Monday November 30

Opening Remarks
8:45-9:00  K. Ishibashi, S. M. Goodnick

Special Plenary (Devoting Prof. Klaus von Klitzing)

9:00-9:40  Physics and Applications of Quantum Hall Effect
Klaus von Klitzing(invited), Patricia Haremski, and Jürgen Weis
Max-Planck-Institut für Festkörperforschung

Chihiro Hamaguchi(invited)

10:10-10:50  Quantum Hall Effect Theory Reprise
Allan MacDonald(invited)

Coffee

11:10-11:50  Topological Transport Phenomena in Graphene and Related Systems
Tsuneya Ando(invited)
Department of Physics, Tokyo Institute of Technology

11:50-12:20  Kondo Effect in the Quantum Hall Regime: A New Probe for the Electronic Structure of the Edge?
Rolf Haug(invited)

12:20-12:50  THz Emission from Intersubband plasmon excitations
Erich Gornik(invited)

Ad Hoc

Atomic Layer Materials & Graphene  I

19:00-19:30  ATLAS-TFET: Toward Green Transistors and Sensors
Kaustav Banerjee(invited)

19:30-19:45  Electronic Structure, Magneto-excitons and Valley Polarized Electron Gas in 2D Semiconductors MoS$_2$ and WS$_2$
Isil Ozfidan$^1$, Marek Korkusinski$^2$, Pawel Potasz$^3$, and Paweł Hawrylak$^1$
$^1$ Department of Physics, University of Ottawa
$^2$ Emerging and Disruptive Technologies Portfolio, National Research Council Canada
$^3$ Department of Theoretical Physics, Faculty of Fundamental Problems of technology, Wroclaw University of Technology

19:45-20:00  Scanning gate imaging of MoS$_2$ transistors
Masahiro Matsunaga$^1$, Ayaka Higuchi$^1$, Guanchen He$^2$, Yuichi Ochiai, Jonathan P. Bird$^2$, and Nobuyuki Aoki$^{1,3}$
$^1$ Graduate School of Advanced Integration Science, Chiba University
$^2$ Department of Electrical Engineering, University at Buffalo
$^3$ Japan Science and Technology Agency-PRESTO
20:00-20:15  **High room temperature optical polarization due to spin-valley coupling in monolayer WS$_2$**
B. T. Jonker$^1$, A. T. Hanbicki$^1$, G. Kioseoglou$^2$, M. Currie$^1$, C. S. Hellberg$^1$, K. M. McCready$^1$, and A. L. Friedman$^1$
$^1$Naval Research Laboratory
$^2$University of Crete

20:15-20:30  **Plasmon mediated energy relaxation in graphene**
D. K. Ferry
School of Electrical, Computer, and Energy Engineering, Arizona State University

20:30-20:45  **1/f noise in monolayer and bilayer graphene and its application to THz detection at room temperature**
Yuichi Ochiai$^1$, Nobuyuki Aoki$^1$, Katsuhiko Miyamoto$^1$, Takashige Omatsu$^1$, Tomohiro Yamaguchi$^2$, Koji Ishibashi$^2$, Jonathan P. Bird$^3$ and David K. Ferry$^4$
$^1$Graduate School of Advanced Integration Science, Chiba University
$^2$Advanced Device Laboratory, Advanced Science Institute (RIKEN)
$^3$Department of Electrical Engineering, University at Buffalo
$^4$Department of Electrical Engineering and CSSER
Tuesday December 1

Molecular Fluidic and Bio-related Systems

9:15-9:45  Molecular- and polymer-based electronic devices on flexible substrates
          Takhee Lee (invited)
          Department of Physics and Astronomy, Seoul National University

9:45-10:00  Biological Cell Manipulation by Magnetic Nanoparticles
           Frederick Gertz, and Alexander Khitun
           Electrical and Computer Engineering Department, University of California Riverside

10:00-10:15  Selective Detection of Human & Bird Influenza Virus by Sugar Chain Modified
             Graphene FET
             Kazuhiko Matsumoto, Ryota Hayashi, and Takao Ono
             Institute of Scientific and Industrial Research, Osaka University

