

EDISON21 Program

14th July (Sunday)

18:00- Reception (Get -together) [Ristorante L'orchestrata]

15th July (Monday)

10:00-10:15 Opening

10:15-11:00 **[Plenary] (P43)**

Harry A. Atwater

California Institute of Technology, USA

"Excited States in Plasmonic Materials – From Bright Spontaneous Emission to Selective Photocatalysis"

11:00-11:30 Coffee Break

11:30-12:30 Field Effect Transistors of Novel Low-dimensional Materials

11:30-12:00 **I-01 [Invited] (P45)**

Amalia Patanè¹, D. Mazumder¹, J. Xie², M.A. Bhuiyan¹, Z.R. Kudrynskiy¹, O. Makarovskiy¹, H. Kim³, T.Y. Chang³, D.L. Huffaker^{3,4}, Z.D. Kovalyuk⁵, L. Zhang²,
1. University of Nottingham, UK, 2. Jilin University, China, 3. UCLA, US,
4. Cardiff University, UK, 5. Institute for Problems of Materials Science, NAS of Ukraine, Ukraine

"2D systems and materials beyond graphene: The rise of indium selenide for optoelectronics"

12:00-12:15 **MoO-01 (P55)**

Michael D. Randle¹, A. Lipatov², A. Kumar¹, K. He¹, C-P. Kwan¹, J. Nathawat¹, R. Dixit¹, S. Yin¹, N. Arabchigavkani¹, B. Barut¹, T. Komesu⁴, J. Avila⁴, M. Asensio⁵, P. A. Dowben³, U. Singiseti¹, A. Sinitskii², J. P. Bird¹

1. University at Buffalo, USA, 2. Department of Chemistry, University of Nebraska-Lincoln, USA, 3. Department of Physics and Astronomy, University of Nebraska-Lincoln, USA, 4. Synchrotron SOLEIL & Université Paris-Saclay, L'Orme des Merisiers, France, 5. Madrid Institute of Materials Science, Spanish Scientific Research Council, Spain

"Gate-Controlled Metal-Insulator Transition in TiS₃ Nanowire Field-Effect Transistors"

- 12:00-12:15 **MoO-02 (P56)**
Yuen-Wuu Suen^{1,2}, S. X. Lin¹, K. C. Lee², L. C. Li³, Y. H. Lu², Y. F. Lin², T. S. Lim⁴
 1. Institute of Nanoscience and Nanotechnology, National Chung Hsing University, Taiwan, 2. Department of Physics, National Chung Hsing University, Taiwan, 3. Center for Nano Science and Technology, National Chiao Tung University, Taiwan, 4. Department of Applied Physics, Tunghai University, Taiwan
"Investigation of MoTe₂/SnS₂/h-BN Tunnelling Field Effect Transistors by Scanning Photocurrent Microscopy"
- 12:30-14:00 Lunch
- 14:00-15:30 Quantum Dots
- 14:00-14:30 **I-02 [Invited] (P46)**
Heiner Linke¹, Martin Josefsson¹, Artis Svilans¹, I-Ju Chen¹, Adam M. Burke¹, Eric A. Hoffmann¹, Sofia Fahlvik¹, Jonatan Fast¹, Claes Thelander¹, Martin Leijnse¹
 1. Lund University, Sweden
"Realization of an efficient quantum-dot heat engine"
- 14:30-14:45 **MoO-03 (P57)**
Andrew Sachrajda¹, S. Studenikin¹, M. Takahashi², G. Austing¹, L. Gaudreau¹, M. J. Korkusinski¹, P. Zawadzki¹, L. Tracy³, J. Reno³, T. Hargett³
 1. National Research Council of Canada, Canada, 2. Department of Physics, Tohoku University, Japan, 3. Sandia National Laboratory, USA
"Single hole EDSR with Tuneable g-factor"
- 14:45-15:00 **MoO-04 (P58)**
Matthias Holtkemper¹, Christian Traum², Philipp Henzler², David Nabben², Denis V. Seletskiy^{2,3}, Doris E. Reiter¹, Alfred Leitenstorfer², Tilmann Kuhn¹
 1. University of Münster, Germany, 2. University of Konstanz, Germany, 3. Polytechnique Montréal, Canada
"Control of long-lived intraband coherences between hot trions in single CdSe quantum dots"
- 15:00-15:15 **MoO-05 (P59)**
Lucien Besombes¹, H. Boukari¹, V. Tiwari¹, A. Lafuente-Sampietro^{1,2}, M. Sunaga², K. Makita², S. Kuroda²
 1. Institut Neel, CNRS, France, 2. University of Tsukuba, Japan

"Quantum dots doped with a single Cr atom: spin dynamics and charge fluctuations."

15:15-15:30 [MoO-06 \(P60\)](#)

Martin Geller¹, Annika Kurzmann¹, Pia Lochner¹, Philipp Stegmann¹, Jens Kerski¹, Arne Ludwig², Andreas D. Wieck², Axel Lorke¹, J. König¹

1. University of Duisburg-Essen, Germany, 2. Ruhr University Bochum, Germany

"Optical detection of the non-equilibrium carrier dynamics in self-assembled quantum dots"

15:30-16:00 Coffee Break

16:00-18:00 **Poster session I**

16th July (Tuesday)

09:00-10:15 Heating and Cooling Effect

09:00-09:30 [I-03 \[Invited\] \(P47\)](#)

Ken-ichi Uchida^{1,2,3}

1. National Institute for Materials Science, Japan, 2. Tohoku University, Japan, 3. The University of Tokyo, Japan

"Thermal management principles based on spin caloritronics"

09:30-09:45 [TuO-01 \(P61\)](#)

Masahiro Nomura^{1,2}, Anthony George¹, Ryoto Yanagisawa¹, Naohito Tsujii³, Takao Mori^{2,3}, Sebastian Volz¹, Roman Anufriev¹

1. the University of Tokyo, Japan, 2. CREST, Japan Science and Technology Agency, Japan, 3. National Institute for Material Science, Japan

"Planar-type Si thermoelectric energy harvesters with ultrathin Al films"

09:45-10:00 [TuO-02 \(P62\)](#)

Marc Bescond¹, Aymen Yangui¹, Chiu-Chun Tang², Tifei Yan², Naomi Nagai², Kazuhiko Hirakawa^{1,2}

1. LIMMS CNRS - The University of Tokyo, Japan, 2. Institute of Industrial Science and INQIE, The University of Tokyo, Japan

"Electron cooling in asymmetric double-barrier heterostructure: the evaporative approach"

10:00-10:15 [TuO-03 \(P63\)](#)

Jubin Nathawat¹, M. Zhao^{1,2}, C.-P. Kwan³, S. Yin¹, M. Randle¹, H.

