnel FETs Considering Tunneling Path Lengths”

Poster Session [June 5, 16:30–18:30]

- P1** Y. Wang, F. Zahid, Y. Zhu, L. Liu, J. Wang, and H. Guo (*University of Hong Kong, Nanoacademic Technologies, McGill University*) “Band Offsets of $\text{Al}_x\text{Ga}_{1-x}\text{As}/\text{GaAs}$ Heterojunction from Atomistic First Principles”
- P2** S.M. Aspera, H. Kasai, H. Kishi, N. Awaya, S. Ohnishi, and Y. Tamai (*Osaka University, Sharp*)
“Resistive Switching in RRAM Devices through First Principles Calculation: Oxygen Vacancy Induced Electron Conduction Path in HfO_2 ”
- P3** H.M. Rafferty, A.D. Burnett, Z. Ikonić, and R.W. Kelsall (*University of Leeds*) “Electronic Structure of Interface Defects in Epitaxially Grown Germanium on Silicon”
- P4** B. Liu, R. Akis, and D.K. Ferry (*Arizona State University*) “Some Considerations on Conductance Fluctuations in Mesoscopic Structures”
- P5** P. Schwaha, J.M. Sellier, M. Nedjalkov, I. Dimov, and S. Selberherr (*TU Wien, AVL List, Bulgarian Academy of Sciences*) “The Ultimate Equivalence Between Coherent Quantum and Classical Regimes”
- P6** Y. Hanashiro and M. Morifuji (*Osaka University*) “Effect of Defective Connection to Electrodes in Atomic Scale Conductors”
- P7** H.-H. Park, C. Jeong, S. Jin, W. Choi, Y.-T. Kim, U.-H. Kwon, K.-H. Lee, and Y. Park (*Samsung Electronics*) “Calculation of Alloy Scattering Mobility in SiGe FETs Based on Atomistic Tight-Binding Approach”
- P8** K. Gärtner and T. Koprucki (*Weierstrass Institute*) “Generalization of the Scharfetter-Gummel Scheme to Strictly Monotonous Carrier Density State-Equations”

- P9** S. Sho, S. Odanaka, and A. Hiroki (*Osaka University, Kyoto Institute of Technology*) “Analysis of Carrier Transport in Si and Ge MOSFETs Including Quantum Confinement and Hot Carrier Effects”
- P10** Z. Yin, L. Meng, Q. Chen, and G. Chen (*University of Hong Kong*) “A Frequency-Dependent QM/EM Method: Multi-Scale Simulation of Electronics”
- P11** M. Luisier (*ETH Zürich*) “How Far Can We Accelerate Full-Band Atomistic Device Simulations through Graphics Processing Units (GPUs)?”
- P12** A. Suzuki, T. Kamioka, H. Imai, Y. Kamakura, and T. Watanabe (*Waseda University, Osaka University, JST CREST*) “Accelerated Parallel Computing of Carrier Transport Simulation Utilizing Graphic Processing Units”
- P13** H. Imai, T. Kamioka, Y. Kamakura, K. Ohmori, K. Shiraishi, M. Niwa, K. Yamada, and T. Watanabe (*Waseda University, Osaka University, University of Tsukuba, JST CREST*) “Effect of Interface Roughness on Carrier Transport in Asymmetric Channel: An EMC/MD Simulation Study”
- P14** J.A. Morales Escalante, I.M. Gamba, A. Majorana, Y. Cheng, C.-W. Shu, and J.R. Chelikowsky (*University of Texas at Austin, Università degli Studi di Catania, Michigan State University, Brown University*) “Deterministic DG Solvers for EPM-Boltzmann-Poisson Transport”
- P15** T.T. Trang Nghiễm, J. Saint-Martin, and P. Dollfus (*University of Paris-Sud*) “New Self-Consistent Phonon-Electron BTE Solver for the Simulation of Ultra-Small DG-MOSFET”
- P16** M. Kimura, M. Hirako, T. Yamaoka, and S. Tani (*Ryukoku University*) “Device Simulation of Hall Effect around Grain Boundaries in Poly-Si Films”
- P17** M. Kimura and A. Nakashima (*Ryukoku University*) “Comparison of Off-Leakage Current between LTPS and HTPS TFTs”
- P18** J. Wang, G. Du, K. Wei, L. Zeng, and X. Liu (*Peking University*) “Mixed-Mode Simulation of Reconfigurable Si Nanowire Schottky Barrier Transistors Based Circuits”
- P19** M. Ono and T. Tezuka (*AIST*) “SNM Improvement for SRAMs Composed of High Mobility Channel MOSFETs”
- P20** S.R. Mehrotra, A. Paul, J. Cho, M. Povolotskyi, and G. Klimeck (*Purdue University, GLOBAL-FOUNDRIES*) “Effect of Fin Tapering in Nanoscale Si FinFETs”
- P21** C.-H. Chen, Y. Li, and S.-Y. Chu (*National Cheng-Kung University, National Chiao Tung University*) “On Rounding and Taper Fins of FinFET Varactors”
- P22** K. Matsuda (*Tokushia Bunri University at Kagawa*) “Modeling of Stress-Induced Effects on Depletion Layer Capacitance in MOS Capacitor”
- P23** T. Sasaki and T. Endoh (*Tohoku University, JST CREST*) “Gate Leakage Reduction of Vertical MOSFET with High-k Dielectric Film Employing Gate Dielectric Capacitance Oriented Design”
- P24** A. Itagaki, M. Muraguchi, and T. Endoh (*Tohoku University, JST CREST*) “Intrinsic Region Length Dependence of Vertical Double Gate IMOS”
- P25** H. Takeda, K. Uejima, K. Takeuchi, and M. Hane (*Renesas Electronics*) “Junction Leakage Variability Simulation Considering Random Discrete Dopants”
- P26** M. Aldegunde, A. Martinez, and J.R. Barker (*Swansea University, University of Glasgow*) “Impact of Scaling on the Variability in Multigate Transistors”
- P27** G. Mil’nikov, T. Zushi, M. Tomita, T. Watanabe, Y. Kamakura, and N. Mori (*Osaka University, Waseda University, JST CREST*) “Surface Roughness and Electron Transport Statistics in Si Nanowires”