Coffee

Quantum Dot

10:45-11:15  Symmetry games in driven quantum dot circuits
             Stefan Ludwig (invited)
             Paul-Drude-Institut für Festkörperelektronik

11:15-11:30  High-accuracy measurement of single-trap electron pumps in Si
             Gento Yamahata¹, Stephen P. Giblin², Masaya Kataoka², Takeshi Karasawa¹, and Akira
             Fujiwara¹
             ¹NTT Basic Research Laboratories
             ²National Physical Laboratory

11:30-11:45  Non perturbative full counting statistics for solid state entangler with double
             ferromagnetic islands
             Yukimi Kanai¹, Yuri Sawamura¹, Megumu Mihata², Takeshi Inagaki³, and Shuichi
             Iwabuchi¹
             ¹Department of Physics, Graduate School of Humanities and Sciences, Nara Women's
             University
             ²Microelectronics Center, TOSHIBA Corporation
             ³Graduate School of Material Science, Nara Institute of Science and Technology

11:45-12:00  Phonon Assisted Spin Orbit Transitions in Spin Interferometers
             Geof Aers¹, Sergei Studenikin¹, Marek Korkusinski¹, Ghislain Granger¹, Alicia Kam¹ and
             Andy Sachrajda¹
             ¹National Research Council of Canada

12:00-12:15  Terahertz single electron photovoltaic effect in self-assembled InAs quantum dots
             Y. Zhang¹, K. Shibata¹, N. Nagai¹, C. Ndebeka-Bandou², G. Bastard², and K. Hirakawa¹
             ¹Institute of Industrial Science and INQIE, University of Tokyo
             ²Laboratoire Pierre Aigrain, Ecole Normale Superieure
12:15-12:30  **Transport though InAs self-assembled quantum dots controlled by sidegate voltages**
Akira Oiwa¹, Ryoki Shikishima¹, Takashi Hirayama¹, Haruki Kiyama¹, Shoji Baba²,
Naomi Nagai³, Kazuhiko Hirakawa³, and Seigo Tarucha⁴₅
¹ The Institute of Scientific and Industrial Research, Osaka University
² Department of Applied Physics, School of Engineering, The University of Tokyo
³ Institute of Industrial Science, The University of Tokyo
⁴ RIKEN Center for Emergent Matter Science (CEMS)

12:30-12:45  **Effects of charging and energy dissipation on current and noise correlation in solid state entangler based on non perturbative full counting statistics**
Yuri Sawamura¹, Yukimi Kanai¹, Megumu Mihata², Takeshi Inagaki³ and Shuichi Iwabuchi¹
¹ Department of Physics, Graduate School of Humanities and Sciences, Nara Women’s University
² Microelectronics Center, TOSHIBA Corporation
³ Graduate School of Material Science, Nara Institute of Science and Technology

12:45-13:00  **Signatures and Detection of Majorana Zero Modes using Nano devices**
Dong E. Liu¹, Alex Levchenko², and Roman M. Lutchyn¹
¹ Station Q, Microsoft Research
² Department of Physics, University of Wisconsin-Madison

---

**Ad Hoc**

**Poster**

18:30-19:45

P1  **Electric-field control of quantum states in nanostructures by electric-double-layer gating**
Kenji Shibata¹², Kenji Yoshida², and Kazuhiko Hirakawa²
¹ Tohoku Institute of Technology
² IIS and INQIE, University of Tokyo

P2  **Formation of Au oxide layer for highly sensitive graphene photosensor toward single photon sensing**
Shohei Ishida¹, Yuki Anno¹, Shihoko Kobayashi¹, Masato Takeuchi², Masaya Matsuoka²,
Kuniharu Takei¹, Takayuki Arie¹, Seiji Akita¹
¹ Department of Physics and electronics, Osaka Prefecture University
² Department of Applied Chemistry, Osaka Prefecture University

P3  **Dephasing effect on a perfectly conducting channel in disordered graphene nanoribbons with zigzag edges**
Yuji Shimomura and Yositake Takane
Department of Quantum Matter, Graduate School of Advanced Sciences of Matter,
Hiroshima University