Ramamoorthy¹, N. Matsumoto⁴, M. Matsunaga⁴, N. Aoki⁴, G.-H. Kim², K. Watanabe⁵, T. Taniguchi⁵, J. E. Han³, J. P. Bird¹

1. Department of Electrical Engineering, University at Buffalo, USA, 2. Institute of Microelectronics of Chinese Academy of Sciences, China, 3. Department of Physics, University at Buffalo, USA, 4. Chiba University, Japan, 5. National Institute for Materials Science, Japan

“Transient Response of h-BN-Encapsulated Graphene Transistors: Signatures of Self-Heating and Hot-Carrier Trapping”

10:15-10:45 Coffee Break

10:45-12:00 Spin-Related Optical Phenomena in Semiconductors

10:45-11:00 [TuO-04 \(P64\)](#)

Sergiu Anghel¹, F. Passmann¹, A. D. Bristow^{1,2}, J. N. Moore³, G. Yusa^{3,4}, T. Mano⁵, T. Noda⁵, M. Betz¹

1. Technische Universität Dortmund, Germany, 2. West Virginia University, USA, 3. Department of Physics, Tohoku University, Japan, 4. Center for Spintronics Research Network, Tohoku University, Japan, 5. National Institute for Materials Science, Japan

“Transport of a Persistent Spin Helix Transverse to the Spin Texture in a Modulation-Doped GaAs Quantum Well”

11:00-11:15 [TuO-05 \(P65\)](#)

Ryohei Ito¹, Nozomi Nishizawa¹, Hiro Munekata¹

1. Tokyo Institute of Technology, Japan

“Electroluminescence characteristics and spin dynamics of spin-light-emitting-diodes (spin-LEDs) consisting of oxidized Al/AlAs tunneling barriers”

11:15-11:30 [TuO-06 \(P66\)](#)

Pawel Machnikowski¹, Krzysztof Gawarecki¹, Pawel Karwat¹, Łukasz Cywiński²

1. Wrocław University of Science and Technology, Poland, 2. Institute of Physics, Polish Academy of Sciences, Poland

“Hyperfine interactions in self-assembled quantum dots: multi-band model”

11:30-11:45 [TuO-07 \(P67\)](#)

Erik Kirstein¹, Eiko Evers¹, Vasilii V. Belykh², Evgeny A. Zhukov¹, Dennis Kudlacik¹, Ina V. Kalitukha³, Olga Nazarenko⁴, Maksym V. Kovalenko^{4,5}, Dmitri R. Yakovlev^{1,3}, Manfred Bayer^{1,3}

1. Experimentelle Physik 2, Technische Universität Dortmund, Germany, 2. P.N. Lebedev Physical Institute, Russian Academy of Sciences, Russia, 3. Ioffe Institute, Russian Academy of Sciences, Russia, 4. Laboratory of Inorganic Chemistry, ETH Zürich, Switzerland, 5. Empa-Swiss Federal Laboratories for Materials Science and Technology, Switzerland

"Time resolved spin dynamics in lead halide hybrid organic perovskite $Fa_{0.9}Cs_{0.1}Pb_{1.8}Br_{0.2}$ "

11:45-12:00 [TuO-08 \(P68\)](#)

Genki Fukuda¹, Takafumi Fujita¹, Yasushi Kanai¹, Kazuhiko Matsumoto¹, Julian Ritzmann², Alfred Ludwig², Andreas D. Wieck², Akira Oiwa¹

1. Institute of Scientific and Industrial Research, Osaka University, Japan, 2. Lehrstuhl für Angewandte Festkörperphysik, Ruhr-Univ., Germany

"Fabrication and Irradiation Effects of Two-Dimensional Electron Gas on Etched Undoped GaAs/AlGaAs Heterostructures Utilizing Modulation-Doped Ohmic Contacts"

12:00-12:30 Conference photo

12:30-14:00 Lunch

14:00-15:30 Novel Quantum Transports in Low Dimensions

14:00-14:30 [I-04 \[Invited\] \(P48\)](#)

Laurence Eaves^{1,2}, P. Kumaravadeivel^{2,3}, M. T. Greenaway^{1,4}, D. Perello^{2,3}, A. Berdyugin², J. Birkbeck^{2,3}, J. Wengraf^{2,5}, S. Liu⁶, J. H. Edgar⁶, A. K. Geim^{2,3}, R. Krishna Kumar²

1. University of Nottingham, UK, 2. School of Physics & Astronomy, University of Manchester, UK, 3. National Graphene Institute, University of Manchester, UK, 4. Loughborough University, UK, 5. University of Lancaster, UK, 6. Kansas State University, Manhattan, USA

"Strong magnetophonon oscillations in monolayer graphene: a spectroscopic probe of electron-phonon interactions."

14:30-14:45 [TuO-09 \(P69\)](#)

Vito Clericò¹, Juan Antonio Delgado-Notario¹, Marta Saiz Bretín², Andrey Malyshev^{2,3}, Yahya Meziani¹, Pedro Hidalgo², Bianchi Méndez², Mario Amado¹, Francisco Domínguez-Adame², Enrique Diez¹

1. USAL-NANOLAB, Universidad de Salamanca, Spain, 2. Departamento de Física de Materiales, Universidad Complutense, Spain, 3. Ioffe Physical-

Technical Institute, Russia

"Quantum nanoconstrictions fabricated by cryo-etching in encapsulated graphene"

14:45-15:00 **TuO-10 (P70)**

Ning Kang¹, D. X. Fan¹, J. H. Zhi¹, D. Pan², J. H. Zhao², H. Q. Xu¹

1. Peking University, China, 2. Chinese Academy of Sciences, China

"Two-dimensional Quantum Transport in Free-Standing Single-Crystalline InSb Nanosheets"

15:00-15:15 **TuO-11 (P71)**

Adam P. Micolich¹, J. Seidl¹, J. Glusckke¹, X. Yuan², S. Naureen², S. Shahid², H.H. Tan², C. Jagadish², P. Caroff^{2,3}

1. School of Physics, University of New South Wales, Australia, 2. The Australian National University, Australia, 3. Delft University of Technology, The Netherlands

"Regaining a Lost Dimension - From InAs Nanowires to InAs Nanofin Hall Bars by Templated Epitaxy"

15:15-15:30 **TuO-12 (P72)**

Nobuyuki Aoki^{1,2}, Hidemitsu Ouchi¹, Kohei Sakanashi¹, Kota Kamiya¹, Peter Krüger^{1,2}, Katsuhiko Miyamoto^{1,2}, Takashige Omatsu^{1,2}, Jonathan P. Bird^{1,3}

1. Department of Materials Science, Chiba University, Japan, 2. Molecular Chirality Research Center, Chiba University, Japan, 3. University at Buffalo, SUNY, USA

"Laser Doping Effect and TFET Device Application of MoTe₂ Crystal"

15:30-16:00 Coffee Break

16:00-18:00 **Poster Session II**

17th July (Wednesday)

09:00-10:15 **2D Materials and Excitons**

09:00-09:30 **I-05 [Invited] (P49)**

Yuya Shimazaki¹, Ido Schwartz¹, Kenji Watanabe², Takashi Taniguchi², Martin Kroner¹, Atac Imamoglu¹

1. ETH Zürich, Switzerland, 2. National Institute for Materials Science, Japan
"Electrical control of coherent coupling between intralayer and interlayer"

excitons in transition metal dichalcogenides"

09:30-09:45

[WeO-01 \(P73\)](#)

Futo Hashimoto¹, Nobuya Mori¹

1. Osaka University, Japan

"Stacking Order Dependence of Inter-Layer Tunneling in van der Waals TMDC Heterostructures"

09:45-10:00

[WeO-02 \(P74\)](#)

Guillermo F. Quinteiro¹, Pablo I. Tamborenea², Matthias Holtkemper³, Doris E. Reiter³, Tilmann Kuhn³

1. Universidad Nacional del Nordeste, Argentina, 2. Universidad de Buenos Aires, Argentina, 3. Universität Münster, Germany

"Flexible manipulation of quantum dot excitons by strongly non-paraxial optical vortices"

10:00-10:15

[WeO-03 \(P75\)](#)

Frank Lengers¹, Roberto Rosati², Tilmann Kuhn¹, Doris E. Reiter¹

1. University of Münster, Germany, 2. Chalmers University of Technology, Sweden

"Spatiotemporal Dynamics of Coulomb-correlated Carriers in Quantum Wires"

10:15-10:45

Coffee Break

10:45-11:45

Transport and Device Simulations

10:45-11:00

[WeO-04 \(P76\)](#)

Gennday Mil'nikov¹, Jun-ichi Iwata², Nobuya Mori¹, Atsushi Oshiyama³

1. Osaka University, Japan, 2. AdvanceSoft Corporation, Japan, 3. Nagoya University, Japan

"The first-principle models of quantum transport and atomistic device simulations of realistic semiconductor devices."