- P28** M.S. Choi, M.A. Stroschio, and M. Dutta (*University of Illinois at Chicago*) “Effect of the Size and the Separation of Metal Nanodots on the Electromagnetic Enhancement to Surface-Enhanced Raman Spectroscopy”
- P29** H. Yasuda (*NICT*) “Terahertz Quantum Cascade Laser Using AlGaAs Wells for Higher-Temperature Operation”
- P30** T. Kotani, H. Yoshikawa, T. Miyake, P. Lugli, and C. Hamaguchi (*TU München, Sharp*) “Polarization Dependent Optical Absorption Properties of Quantum Dot Superlattices”
- P31** H. Yoshikawa, T. Kotani, Y. Kuzumoto, M. Izumi, Y. Tomomura, and C. Hamaguchi (*Sharp*) “Optical Absorption in InAs/In_{0.48}Ga_{0.52}P Quantum Dot Superlattices”
- P32** A. Tanaka, M. Morifuji, and M. Kondow (*Osaka University*) “Optical Coupling between Whispering-Gallery Mode and Waveguide Mode in Photonic Crystal”
- P33** P. Kivisaari, T. Sadi, J. Oksanen, and J. Tulkki (*Aalto University*) “Coupled Monte Carlo-Drift-Diffusion Simulation of Transport in III-N LEDs”
- P34** Y.W. Hwang, H.G. Lee, and T.Y. Won (*Inha University*) “Numerical Analysis on the Electrical and Optical Properties in Multilayer OLED Device”
- P35** H.G. Lee, Y.W. Hwang, and T.Y. Won (*Inha University*) “Computational Analysis on Recombination Rate for Organic Light Emitting Diodes”
- P36** M.-Y. Lee and Y. Li (*National Chiao Tung University*) “Comprehensive Study on Reflectance of Si₃N₄ Subwavelength Structures for Silicon Solar Cell Applications Using 3D Finite Element Analysis”
- P37** N. Zhang, M. Dutta, and M.A. Stroschio (*University of Illinois at Chicago*) “Interface Phonon Modes of Dual-Gate MOSFET System”
- P38** F.G. Ruiz, I.M. Tienda-Luna, A. Godoy, L. Donetti, and F. Gámiz (*University of Granada*) “Impact of the Phonon Confinement and Geometry on the Mobility of Si-Nanowires”
- P39** M. Aldegunde, R. Valin, A. Martinez, and J.R. Barker (*Swansea University, University of Glasgow*) “Dependence of Matthiessen’s Rule on Complex Phonon Self-Energies: A NEGF Study”
- P40** J.H. Oh, M.-G. Jang, and M. Shin (*KAIST, Electronics and Telecommunication Research Institute*) “Phonon Scattering at the Interface between Elastically Dissimilar Materials”
- P41** T. Tanaka and K.M. Itoh (*Keio University*) “Effective Deformation Potential in Ultrathin SOI”
- P42** V. Talbo, J. Saint-Martin, D. Querlioz, S. Retailleau, and P. Dollfus (*University of Paris-Sud*) “Thermoelectric Properties of Si-Based Single-Electron Transistors”
- P43** P. Marconcini, D. Logoteta, and M. Macucci (*Università di Pisa*) “Symmetry-Dependent Conductance Behavior in Graphene-Based Double-Dot Structures”
- P44** M. Ohnishi, K. Suzuki, and H. Miura (*Tohoku University*) “Change of the Electronic Properties of Carbon Nanotubes Cause by Three-Dimensional Strain Field”
- P45** S. Honda, K. Inuduka, and N. Sano (*University of Tsukuba*) “Effect of σ -Band for Conduction of Metal/Graphene/Metal Junctions”
- P46** S. Souma, T. Nakano, H. Nagai, and M. Ogawa (*Kobe University*) “Effect of Axial Strain on Switching Behavior of Carbon Nanotube Tunneling Field Effect Transistors”
- P47** T. Akiyama, M. Ueyama, E. Nishimura, M. Ogawa, and S. Souma (*Kobe University*) “Quantum Dynamical Simulation of Photo-Induced Graphene Switch”