P4  **Electronic structures of zigzag-edge nanoribbon lateral superlattices**
Futo Hashimoto, Nobuya Mori, Osamu Kubo, and Mitsuhiro Katayama
Graduate School of Engineering, Osaka University

P5  **Electron Transport in Densely-Packed Graphene Nanoribbons Formed on a Corrugated SiC Surface**
Hirokazu Tanaka¹, Kohei Fukuma², Kohei Morita², Shingo Hayashi², Takashi Kajiwara²,
A. Visikovskiy², Satoru Tanaka², Akinobu Kanda¹
¹ Division of Physics and TIMS, Faculty of Pure and Applied Sciences, University of Tsukuba
² Department of Applied Quantum Physics and Nuclear Engineering, Kyushu University
Boundary between mono- and bi-layer graphene as a valley filter
Takeshi Nakanishi\textsuperscript{1} and Tsuneya Ando\textsuperscript{2}
\textsuperscript{1} Nanomaterials Research Institute, AIST
\textsuperscript{2} Department of Physics, Tokyo Institute of Technology

Encapsulated Graphene/Superconductor Junctions: Formation and Electron Transport
Katsuhide Yarimizu\textsuperscript{1}, Kenta Katakura\textsuperscript{1}, Youiti Ootuka\textsuperscript{1}, Kenji Watanabe\textsuperscript{2}, Takashi Taniguchi\textsuperscript{2}, Keiji Ueno\textsuperscript{3}, Hikari Tomori\textsuperscript{1,4}, Akinobu Kanda\textsuperscript{1}
\textsuperscript{1} Division of Physics and TIMS, Faculty of Pure and Applied Sciences, University of Tsukuba
\textsuperscript{2} National Institute for Materials Science (NIMS)
\textsuperscript{3} Department of Chemistry, Saitama University
\textsuperscript{4} PRESTO-JST

Control of Q-factor and nonlinearity of carbon nanotube mechanical resonator by electrostatic force
Masaaki Yasuda, Kuniharu Takei, Takayuki Arie, and Seiji Akita
Department of Physics and Electronics, Osaka Prefecture University

Tunnel barrier formation in multi-walled carbon nanotubes by Ar atom or Ga focused ion beam irradiation.
Tomohiro Yamaguchi\textsuperscript{1}, Hiroshi Tomizawa\textsuperscript{1,2}, Seiji Akita\textsuperscript{3}, and Koji Ishibashi\textsuperscript{1,2,4}
\textsuperscript{1} Advanced Device Laboratory, RIKEN
\textsuperscript{2} Department of Applied Physics, Tokyo University of Science
\textsuperscript{3} Department of Physics and Electronics, Osaka Prefecture University
\textsuperscript{4} RIKEN Center for Emergent Matter Science (CEMS)

Electron transport on a surface of weak topological insulators with step edges
Takashi Arita and Yositake Takane
Department of Quantum Matter, Graduate School of Advanced Sciences of Matter, Hiroshima University

Doping Effect of Dielectric Encapsulation Layer in WSe\textsubscript{2} Field Effect Transistors
Seung-Pil Ko\textsuperscript{1}, Jiung Cho\textsuperscript{2}, Jong Mok Shin\textsuperscript{1}, Ho Kyun Jang, Min Youl You, Jun-Eon Jin and Gyu-Taee Kim\textsuperscript{1}
\textsuperscript{1} School of Electrical Engineering, Korea University
\textsuperscript{2} Advanced Material Research Center, Korea Basic Science Institute

Analysis of Ultra-High-Speed Image Sensor with Monte Carlo Simulation
Natsumi Minamitani\textsuperscript{1}, Vu Truong Son Dao\textsuperscript{2}, Kazuhiro Shimonomura\textsuperscript{2}, Takeharu Goji Etoh\textsuperscript{2}, Yoshinari Kamakura\textsuperscript{1}, and Nobuya Mori\textsuperscript{1}
\textsuperscript{1} Osaka University
\textsuperscript{2} Ritsumeikan University

Theoretical calculation of impact ionization rate for 4H-SiC in the GW approximation
K. Konaga\textsuperscript{1}, T. Kotani\textsuperscript{2}, R. Fujita\textsuperscript{1}, Y. Kamakura\textsuperscript{1}, N. Mori\textsuperscript{1}
\textsuperscript{1} Division of Electrical, Electronic and Information Engineering, Osaka University
\textsuperscript{2} Department of Applied Mathematics and Physics, Tottori University
Wigner Session