11:00-11:15

[WeO-05 \(P77\)](#)

Rossella Brunetti¹, Carlo Jacoboni¹, Enrico Piccinini², Massimo Rudan²

1. Università degli Studi di Modena e Reggio Emilia, Italy, 2. University of Bologna, Italy

"Localised and Extended States in Electron Conduction of Ovonic Materials"

11:15-11:30

[WeO-06 \(P78\)](#)

Tomás González², Javier Mateos², Enrique Colomé¹, Xavier Oriols¹

1. Universitat Autònoma de Barcelona, Spain, 2. Universidad de Salamanca,

Spain

"Noise versus transit-time limits for the THz operation of ultra-small electronic devices"

11:30-11:45 [WeO-07 \(P79\)](#)

Orazio Muscato

University of Catania, Italy

"Direct simulation Monte Carlo of the Wigner transport equation"

12:00- Excursion

18th July (Thursday)

09:00-10:15 THz Dynamics

09:00-09:30 [I-06 \[Invited\] \(P50\)](#)

Kazuhiko Hirakawa^{1,2}, S.Q. Du¹

1. Institute of Industrial Science, University of Tokyo, Japan, 2. Institute for Nano Quantum Information Electronics, University of Tokyo, Japan

"Terahertz Dynamics of Single Molecules and Single Atoms Studied by Using Nanogap Electrodes"

09:30-09:45 [ThO-01 \(P80\)](#)

Hirokazu Murano¹, Kenji Ikushima¹, Kazuhiro Takizawa¹, Maki Otsuji¹, Gen Ueda¹, Sunmi Kim², Mikhail Patrashin², Iwao Hosako², Susumu Komiyama²

1. Tokyo University of Agriculture and Technology, Japan, 2. National Institute of Information and Communications Technology (NICT), Japan

"Nonequilibrium electron dynamics and Landau-level radiative transition in current-injected graphene"

09:45-10:00 [ThO-02 \(P81\)](#)

Gian Lorenzo Paravicini-Bagliani¹, Felice Appugliese¹, Johan Andberger¹, Nicola Bartolo², Thomas Ihn¹, Klaus Ensslin³, Cristiano Ciuti², Giacomo Scalari¹, Jerome Faist¹

1. Institute for Quantum Electronics, ETH Zurich, Switzerland, 2. Université Paris Diderot, France, 3. Laboratory for Solid State Physics, ETH Zurich, Zurich, Switzerland

"Magneto-transport in 2DEG Ultrastrongly Coupled to a Cavities Vacuum-Field"

10:00-10:15 **ThO-03 (P82)**

Luca Varani⁴, I. Nardecchia^{1,2,3}, J. Torres⁴, M. Lechelon^{1,2,3}, V. Giberti⁵, M. Ortolani⁵, P. Nouvel⁴, M. Gori¹, I. Donato^{1,2}, J. Preto⁶, Y. Meriguet⁴, A. Kudashova⁴, M. Sidore⁴, J. Sturgis^{1,7}, M. Pettini^{1,2}

1. Aix-Marseille University, France, 2. CNRS Centre de Physique Theorique, France, 3. Centre d'Immunologie de Marseille-Luminy, France, 4. IES, University of Montpellier - CNRS, France, 5. Department of Physics, University of Rome "La Sapienza", Italy, 6. Department of Physics and Department of Oncology, Cross Cancer Institute, Canada, 7. Laboratoire d'Ingenierie des Systemes Macromoleculaires, France

"Non-equilibrium collective oscillations in biomolecules: towards Bose-Einstein condensation in organic matter?"

10:15-10:45 Coffee Break

10:45-12:00 THz Generation and Detection

10:45-11:00 **ThO-04 (P83)**

Bilal Barut¹, Gregory R. Aizin², Erik Einarsson^{3,4}, Josep M. Jornet³, Takeyoshi Sugaya⁵, **Jonathan P. Bird**³

1. Department of Physics, University at Buffalo, USA, 2. Kingsborough Community College, USA, 3. Department of Electrical Engineering, University at Buffalo, USA, 4. Department of Materials Design and Innovation, University at Buffalo, USA, 5. National Institute of Advanced Industrial Science and Technology (AIST), Japan

"Realizing Asymmetric Boundary Conditions for Plasmonic THz Wave Generation in HEMTs"

11:00-11:15 **ThO-05 (P84)**

Filchito Renee G. Bagsican¹, Iwao Kawayama¹, Michael Wais^{2,3}, Natsumi Komatsu⁴, Kazunori Serita¹, Weilu Gao⁴, Lincoln Weber⁵, Marco Battiato³, Hironaru Murakami¹, Frank A. Hegmann⁶, Junichiro Kono^{1,4}, Masayoshi Tonouchi¹

1. Institute of Laser Engineering, Osaka University, Japan, 2. Institute of Solid State Physics, Vienna University of Technology, Austria, 3. Nanyang Technological University, Singapore, 4. Rice University, USA, 5. Southern Illinois University, USA, 6. University of Alberta, Canada

"Terahertz Emission from a Photoconductive Antenna Switch Based on

Aligned Single-Chirality Semiconducting Carbon Nanotubes"

11:15-11:30

ThO-06 (P85)

Grigory V. Budkin¹, S. Hubmann², S. Gebert², V.V. Bel'kov¹, E. L. Ivchenko¹, A. P. Dmitriev¹, S. Baumann², M. Otteneder², J. Ziegler², D. Disterheft², D. A. Kozlov³, N. N. Mikhailov³, S. A. Dvoretzky³, Z. D. Kvon³, D. Weiss², S. D. Ganichev²

1. Ioffe Institute, Russia, 2. University of Regensburg, Germany, 3. Rzhanov Institute of Semiconductor Physics, Russia

"Nonlinear shift photocurrents induced by terahertz radiation in HgTe quantum wells"

11:30-11:45

ThO-07 (P86)

Martin Franckie¹, Lorenzo Bosco¹, Mattias Beck¹, Jerome Faist¹

1. ETH Zürich, Switzerland

"New Frontiers for THz Quantum Cascade Lasers: NEGF optimisation and fabrication of devices operating above 205 K"

11:45-12:00

ThO-08 (P87)

Erich Gornik¹, J. Hillbrand¹, A. M. Andrews², R. Weh³, S. Höfling⁴, G. Strasser¹, B. Schwarz¹

1. Institute of Solid State Electronics, TU Wien, Austria, 2. Center for Micro- and Nanostructures, TU Wien, Austria, 3. Nanoplus Nanosystems and Technologies GmbH, Germany, 4. Technische Physik, Physikalisches Institut, University Wuerzburg, Germany

"Monolithic Frequency Comb Generation and High-speed Detection based on Interband Cascade Structures"

12:00-12:30

Special Talk

Carlo Jacoboni (Università degli Studi di Modena e Reggio Emilia, Italy)

12:30-14:00

Lunch

14:00-15:30 Quantum Transport in 2D Systems

14:00-14:30

I-07 [Invited] (P51)