- P48** T. Windbacher, O. Triebel, D. Osintsev, A. Makarov, V. Sverdlov, and S. Selberherr (*TU Wien*) “Switching Optimization of an Electrically Read- and Writable Magnetic Logic Gate”
- P49** M. Puraahmad, M.A. Stroschio, and M. Dutta (*University of Illinois at Chicago*) “Modeling the Effect of Nanowire Size on the Piezoelectric Nanogenerators Output”
- P50** Y. Hiramatsu, N. Mori, and Y. Kamakura (*Osaka University, JST CREST*) “Modeling of Current Distribution through Metal-Insulator-Metal Diodes with Tunnel Barrier Roughness”
- P51** H. Mahmoudi, T. Windbacher, V. Sverdlov, and S. Selberherr (*TU Wien*) “Optimization of Spin-Transfer Torque Magnetic Tunnel Junction-Based Logic Gates”
- P52** H. Koike, T. Ohsawa, and T. Endoh (*Tohoku University*) “Verification of Simulation Time Improvement for SPICE Simulator Using Built-in MTJ Model”
- P53** Y. Yoshida, H. Koike, M. Muraguchi, S. Ikeda, T. Hanyu, H. Ohno, and T. Endoh (*Tohoku University*) “A Model Reflecting Preheat Effect by Two-step Writing Technique for High Speed and Stable STT-MRAM”
- P54** M. Matsubara, J. Godet, L. Pizzagalli, and E. Bellotti (*Boston University, Institut P*) “Structural and Electronic Properties of Threading Screw Dislocations in GaN”
- P55** K. Kodama, H. Tokuda, and M. Kuzuhara (*University of Fukui*) “Dependence of Gate-to-Drain Distance on Electron Velocity in AlN/GaN HEMTs”
- P56** E. Bellotti, S. Shishehchi, and F. Bertazzi (*Boston University, DELEN and IEIIT-CNR*) “A Full-Band Monte-Carlo Study of Carriers Transport in III-Nitrides Alloys”
- P57** N.M. Shrestha, Y.Y. Wang, Y. Li, and E.Y. Chang (*National Chiao Tung University*) “Effect of AlN Spacer Layer on AlGaIn/GaN HEMTs”
- P58** K. Nomura, T. Ishikawa, T. Kondoh, A. Kawamoto, T. Matsumori, T. Sugiyama, and Y. Nishibe (*Toyota Central R&D Laboratories*) “A Fast Doping Profile Optimization Method for Power Devices”
- P59** E. Momox, N. Zakhleniuk, and N. Balkan (*University of Essex*) “Hydrodynamic and Drift-Diffusion Modelling of GaN-based Gunn Diodes”
- P60** K. Matsuura, M. Miyake, A. Ueno, and H.J. Mattausch (*Hiroshima University*) “Investigation of SiC p-i-n Diode Reverse-Recovery Effect for Compact Modeling”

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