20:00-20:15 Comparison of Slab and Block Decomposition Strategies for the Two-Dimensional Wigner Monte Carlo Method  
Josef Weinbub, Paul Ellinghaus, Mihail Nedjalkov, and Siegfried Selberherr  
Institute for Microelectronics, TU Wien

20:15-20:30 Convergence of stationary Wigner equation with inflow boundary conditions  
Anton Arnold\(^1\), Ruo Li\(^2\), Tiao Lu\(^2\), and Zhangpeng Sun\(^2\)  
\(^1\) Institute for Analysis and Scientific Computing, Vienna Technology University  
\(^2\) CAPT, HEDPS, LMAM, IFSA Collaborative Innovation Center of MoE, School of Mathematical Sciences

20:30-20:45 Uncertainty and quantum correlation in Wigner transport equations  
Kyoung-Youm Kim\(^1\) and Saehwa Kim\(^2\)  
\(^1\) Department of Electrical Engineering, Sejong University  
\(^2\) Department of Information and Communications Engineering, Hankuk University of Foreign Studies

20:45-21:00 Phase-Space Functions and Entanglement: A Role for Wigner Functions  
D. K. Ferry  
School of Electrical, Computer, and Energy Engineering, Arizona State University

21:00-21:15 Wigner representation of electron dynamics in presence of thermal dephasing in disordered systems  
Bartlomiej Spisak\(^1\) and Maciej Woloszyn\(^1\)  
\(^1\) AGH University of Science and Technology, Faculty of Physics and Applied Computer Science
Wednesday December 2

Electronic Device & Nanowire

9:00-9:30  **Emerging Devices for Computing: A Still Unexplored Landscape**  
Thomas N. Theis (invited)  
Semiconductor Research Corporation (on assignment from IBM Research)

9:30-9:45  **Toward atom scale ultra low power electronic circuitry**  
Robert Wolkow  
Department of Physics, University of Alberta and National Institute for Nanotechnology

9:45-10:00  **Nanowire Transistor Performance at the Scaling Limit Comprehensive DD, EMC and NEGF simulation study**  
1. Device Modeling Group, School of Engineering, University of Glasgow  
2. Gold Standard Simulations Ltd.  
3. Institute of Microelectronics, Peking University

10:00-10:15  **Multi-Scale Modeling of Self-Heating Effects in Silicon Nanoscale Devices**  
A. R. Shaik, S. S. Qazi, R. L. Daugherty, A. Laturia, E. Bury, B. Kaczer, K. Raleva, and D. Vasileska  
1. School of Electrical Computer and Energy Engineering, Arizona State University  
2. IMEC  
3. Faculty of Engineering and Information Technology, University Sts. Cyril and Methodius

10:15-10:30  **Coupled Electrical and Thermal Transport in Hybrid Graphene-Silver Nanowire Transparent Conducting Electrodes**  
1. School of Electrical and Computer Engineering, Purdue University  
2. Department of Physics, Purdue University  
3. Birck Nanotechnology Center, Purdue University  
4. Department of Information Science and Electronic Engineering, Zhejiang University  
5. Osaka University

10:30-10:45  **Band gap due to inter-wall interaction in flattened carbon nanotubes**  
Takeshi Nakanishi and Tsuneya Ando  
1. Nanomaterials Research Institute, AIST  
2. Department of Physics, Tokyo Institute of Technology

Coffee

New Approach & Novel Devices

11:15-11:30  **Magnonic Holographic Read-Only Memory**  
F. Gertz, A. Kozhevnikov, Y. Filimonov, and A. Khitun  
1. Electrical Engineering Department, University of California-Riverside  
2. Kotel'nikov Institute of Radioengineering and Electronics of Russian Academy of Sciences
11:30-11:45  **Modeling Reliability and Metastability of CdTe Photovoltaics**
Da Guo¹, Richard Akis¹, Dragica Vasileska¹, Daniel Brinkman², Christian Ringhofer², Andrew Moore³ and Igor Sankin⁴
¹ School of ECEE, Arizona State University
² School of MSS, Arizona State University
³ Department of Physics, Colorado State University
⁴ First Solar Inc.