Annika Kurzmam¹, M. Eich¹, H. Overweg¹, P. Rickhaus¹, R. Pisoni¹, Y. Lee¹, R. Garreis¹, C. Tong¹, A. Pally¹, M. Mangold¹, K. Watanabe², T. Taniguchi², T. Ihn¹, K. Ensslin¹

1. ETH Zurich, Switzerland, 2. National Institute for Material Science, Japan
"Electrostatically-Defined Quantum Dots in Bilayer Graphene"

- 14:30-14:45 **ThO-09 (P88)**
Tsuneya Ando
Tokyo Institute of Technology, Japan
"Linear Response Formula of Weak-Field Magnetoresistance: Application to Graphene and Related Materials"
- 14:45-15:00 **ThO-10 (P89)**
Mark T. Greenaway¹, E.E. Vdovin^{2,5,6}, O. Makarovskiy², A. Patané², J. Page¹, J.L. Dunn², T.M. Fromhold², D. Ghazaryan³, A. Misra³, A. Mishchenko³, Y. Cao⁴, Z. Wang³, M. Holwill⁴, S. V. Morozov^{5,6}, K. Watanabe⁷, T. Taniguchi⁷, A.K. Geim^{3,4}, K.S. Novoselov^{3,4}, L. Eaves²
1. Department of Physics, Loughborough University, UK, 2. University of Nottingham, UK, 3. School of Physics and Astronomy, University of Manchester, UK, 4. National Graphene Institute, University of Manchester, UK, 5. IMT and HPM, RAS, Russia, 6. "MISIS", Russia, 7. National Institute for Materials Science, Japan
"Tunnel spectroscopy of localized states in graphene-hBN diodes; evidence for the Stark effect"
- 15:00-15:15 **ThO-11 (P90)**
Xiang Yin¹, Seiya Kasai¹
1. Research Center of Integrated Quantum Electronics, Hokkaido University, Japan
"Atomic Scale Gap in Ni-Graphene Interface and Its Effect on Contact Resistance"
- 15:15-15:30 **ThO-12 (P91)**
Paolo Bordone^{1,2}, L. Bellentani¹, X. Oriols³, A. Bertoni²
1. Università degli Studi di Modena e Reggio Emilia, Italy, 2. S3, Istituto Nanoscienze-CNR, Italy, 3. Universitat Autònoma de Barcelona, Spain
"Dynamics and Spatial Entanglement of Two Interacting Electrons in the Quantum Hall Hong-Ou-Mandel Interferometer: an Exact Numerical Solution in a Full-Scale Geometry"
- 15:30-16:00 Coffee Break
- 16:00-17:15 Change and Valley Dynamics
- 16:00-16:15 **ThO-13 (P92)**
Anatolie Mitioglu^{1,2}, Mariana Ballottin¹, Sergiu Anghel², Leonid Kulyuk²,

Peter Christianen¹

1. High Field Magnet Laboratory (HFML - EMFL), Radboud University, The Netherlands, 2. Institute of Applied Physics, Republic of Moldova

"Magneto-optical investigation of valley coherence in monolayer dichalcogenides"

16:15-16:30 [ThO-14 \(P93\)](#)

Guanghui Cheng¹, Baikui Li^{1,2}, Chunyu Zhao^{1,3}, Zijing Jin¹, Hui Li¹, Kei May Lau³, Jiannong Wang¹

1. Department of Physics, the Hong Kong University of Science and Technology, China, 2. College of Optoelectronic Engineering, Shenzhen University, China, 3. Department of Electronic and Computer Engineering, the Hong Kong University of Science and Technology, China

"Exciton Aggregation Induced Photoluminescence Enhancement of Monolayer WS₂"

16:30-16:45 [ThO-15 \(P94\)](#)

Tilmann Kuhn¹, Roberto Rosati², Frank Lengers¹, Doris E. Reiter¹

1. University of Münster, Germany, 2. Chalmers University of Technology, Sweden

"Control of carrier capture processes into localized states in 2D materials"

16:45-17:00 [ThO-16 \(P95\)](#)

Doris E. Reiter^{1,3}, Stefano Guazzotti¹, Andreas Pusch^{1,2}, Ortwin Hess¹

1. Imperial College London, UK, 2. UNSW Sydney, Australia, 3. University of Münster, Germany

"Dynamical theory of controlling optical nonlinearities of monolayers of transition metal dichalcogenides"

17:00-17:15 [ThO-17 \(P96\)](#)

Jonathan P. Bird¹, R. Dixit¹, B. Barut², J. Nathawat¹, S. Yin¹, T. D. Mishima³, M. B. Santos³, I. Welland⁴, D. K. Ferry⁴, I. R. Sellers³

1. Department of Electrical Engineering, University at Buffalo, USA, 2. Department of Physics, University at Buffalo, USA, 3. Department of Physics & Astronomy, University of Oklahoma, USA, 4. School of Electrical, Computer and Energy Engineering, Arizona State University, USA

"Studies of Hot-Carrier Dynamics & Inter-Valley Transfer in InAlAs: Implications for Hot-Carrier Solar Cells"

18:00- Banquet [Nara Hotel]

09:00-10:15 Topological Phenomena

09:00-09:30 **I-08 [Invited] (P52)**

Yuichi Kasahara

Kyoto University, Japan

"Half-integer thermal quantum Hall effect in a Kitaev spin liquid: A signature of Majorana fermions and non-Abelian anyons"

09:30-09:45 **FrO-01 (P97)**

Hui Li¹, Huan-Wen Wang¹, Yang Li¹, Huachen Zhang¹, Shuai Zhang^{2,3}, Xing-Chen Pan^{2,3}, Bin Jia^{2,3}, Fengqi Song^{2,3}, Jiannong Wang^{1,4}

1. the Hong Kong University of Science and Technology, China, 2. National Laboratory of Solid State Microstructures, School of Physics, Nanjing University, China, 3. Collaborative Innovation Center of Advanced Microstructures, Nanjing University, China, 4. William Mong Institute of Nano Science and Technology, the Hong Kong University of Science and Technology, China

"Quantitative analysis of weak antilocalization effect of topological surface states in topological insulator BiSbTeSe₂"

09:45-10:00 **FrO-02 (P98)**

Lars Tiemann¹, Jonas Sichau¹, Marta Prada¹, Robert H. Blick²

1. University of Hamburg, Germany, 2. University of Wisconsin-Madison, USA

"Signatures of chiral electrons in monolayer graphene"

10:00-10:15 **FrO-03 (P99)**

Mustafa Eginligil

Nanjing Tech University, China

"Light Polarization Dependent Photocurrent in Monolayer Molybdenum Disulphide: Geometry and Magnetic Doping Dependence"

10:15-10:45 Coffee Break

10:45-12:00 Detection of Nonequilibrium Carrier Transport

10:45-11:00 **FrO-04 (P100)**

David G. Austing^{1,2}, Victor Yu^{1,2}, Michael Hilke¹, Philip Poole², Sergei

Studenikin²

1. McGill University, Canada, 2. National Research Council of Canada, Canada

"New Differential Quantum Hall Plateau Driven by Spin-flip Transition Deep in the Breakdown Regime"

11:00-11:15 **FrO-05 (P101)**

Erwann Bocquillon¹, W. Yang¹, H. Graef^{1,2,6}, X. Lu³, G. Zhang³, T. Taniguchi⁴, K. Watanabe⁴, A. Bachtold⁵, E.H.T. Teo⁶, E. Baudin¹, G. Fève¹, J-M. Berroir¹, D. Carpentier⁷, M.O. Goerbig⁸, B. Plaçais¹

