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*)
"$\boldsymbol{k} \cdot \boldsymbol{p}$ 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 (*Universitá di Catania, Universitá 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 MoS_2"

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 CO_2 and NH_3 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-Kope 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. Ikonić, 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. Stanojević, 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. Füshsle, 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. Scheinemann 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 $Al_xGa_{1-x}As$/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, Universitá degli Studi di Catania, Michigan State University, Brown University*) "Deterministic DG Solvers for EPM-Boltzmann-Poisson Transport"

P15 T.T. Trang Nghiêm, 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, GLOBALFOUNDRIES*) "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. Stroscio, 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 Si_3N_4 Subwavelength Structures for Silicon Solar Cell Applications Using 3D Finite Element Analysis"

P37 N. Zhang, M. Dutta, and M.A. Stroscio (*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. Triebl, D. Osintsev, A. Makarov, V. Sverdlov, and S. Selberherr (*TU Wien*) "Switching Optimization of an Electrically Read- and Writable Magnetic Logic Gate"

P49 M. Purahmad, M.A. Stroscio, 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 AlGaN/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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