11:45-12:00  **Wideband spectroscopic probe for near-zone field mapping**
Daniel van der Weide
Department of Electrical & Computer Engineering, University of Wisconsin

12:00-12:15  **Directional and Polarized Emission from a Periodically Nanostructured Phosphor Film**
Yasuhsa Inada, Akira Hashiya, Mitsuru Nitta, Shogo Tomita and Taku Hirasawa
Advanced Research Division, Panasonic Corporation

12:15-12:30  **Antenna-Coupled Single-Metal Nanoscale Thermocouples: Where is the Hot Spot?**
Gergo P. Szakmany, Alexei O. Orlov, Gary H. Bernstein, and Wolfgang Porod
Center for Nano Science and Technology, Department of Electrical Engineering, University of Notre Dame

12:30-12:45  **Topological Energy Transduction**
Timothy Phillip¹ and Matthew J. Gilbert¹
¹ Department of Electrical and Computer Engineering, University of Illinois–Urbana-Champaign

**Ad Hoc**

**Banquet**
18:00-21:00
Thursday December 3

Phonon Control and Spintronics

9:00-9:30  Acoustic control of optical properties and spins in quantum wells
Tetsuomi Sogawa (invited), Haruki Sanada, Yoji Kunihashi, and Hideki Gotoh
NTT Basic Research Laboratories

9:30-9:45  Tuning Phonon Transport at Nanoscale: Direct Evidence of the Acoustic Phonon
Spectrum Modification and its Effect on Heat Conduction
Fariborz Kargar, Sylvester Ramirez, Hoda Malekpour and Alexander A. Balandin
Phonon Optimized Engineered Materials (POEM) Center, Bourns College of Engineering,
University of California-Riverside
Spins and Heat in Nanoscale Electronic Systems (SHINES) Center, University of
California-Riverside

9:45-10:00  Simulating the Ising Hamiltonian with phonons
Imran Mahboob, Hajime Okamoto and Hiroshi Yamaguchi
NTT Basic Research Laboratories

10:00-10:15  Spin-dependent Trap-assisted Tunneling in Ferromagnet-Oxide-Semiconductor
Structures
Viktor Sverdlov and Siegfried Selberherr
Institute for Microelectronics, TU Wien

10:15-10:30  A Novel Method of SOT-MRAM Switching
Alexander Makarov, Thomas Windbacher, Viktor Sverdlov, and Siegfried Selberherr
Institute for Microelectronics, TU Wien

Coffee

Quantum Hall Effect

11:00-11:15  Quantum Hall effect in twisted bilayer graphene
Tomoki Machida¹,², Satoru Masubuchi¹, Naoko Inoue¹, Reina Kashiwagi¹, Sei Morikawa¹,
Kenji Watanabe³, and Takashi Taniguchi³
¹ Institute of Industrial Science, University of Tokyo
² INQIE, University of Tokyo
³ National Institute for Materials Science

11:15-11:30  Quantum transport in hBN/graphene/hBN heterostructures with one-dimensional edge
contacts
Katsuyoshi Komatsu, Eichiro Watanabe, Daiju Tsuya, Kenji Watanabe, Takashi
Taniguchi, and Satoshi Moriyama
National Institute for Materials Science, Tsukuba

11:30-11:45  Negative Compressibility of the Bubble and Stripe Phases in the Quantum Hall Regime
Benedikt Friess¹, Vladimir Umansky², Bernd Rosenow³, Yang Peng⁴, Felix von Oppen⁴,
Klaus von Klitzing¹, and Jurgen Smet¹
¹ Max Planck Institute for Solid State Research
² Weizmann Institute of Technology
³ University of Leipzig
⁴ Freie Universtät Berlin
Superconductivity Induced Topological Phase Transition at the Edge of Even Denominator Fractional Quantum Hall States
Maissam Barkeshli and Chetan Nayak
Station Q, Microsoft Research