1. Laboratoire de Physique de l'ENS, Ecole Normale Supérieure, France, 2. CINTRA, CNRS/NTU/Thales, Singapore, 3. Beijing National Laboratory for Condensed Matter Physics and Institute of Physics, China, 4. Advanced Materials Laboratory, National Institute for Materials Science, Japan, 5. ICFO, Barcelona, Spain, 6. Nanyang Technological University, School of Electrical and Electronic Engineering, Singapore, 7. University of Lyon, ENS de Lyon, CNRS, France, 8. Laboratoire de Physique des Solides, CNRS, Université Paris-Saclay, France

"Collective Quantum Hall Breakdown in Bilayer Graphene"

11:15-11:30 **FrO-06 (P102)**

Toshimasa Fujisawa¹, Tomoaki Ota¹, Shunya Akiyama¹, Taichi Hirasawa¹, Masayuki Hashisaka^{1,2}, Koji Muraki²

1. Tokyo Institute of Technology, Japan, 2. NTT Basic Research Laboratories, Japan

"Spectroscopic study on hot-electron transport in a quantum Hall edge channel"

11:30-12:00 **I-09 [Invited] (P53)**

Susumu Komiyama^{1,2}

1. The University of Tokyo, Japan, 2. NICT, Japan

"Imaging of Hot Electrons via Shot Noise -Scanning Noise Microscope (SNoiM)-"

12:00 Closing

Poster Presentation

15th July (Monday) 16:00-18:00

Poster Presentation I

MoP-01

Withdraw

MoP-02 (P103)

Elena Pascual¹, J. M. Iglesias¹, E. M. Hamham¹, **M. J. Martín**¹, R. Rengel¹

1. University of Salamanca, Spain

"Microscopic analysis of electronic transport in MoS₂"

MoP-03 (P104)

Riki Toshio¹, Kazuaki Takasan¹, Norio Kawakami¹

1. Kyoto University, Japan

"The Effects of Berry Curvature on Electron Hydrodynamics in Noncentrosymmetric Metals"

MoP-04 (P105)

Seyed Ali Mojtahedzadeh¹, Nobuya Mori¹

1. Osaka University, Japan

"Monte Carlo Simulation of Electron Transport in Multilayer Graphene"

MoP-05 (P106)

Kai Chang¹, Y. W. Huang¹, Wen Yang²

1. Institute of Semiconductors, Chinese Academy of Sciences, China,

2. Beijing Computational Science Research Center, China

"Electron Cascade Dynamics in Topological Insulator Nanostructures"

MoP-06 (P107)

Michael P. Nielsen¹, James A. R. Dimmock^{2,3}, Matthias Kauer³, Jiang Wu⁴, Huiyun Liu⁴, Paul N. Stavrinou⁵, Nicholas J. Ekins-Daukes¹

1. School of Photovoltaic and Renewable Energy Engineering, University

of New South Wales, Australia, 2. Quantum Motion Technologies, Leeds Innovation Centre, UK, 3. Sharp Laboratories of Europe Ltd, UK, 4.

Department of Electronic and Electrical Engineering, University College London, UK, 5. Department of Engineering Science, University of Oxford, UK

"Demonstrating the Hot Carrier Solar Cell Through Broadband Absorption and Resonant Carrier Extraction"

MoP-07 (P108)

Jonatan D. Fast¹, Artis Svilans¹, I-Ju Chen¹, Steven Limpert¹, Wondwosen Metaferia¹, Adam Burke¹, Heiner Linke¹

1. Solid State Physics and NanoLund, Lund University, Sweden

"InAs Nanowire Devices for Thermionic and Hot-Carrier Energy Conversion"

MoP-08 (P109)

Stephen Bremner¹, Nicholas Ekins-Daukes¹, Gavin Conibeer¹

UNSW Sydney, Australia

"Designing a Hot Carrier Solar Cell"

MoP-09 (P110)

Zhuo Yang¹, Z. Kudrynskyi², T. Shitaokoshi¹, M. Gen¹, S. Takeyama¹, Z. D. Kovalyuk³, L. Eaves², Y. Kohama¹, Amalia Patané²

1. Institute for Solid State Physics, The University of Tokyo, Japan, 2. University of Nottingham, UK, 3. The National Academy of Sciences of Ukraine, Chernivtsi Branch, Ukraine

"Unrevealing the reduced mass of the exciton in $\text{SnSe}_{2(1-x)}\text{S}_{2x}$ via magneto-absorption at ultra-high magnetic field up to 151T"

MoP-10 (P111)

Roman Anufriev¹, Sergei Gluchko^{1,2}, Sebastian Volz^{1,2}, Masahiro Nomura^{1,3}

1. Institute of Industrial Science, The University of Tokyo, Japan, 2. LIMMS/CNRS-IIS, The University of Tokyo, Japan, 3. CREST, Japan Science and Technology Agency, Japan

"Ballistic thermal transport in silicon nanowires of different shapes, lengths, and temperatures"

MoP-11 (P112)

Kaito Nakagawa¹, Kazuo Satoh², Shuichi Murakami², Kuniharu Takei¹, Seiji Akita¹, Takayuki Arie¹

1. Osaka Prefecture University, Japan, 2. Osaka Research Institute of Industrial Science and Technology, Japan

"Controlling the Thermal Transport of Mechanically Exfoliated Graphene by Strain"

MoP-12 (P113)

Maria J. Martin¹, Jose M. Iglesias¹, Elena Pascual¹, E. M. Hamham¹, Raul Rengel¹

1. University of Salamanca, Spain

"Collinear Scattering in the Relaxation Dynamics of Photoexcited Graphene"

MoP-13 (P114)

Javier Mateos¹, Ignacio Íñiguez-de-la-Torre¹, Tomas González¹, Qianchun Weng², Zhenghua An³, Susumu Komiyama⁴

1. University of Salamanca, Spain, 2. Institute of Industrial Science, The University of Tokyo, Japan, 3. Fudan University, China, 4. Department of Basic Science, The University of Tokyo, Japan

"Understanding the scanning noise microscope (SNoiM) measurements through Monte Carlo simulations"

MoP-14

Withdraw

MoP-15 (P115)

Junwei Luo^{1,2,3}, Wen-Hao Liu^{1,2}, Shu-Shen Li^{1,2,3}, Lin-Wang Wang⁴

1. Institute of Semiconductors, Chinese Academy of Sciences, China, 2. University of Chinese Academy of Sciences, China, 3. Beijing Academy of Quantum Information Sciences, China, 4. Lawrence Berkeley National Laboratory, USA

"Impurity migration induced nonadiabatic electron excitation via Landau-Zener transition in semiconductors"

MoP-16 (P116)

Yi-Shan Lee¹, Rui-Xiang Xu¹, Ping-Li Wu¹

1. National Central University, Taiwan

"Temperature Study of Gain Mechanisms in Single Photon Avalanche Diodes"

MoP-17 (P117)

Katarzyna E. Roszak¹, Damian Kwiatkowski², Łukasz Cywiński²

1. Wrocław University of Science and Technology, Poland, 2. Polish Academy of Sciences, Poland

"How to detect qubit-environment entanglement in pure dephasing evolutions"

MoP-18 (P118)

Samuel E. Ver Hoeye¹, Andreea I. Hadarig¹, Carlos Vázquez¹, Miguel Fernández¹, L. Alonso¹, Fernando Las Heras¹

1. Oviedo University, Spain

"Terahertz Signal Generation in Multi-Layer Graphene"

MoP-19 (P119)

Shigehiko Sasa¹, Ryota Ohashi¹, Daichi Shimada¹, Masatoshi Koyama¹, Toshihiko Maemoto¹, Iwao Kawayama², Masayoshi Tonouchi²

1. Nanomaterials Microdevices Research Center, Osaka Institute of Technology, Japan, 2. Institute of Laser Energy, Osaka University, Japan
"Terahertz Radiation Characteristics of GaSb/InAs Heterostructures Excited by 1.55 μm "

MoP-20 (P120)

Takayuki Hasegawa¹, Yuta Okushima¹, Yoshihito Tanaka¹

1. University of Hyogo, Japan

"Coexistence dynamics of terahertz wave emissions in a GaAs nanostructured film"

MoP-21 (P121)

Abdul Mannan¹, Iwao Kawayama¹, F.R. Bagsican¹, Hironaru Murakami¹, Torsten Langer³, Heiko Bremers³, Uwe Rossow³, Dmitry Turchinovich², Andreas Hangleiter³, Masayoshi Tonouchi¹

1. Institute of Laser Engineering, Osaka University, Japan, 2. Department of Physics, Bielefeld University, Germany, 3. Technische Universität Braunschweig, Germany

"Terahertz radiation from InGaN/GaN Multiple Quantum Wells"

MoP-22 (P122)

Luca Varani¹, S. Blin¹, A. Abbes¹, B. Chomet¹, M. Myara¹, G. Beaudoin², I. Sagnes², A. Garnache¹

1. IES, Univ Montpellier, UMR CNRS 5214, France, 2. Centre de Nanosciences et de Nanotechnologies, CNRS, Univ. Paris-Sud, University Paris-Saclay, C2N - Marcoussis, France

"Towards THz power enhancement using spatial multiplexing photo-mixers driven by a dual-frequency VeCSEL"

MoP-23 (P123)

Vladimir Mantsevich¹, Igor V. Rozhansky^{2,3}, Natalia S. Maslova¹, Petr I. Arseyev⁴, Nikita S. Averkiev^{2,3}, Erkki Lahderanta³

1. Lomonosov Moscow State University, Russia, 2. Ioffe Physical Institute, Russia, 3. Lappeenranta Technical University, Finland, 4. P.N. Lebedev Physical Institute, Russia

"Dynamic spin injection in a hybrid structure quantum well - spin split impurity state"

MoP-24 (P124)

Kyouhei Miyajima¹, Takuma Tsuchiya²

1. Graduate School of Engineering, Hokkaido University, Japan, 2. Faculty

of Engineering, Hokkaido University, Japan

"Electron mobility in high-density acceptor-doped quantum wells for Rashba field enhancement"

MoP-25 (P125)

Yuta Matsumoto^{1,2}, Takafumi Fujita¹, H. C. Ebler³, Alfred Ludwig³, Andreas D. Wieck³, Akira Oiwa^{1,2}

1. Institute of Scientific and Industrial Research, Osaka University, Japan, 2. Graduate School of Physics, Osaka University, Japan, 3. Ruhr-Universität Bochum, Germany

"Fast DC Scanning Method for Tuning Quantum Dots"

MoP-26 (P126)

Juhn-Jong Lin¹, Cheng-Ya Yu¹, Sheng-Shiuan Yeh^{1,2}

1. Institute of Physics, National Chiao Tung University, Taiwan, 2. Center for Emergent Functional Matter Science, National Chiao Tung University, Taiwan

"Probing Nanocrystalline Grain Dynamics in Nanodevices"

MoP-27 (P127)

Giorgos Giavaras¹, Yasuhiro Tokura¹

1. University of Tsukuba, Japan

"Control of Spin Resonance in Double Quantum Dots by Tuning the Tunnel Barrier"

MoP-28 (P128)

Mitsuki Yukimune¹, Ryo Fujiwara¹, Fumitaro Ishikawa¹, Shula Chen², Mattias Jansson², Weimin M. Chen², Irina A. Buyanova²

1. Ehime University, Japan, 2. Linköping University, Sweden

"Dilute Nitride GaNAs Nanowires for Optoelectronics"

MoP-29 (P129)

Takafumi Fujita¹, Ryota Hayashi¹, Makoto Kohda², Julian Ritzmann³, Arne Ludwig³, Junsaku Nitta², Andreas D Wieck³, Akira Oiwa¹

1. Osaka University, Japan, 2. Tohoku University, Japan, 3. Ruhr-Universität Bochum, Germany

"Irradiation Effects on Induced Electron Conductivity in an Un-doped GaAs/AlGaAs Quantum Well Hall Bar"

MoP-30 (P130)

Yibo Han¹, Kun Zhang¹, Yaqi Zhang¹

1. Huazhong University of Science and Technology, China

“Low temperature Exciton-Mn Energy Transfer in Mn-doped CsPbCl₃ Nanocrystals”

MoP-31 (P131)

Qian Xin¹, Lulu Du¹, Aimin Song²

1. Shandong University, China, 2. University of Manchester, UK

“High Performance Ga₂O₃ Diodes Based on SnOx Schottky Contact”

MoP-32 (P132)

Guangping Zheng

Hong Kong Polytechnic University, China

“Investigations on the piezoelectric and ferroelectric properties of two-dimensional materials”

MoP-33 (P133)

Heesuk Rho¹, Hanul Kim¹, Daehee Kim², Myung-Ho Bae²

1. Chonbuk National University, Korea, 2. Korea Research Institute of Standards and Science, Korea

“In Situ Imaging of Temperature Profiles of Operating Graphene Field-Effect Transistor”

MoP-34 (P134)

Lyudmila Turyanska², Nathan Cottam¹, C. Zhang^{1,3}, D. M. Rogers⁴, R. Wheatley⁴, O. Makarovskiy¹, L. Eaves¹, **A. Patané**¹, N. Mori⁵

1. School of Physics and Astronomy, University of Nottingham, UK, 2. University of Lincoln, UK, 3. East China University of Science and Technology, China, 4. School of Chemistry, University of Nottingham, UK, 5. Osaka University, Japan

“Surface functionalization of graphene by colloidal nanocrystals: from atomistic modelling to ultrasensitive photon detectors”

MoP-35 (P135)

Takaya Mishima¹, Hajime Tanaka¹, Futo Hashimoto¹, Nobuya Mori¹

1. Osaka University, Japan

“NEGF Simulation of Inter-layer Tunneling Between Semiconductor Nanoribbons”

MoP-36 (P136)

Jinggao Sui¹, Jack Alexander-Webber², Ye Fan², Stephan Hofmann², Malcolm Connolly¹, Charles Smith¹

1. Department of Physics, University of Cambridge, UK, 2. Department of Engineering, University of Cambridge, UK

"Hot Carrier Relaxation of Dirac fermions in Encapsulated CVD Graphene"

MoP-37 (P137)

Ratchanok Somphonsane^{2,4}, **Harihara Ramamoorthy**¹, Kanokwan Buapan², Kamonrat Chiawchan², Chaval Sriwong⁴, Chesta Ruttanapun^{2,4}

1. Department of Electronic Engineering, King Mongkut's Institute of Technology Ladkrabang, Thailand, 2. Department of Physics, King Mongkut's Institute of Technology Ladkrabang, Thailand, 3. Department of Chemistry, King Mongkut's Institute of Technology Ladkrabang, Thailand, 4. Thailand Center of Excellence in Physics, Commission on Higher Education, Thailand