Spin-split and spin-unpolarized incompressible strips revealed by optical local spin injection
S. Nomura1, S. Mamyouda1, H. Ito1, Y. Shibata1, Y. Ootuka1, S. Kashiwaya2, M. Yamaguchi3, H. Tamura3, and T. Akazaki3
1 Division of Physics, University of Tsukuba
2 National Institute of Advanced Industrial Science and Technology
3 NTT Basic Research Laboratories

Nuclear Electric Resonance and its Application to Magnetic Resonance Imaging
K. Hashimoto1, T. Tomimatsu1, S. Shirai1, K. Sato1, and Y. Hirayama1,2
1 Graduate School of Science, Tohoku University
2 WPI-AIMR, Tohoku University
* Present address: The University of Electro-Communications

Ad Hoc

Majonara Physics and Topological Systems

Spotting the elusion Majorana under the microscope
Ali Yazdani (invited)
Department of Physics, Princeton University

Probing Spin-Orbit Coupling in Superconducting Junctions: From Spintronics to Majorana Fermions
Igor Žutić1, Petra Hoegl2, Alex Matos-Abiague1,2, and Jaroslaw Fabian1
1 Department of Physics, University at Buffalo
2 Institute for Theoretical Physics, University of Regensburg

Stability and Properties of Disordered Weyl Semimetal Phases
Hassan Shapourian1, and Taylor L. Hughes1
1 Department of Physics and Institute for Condensed Matter Theory, University of Illinois at Urbana-Champaign

Surface States or Electron Fractionalization in Bismuth
Philip Phillips
University of Illinois at Urbana-Champaign

Non-uniform magnetic structures and anisotropic spin wave dispersion in Dirac semimetals
Yasufumi Araki1,2, Kentaro Nomura1
1 Institute for Materials Research, Tohoku University
2 Frontier Research Institute for Interdisciplinary Sciences, Tohoku University
20:30-20:45  Writing superconductivity in bismuth selenide by controlled local doping
J. T. Mlack$^{1,2}$, Atikur Rahman$^{1,3}$, Natalia Drichko$^1$ and Nina Markovic$^{1,4}$
$^1$ Department of Physics and Astronomy, Johns Hopkins University
$^2$ Department of Physics and Astronomy, University of Pennsylvania
$^3$ Brookhaven National Laboratory
$^4$ Department of Physics and Astronomy, Goucher College

20:45-21:00 Transport in Topological Insulators and Topological Superconductors: In Search of
Majorana Fermions
Ewelina M. Hankiewicz
Institute for Theoretical Physics, Wurzburg University
Friday December 4

Optical Devices & Solar Cells

9:00-9:15 Nanoscale optical studies of band potential fluctuations and lateral carrier diffusion in semipolar InGaN/GaN quantum wells
Saulius Marcinkevičius¹, Mounir Mensi², Ruslan Ivanov¹, Daniel L. Becerra², Shuji Nakamura², Steven P. DenBaars², and James S. Speck²
¹ KTH Royal Institute of Technology, Department of Materials and Nanophysics, ² Materials Department, University of California

9:15-9:30 Designing a Binary Random Phase Array to Improve the Light Extraction Efficiency of White Organic Light-Emitting Devices
Akira Hashiya, Yasuhisa Inada, and Taku Hirasawa
Advanced Research Division, Panasonic Corporation

9:30-9:45 Quantum processes of exciton dissociation at organic solar-cell interfaces: Effects of interface disorder, hot exciton, and polaron
Takashi Nakayama, Hideyuki Iizuka, and Yoshimitsu Masugata
Department of Physics, Chiba University

9:45-10:00 Smart stacked heterogeneous multijunction solar cells fabricated by advanced bonding using metal nanoparticle arrays
Takeoishi Sugaya¹, Kikuo Makita¹, Hidenori Mizuno¹, Toru Mochizuki¹,², Ryuji Oshima¹, Jiro Nishinaga¹, Yoshinobu Okano², and Koji Matsubara¹
¹ National Institute of Advanced Industrial Science and Technology (AIST) ² Tokyo City University