"Free-Standing Graphene Oxide Films: Effect of Thermal Reduction on Structural Electrical Properties"

16th July (Tuesday) 16:00-18:00 **Poster Presentation II**

TuP-01 (P138)

Koichi Fukuda¹, Junichi Hattori¹, Hidehiro Asai¹, Tsutomu Ikegami¹

1. AIST, Japan

"Multi-Flux Device Simulation and Application to Upper Valley Effects"

TuP-02 (P139)

Hajime Tanaka¹, Nobuya Mori¹

1. Osaka University, Japan

"NEGF Analysis of Classical Hall Effect in Two-dimensional Systems"

TuP-03 (P140)

Pradyumna Muralidharan¹, Stephen M Goodnick¹, Dragica Vasileska¹

1. Arizona State University, USA

"Hot Carrier Injection in Si Heterojunction Solar Cells"

TuP-04 (P141)

Hui Li¹, Huachen Zhang¹, Yipu Xia², Huan-Wen Wang¹, Hongtao He³, Mao Hai Xie², Jiannong Wang^{1,4}

1. Department of Physics, the Hong Kong University of Science and Technology, China, 2. Department of Physics, the University of Hong Kong, China, 3. Department of Physics, Southern University of Science and Technology, China, 4. William Mong Institute of Nano Science and Technology, the Hong Kong University of Science and Technology, China

"Proximity induced topologically nontrivial states in Sb₂Se₃ thin films"

TuP-05

Withdraw

TuP-06 (P142)

Maxime Giteau^{1,4}, Kentaroh Watanabe^{1,4}, Naoya Miyashita^{1,4}, Hassanet Sodabanlu^{1,4}, Stéphane Collin^{2,4}, Jean-François Guillemoles^{3,4}, Yoshitaka Okada^{1,4}

1. RCAST, The University of Tokyo, Japan, 2. C2N, CNRS, University Paris-Sud/Paris-Saclay, France, 3. CNRS, IPVF, France, 4. NextPV, The University of Tokyo, Japan

"Maximizing the Electron Temperature in Hot-Carrier Solar Cells"

TuP-07 (P143)

Takafumi Ishibe¹, Nobuyasu Naruse², Yuichiro Yamashita³, Yoshiaki Nakamura¹

1. Osaka University, Japan, 2. Shiga University of Medical Science, Japan, 3. National Institute of Advanced Industrial Science and Technology, Japan

"Simultaneous realization of thermal conductivity reduction and thermoelectric power factor enhancement using ZnO nanowire interface"

TuP-08 (P144)

Alex A. Kalae¹, Andreas Wacker¹

1. Mathematical Physics, Lund University, Sweden

"Optimal Heterostructure Geometry for Electron Extraction from Quantum Dots"

TuP-09 (P145)

Doris E. Reiter¹, Paweł Karwat^{2,3}, Tilmann Kuhn¹, Ortwin Hess³

1. University of Münster, Germany, 2. Wroclaw University of Science and Technology, Poland, 3. Imperial College London, UK

"Phonon lasing in a thermal quantum nanomachine"

TuP-10 (P146)

Xin Huang¹, Sergei Gluchko^{1,2}, Roman Anufriev¹, Sebastian Volz^{1,2}, Masahiro Nomura^{1,3}

1. Institute of Industrial Science, The University of Tokyo, Japan, 2. LIMMS/CNRS-IIS, The University of Tokyo, Japan, 3. CREST, Japan Science and Technology Agency, Japan

"Thermal Conductivity Reduction in Silicon Thin Film with Nanocones"

TuP-11 (P147) (The date of presentation is changed from Tuesday to Monday)

Masato Morifuji

Osaka University, Japan

"Numerical Approach to Lattice Vibrational Properties in Semiconductors"

TuP-12 (P148)

Ryuichi Ohta¹, Hajime Okamoto¹, Takehiko Tawara^{1,2}, Hideki Gotoh¹, Hiroshi Yamaguchi¹

1. NTT Basic Research Laboratories, Japan, 2. NTT Nanophotonics center, Japan

"Strain-induced lifetime modulation of GaAs excitons with a micromechanical resonator"

TuP-13 (P149)

Le Thi Yen¹, Yoshinari Kamakura¹, Nobuya Mori¹

1. Osaka University, Japan

"Device Simulation of Barrier Infrared Photodetectors Using InAs/GaSb Superlattice"

TuP-14 (P150)

Guillermo F. Quinteiro³, Damian Care¹, Tilmann Kuhn²

1. Universidad de Buenos Aires, Argentina, 2. University of Münster, Germany, 3. Universidad Nacional del Nordeste, Argentina

"Self-induction in quantum rings driven by optical vortices"

TuP-15 (P151)

Mateusz Krzykowski¹, Michał Gawelczyk^{1,2}, Krzysztof Gawarecki¹, Paweł Machnikowski¹

1. Department of Theoretical Physics, Faculty of Fundamental Problems of Technology, Wrocław University of Science and Technology, Poland, 2. Department of Experimental Physics, Faculty of Fundamental Problems of Technology, Wrocław University of Science and Technology, Poland

"Which-Way Pure Spin Dephasing in a Coupled Quantum Dot System"

TuP-16 (P152)

Alexander V. Andrianov¹, A. O. Zakhar'in¹

1. Ioffe Institute, Russia

"Interplay of Excitonic and Impurity Related Terahertz Photoluminescence from Doped Silicon"

TuP-17 (P153)

Hideo Takeuchi¹, Takyua Nishimura¹, Masaaki Nakayama¹, Andra Chen², Richard L. Field², Rachel S. Goldman²

1. Osaka City University, Japan, 2. University of Michigan, USA

“Terahertz emission from coherent longitudinal optical (LO) phonons and LO-phonon-plasmon coupled modes in a low-temperature-grown GaAs epitaxial layer”

TuP-18 (P154)

Luca Varani², Vadym Korotyeyev¹, Viacheslav Kochelap¹

1. Department of Theoretical Physics, Institute of Semiconductor Physics of NAS of Ukraine, Ukraine, 2. Institute of Electronics and Systems, UMR CNRS 5214, University of Montpellier, France

“Theory of plasmonic oscillations of two-dimensional electron gas subjected to high-electric field”

TuP-19 (P155)

Luca Varani¹, Isidore Diouf¹, Stephane Blin¹, Annick Pénarier¹, Dominique Coquillat², Nina Dyakonova², Virginie Nodjiadjim³, Muriel Riet³

1. Institut d'Electronique et des Systèmes, UMR 5214 CNRS-University of Montpellier, France, 2. Laboratoire Charles Coulomb (L2C), UMR 5221 CNRS-University of Montpellier, France, 3. III-V Lab, Campus de Polytechnique, 1 avenue Augustin Fresnel, Palaiseau, France

“Responsivity enhancement of double heterojunction bipolar transistors for wireless terahertz communication”

TuP-20 (P156)

Elsa Pérez-Martín¹, D. Vaquero¹, H. Sánchez-Martín¹, C. Gaquière², T. González¹, **J. Mateos**¹, I. Iñiguez-de-la-Torre¹

1. University of Salamanca, Spain, 2. University of Lille 1, France

“Temperature dependence of microwave responsivity in GaN-based self-switching diodes”

TuP-21 (P157)

Juan A. Delgado-Notario^{1,2}, Vito Clericò¹, Enrique Diez¹, Jesús Enrique Velázquez-Pérez¹, Takashi Taniguchi³, Kenji Watanabe³, Taiichi Otsuji², Yahya Moubarak Meziani¹