10:00-10:15 III-V dilute nitride solar cells with record open circuit voltages enabled by nanoscale engineering
G.K. Vijaya¹, W. Wang¹, A. Mehrotra¹, D. Tang², A. Freundlich¹, D. J. Smith²
¹ Center for Advanced Materials, University of Houston ² Physics Department Arizona State University

10:15-10:30 Simulation of Carrier Dynamics and Conversion Efficiency of III-V Nanowire Photovoltaic Devices
Raghuraj Hathwar¹, Pietro Luppina², Dan Popescu², Paolo Lugli², and Stephen Goodnick¹,²
¹ School of Electrical Computer and Energy Engineering, Arizona State University ² Institute for Advanced Studies and the Institute for Nanoelectronics, the Technical University of Munich

Coffee

Graphene II

11:00-11:15 Optically and electrically pumped graphene bilayer lasers: Dramatic enhancement of terahertz gain by remote doping
Victor Ryzhii¹, Taichi Otsuji¹, Maxim Ryzhii², Vladimir Mitin³, and Michael S. Shur⁴
¹ Research Institute of Electrical Communication, Tohoku University ² Department of Computer Science and Engineering, University of Aizu ³ Department of Electrical Engineering, University at Buffalo ⁴ Department of Electrical, Electronics, and Systems Engineering, Rensselaer Polytechnic Institute
11:15-11:30  **Inducing Strain to Encapsulated Graphene**  
Hikari Tomori\(^1,2\), Rineka Hiraide\(^1\), Youiti Ootuka\(^1\), Kenji Watanabe\(^3\), Hisashi Taniguchi\(^3\), Akinobu Kanda\(^1\)
\(^1\) Division of Physics and TIMS, Faculty of Pure and Applied Sciences, University of Tsukuba
\(^2\) PRESTO-JST
\(^3\) National Institute for Materials Science (NIMS)

11:30-11:45  **Tuning Graphene via Engineered Strain Arrays**  
Nadya Mason
Department of Physics and Materials Research Laboratory, University of Illinois at Urbana-Champaign

11:45-12:00  **Introducing carbon isotopes and isotopic heterojunction into graphene for enhancing graphene-based thermoelectric device performance**  
Yuki Anno, Kuniharu Takei, Seiji Akita, and Takayuki Arie
Department of Physics and Electronics, Osaka Prefecture University

12:00-12:15  **Influence of Metal Contacts on Graphene Transport Properties and Its Reduction with Nano-carbon Interfacial Layer**  
Akinobu Kanda\(^1\), Kenta Katakura\(^1\), Yu. Ito\(^1\), Youiti Ootuka\(^1\), Hikari Tomori\(^2\)
\(^1\) Division of Physics and TIMS, Faculty of Pure and Applied Sciences, University of Tsukuba
\(^2\) PRESTO-JST

12:15-12:30  **Conductance Fluctuations in High-Mobility Bilayer-Graphene/h-BN Heterostructures**  
Masaaki Mineharu\(^1\), Masahiro Matsunaga\(^1\), Yuichi Ochiai\(^1\), Inyeal Lee\(^2\), Gil-Ho Kim\(^2\), Kenji Watanabe\(^3\), Takashi Taniguchi\(^3\), David K. Ferry\(^4\), Jonathan P. Bird\(^1,5\) and Nobuyuki
\(^1\) Graduate School of Advanced Integration Science, Chiba University
\(^2\) School of Electronic Electrical Engineering and Sungkyunkwan Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University
\(^3\) National Institute for Materials Science
\(^4\) School of Electrical, Computer, and Energy Engineering, Arizona State University
\(^5\) Department of Electrical Engineering, University at Buffalo

12:30-12:45  **Electronic Noise Suppression in the Near-Ballistic BN-Graphene-BN Heterostructure Field-Effect Transistors**  
Maxim A. Stolyarov\(^1\), Sergey L. Rumyantsev\(^2,3\), Michael Shur\(^2\) and Alexander A. Balandin\(^1\)
\(^1\) Nano-Device Laboratory, Department of Electrical and Computer Engineering, University of California – Riverside
\(^2\) Department of Electrical, Computer, and Systems Engineering, Center for Integrated Electronics, Rensselaer Polytechnic Institute
\(^3\) Ioffe Physical-Technical Institute

**Closing**