1. Salamanca University, Spain, 2. Tohoku University, Japan, 3. National Institute of Material Sciences, Japan

“Asymmetric Dual-Grating Gate Graphene FETs as efficient Terahertz detectors”

TuP-22 (P158)

Fumikazu Murakami¹, Kazunori Serita¹, Hironaru Murakami¹, Rea Dalipi¹, A. M. Urbas², A. Materna³, M. Buza³, D. A. Pawlak³, Masayoshi Tonouchi¹, Iwao Kawayama¹

1. Institute of Laser Engineering, Osaka University, Japan, 2. Materials and Manufacturing Directorate, AFRL, USA, 3. Institute of Electronic Materials Technology, Poland

"Characteristics of THz emissions from Bi₂Te₃/Te striped structures"

TuP-23 (P159)

Mikhail O. Nestoklon¹, Pavel S. Alekseev¹, Sergey A. Tarasenko¹

1. Ioffe Institute, Russia

"Interface-driven spin splitting in 2D structures: quantum wells and topological insulators"

TuP-24 (P160)

Krzysztof Gawarecki¹, Mateusz Krzykowski¹

1. Wrocław University of Science and Technology, Poland

"Spin relaxation of hole states and spin-orbit coupling in [001]- and [111]-oriented quantum dots of various geometry"

TuP-25 (P161)

Adam P. Micolich¹, A.R. Ullah¹, D.J. Carrad^{1,2}, F. Meyer¹, J.G. Gluschke¹, S. Naureen³, P. Caroff³, P. Krogstrup², J. Nygård²

1. University of New South Wales, Australia, 2. University of Copenhagen, Denmark, 3. The Australian National University, Australia

"p-GaAs nanowire transistors with near-thermal limit gating"

TuP-26 (P162)

Tomosuke Aono¹, M. Takahashi², M.H. Fauzi³, Y. Hirayama^{2,3,4}

1. Ibaraki University, Japan, 2. Department of Physics, Tohoku University, Japan, 3. Center for Spintronics Research Network, Tohoku University, Japan, 4. Center for Science and Innovation in Spintronics (Core Research Cluster), Tohoku University, Japan

"Disorder potential effect on electron transport through quantum point contacts"

TuP-27 (P163)

Shuo Yang¹, Dong Pan², Huanwen Wang¹, Hui Li¹, Guanghui Cheng¹, Huachen Zhang¹, Xin Yan¹, Yang Li¹, Jianhua Zhao², Jiannong Wang¹

1. Hong Kong University of Science and Technology, China, 2. Chinese Academy of Sciences, China

"Transport properties of InAs nanowire and NbSe₂ hybrid structures"

TuP-28 (P164)

Fumitaro Ishikawa¹, Teruyuki Matsuda¹, Kosuke Yano¹, Satoshi

Shimomura¹

1. Ehime University, Japan

"GaAs/GaAsBi Core-Multishell Nanowires Forming Quantum Confined Structure"

TuP-29 (P165)

Kenji Shibata^{1,2}, Matija Karalic¹, Christopher Mittag¹, Thomas Tschirky¹, C. Reichl¹, H. Ito², K. Hashimoto^{3,4}, T. Tomimatsu³, Y. Hirayama^{3,4,5}, W. Wegscheider¹, T. Ihn¹, K. Ensslin¹

1. Solid State Physics Laboratory, ETH Zurich, Switzerland, 2. Tohoku Institute of Technology, Japan, 3. Graduate School of Science, Tohoku University, Japan, 4. Center for Spintronics Research Network, Tohoku University, Japan, 5. Center for Science and Innovation in Spintronics (Core Research Cluster), Tohoku University, Japan

"Electric-field-induced two-dimensional hole gas in undoped GaSb quantum wells"

TuP-30 (P166)

Junki Fushimi¹, Junichi Tsutsumi¹, Kenichi Oto^{1,2}, Yasuhiro Yamada¹, Hirohumi Mino^{1,3}, Takashige Omatsu^{2,4}

1. Department of Physics, Chiba University, Japan, 2. MCRC, Chiba University, Japan, 3. College of Liberal Arts and Sciences, Chiba University, Japan, 4. Graduate School of Engineering, Chiba University, Japan

"Transport Properties of Quantum Hall Electron System under Optical Vortex Irradiation"

TuP-31 (P167)

Shyankay Jou¹, H.-C. Yu¹, Y.-T. Huang¹, M. P. Muna¹, B.-R. Huang¹

1. National Taiwan University of Science and Technology, Taiwan

"Graphene/Silicon Photodetector Enhanced by Titanium Nitride Coatings"

TuP-32 (P168)

Shenchu Yin¹, J. G. Glusckke², A.P. Micolich², J. Nathawat¹, B. Barut³, R. Dixit², N. Arabchigavkani³, K. He¹, M. Randle¹, C.-P. Kwan³, J.P. Bird¹

1. Department of Electrical Engineering, University at Buffalo, USA, 2. Institute of Microelectronics of Chinese Academy of Sciences, China, 3. Department of Physics, University at Buffalo, USA

"Charge Trapping Mechanism in Graphene Field-Effect Transistors on Polyethylene-C Substrate"

TuP-33 (P169)

Kohei Sakanashi¹, Naoto Wada¹, Kentaro Murase¹, Younsu Kim², Gil-ho Kim², Jonathan P. Bird³, Kenji Watanabe⁴, Takashi Taniguchi⁴, Nobuyuki Aoki¹

1. Chiba University, Japan, 2. Sungkyunkwan University, Korea, 3. the State University of New York, University at Buffalo, USA, 4. National Institute for Materials Science, Japan

"Electrostatically Confined Quantum Structures in Bilayer Graphene"

TuP-34 (P170)

Kareekunnan Afsal¹, Manoharan Muruganathan¹, Hiroshi Mizuta^{1,2}

1. Japan Advanced Institute of Science and Technology, Japan, 2. Hitachi Cambridge Laboratory, Hitachi Europe Ltd., UK

"Valley Hall Effect in Unbiased Bilayer Graphene"

TuP-35 (P171)

Kensuke Aoki¹, Kohei Sakanashi¹, Nobuyuki Aoki¹

1. Chiba University, Japan

"Fabrication of high-quality graphene nanoribbon via silver nanowire shadow-masking"

TuP-36 (P172)

Yuto Kajino¹, Masaya Arai¹, Kenichi Oto¹, Yasuhiro Yamada¹

1. Chiba University, Japan

"Direct observation of the band-to-band transition in monolayer MoS₂ by photocurrent excitation spectroscopy"

TuP-37 (P173)

Kenichi Oto^{1,2}, Haruko Miyaji¹, Toshihiro Nakaoka³, Shunsuke Ishizawa³, Katsumi Kishino³

1. Chiba University, Japan, 2. MCRC, Chiba University, Japan, 3. Sophia University, Japan

"Quantum Transport in GaN/AlGa_N 2D-Electron Gas with Periodic Potential Modulation Induced by the GaN Nanocolumns"

TuP-38 (P174)

M.T. Greenaway^{1,2}, R. Krishna Kumar³, P. Kumaravadeivel^{3,4}, A.K. Geim^{3,4}, L. Eaves^{2,3}

1. Loughborough University, UK, 2. University of Nottingham, UK, 3. School of Physics and Astronomy, University of Manchester, UK, 4. National Graphene Institute, University of Manchester, UK

“A theory for magnetophonon resistance oscillations in graphene and carrier screening of the longitudinal acoustic modes”