EDISON 20

The 20th International Conference on Electron Dynamics in Semiconductors, Optoelectronics and Nanostructures

BUFFALO, NY/JULY 16-21, 2017

Full Program

SUNDAY, JULY 16th

Registration
16.00 – 19.00

Welcome Reception
19.00 – 21:00

MONDAY, JULY 17th

Registration
08.00 – 08.45

Opening Remarks
08.45 – 09.15: Jonathan Bird, General Chair

Session Mo01: Graphene & 2D Materials I (Chair: Eric Pop, Stanford University, USA)
09.15 – 10.15

09.15 – 09.45: **P. Kim**
Department of Physics, Harvard University, USA.
Electronics and optoelectronics in the van der Waals heterojunctions of 2-dimensional materials

09.45 – 10.00: S. Bhandari[1], G.-H. Lee[1], K. Wang[1], T. Taniguchi[2], K. Watanabe[2], P. Kim[1], and R. M. Westervelt[1]
[1] School of Engineering & Applied Sciences and Department of Physics, Harvard University, USA,
[2] National Institute for Materials Science, Tsukuba, Japan
Imaging Electron Motion in 2D Materials

10:00 – 10.15: M. Mineharu[1], N. Matsumoto[1], M. Matsunaga[1], Y. Ochiai[1], G.-H. Kim[2], K. Watanabe[3], T. Taniguchi[3], D. K. Ferry[4], J. P. Bird[1,5], and N. Aoki[1]
[1] Graduate School of Advanced Integration Science, Chiba University, Japan, [2] School of Electronic Electrical Engineering and Sungkyunkwan Advanced Institute of Nanotechnology, Sungkyunkwan University, Korea, [3] National Institute for Materials Science, Tsukuba, Japan, [4] School of Electrical, Computer, and Energy Engineering, Arizona State University, USA, [5] Department of Electrical Engineering, University at Buffalo, USA
Anomalous conductance fluctuations in high-mobility BN/graphene/BN heterojunctions

Coffee, 10.15 – 10.45

Session Mo02: Coherent Carrier Dynamics in Solids (Chair: Rosella Brunetti, University of Modena, Italy)
10.45 – 12.30

10.45 – 11.15: **M. Kira[1], U. Huttner[1,2], P. Hawkins[1,2], J. Steiner[2], S. W. Koch[2], F. Langer[3], M. Hohenleutner[3], and R. Huber[3]**
[1] Electrical Engineering & Computer Science, University of Michigan, USA, [2] Department of Physics, University of Marburg, Germany, [3] Department of Physics, University of Regensburg, Germany
Lightwave quantum electronics in semiconductors

11.15 – 11.30: T. Kuhn, S. Lüker, and D. E. Reiter
Institut für Festkörpertheorie, Westfälische Wilhelms-Universität Münster, Münster, Germany
The role of phonons for the optical control of bright and dark excitons in a semiconductor quantum dot

11.30 – 11.45: R. Chen, X. Zheng, Z. Xu, Y. Tang, and T. Jiang
National University of Defense Technology, Changsha, China
Photo-induced excitonic bands renormalization and broadband absorption in atomically thin tungsten disulphide

11.45 – 12.00: S. Du[1], K. Yoshida[1], Y. Zhang[1], I. Hamada[2], and K. Hirakawa[1,3]
[1] Center for Photonics Electronics Convergence, Institute of Industrial Science, University of Tokyo, Japan, [2] Center for Green Research on Energy and Environmental Materials, National Institute for Materials Science, Tsukuba, Japan, [3] Institute for Nano Quantum Information Electronics, University of Tokyo, Japan
Terahertz dynamics of electron-vibron coupling in single molecules with tunable electrostatic potential

12.00 – 12.15: K. Wei, D. Yang, and T. Jiang
College of Optoelectronic Science and Engineering, National University of Defense Technology, Changsha, China
Observation of ultrafast exciton-exciton annihilation in $CsPbBr_3$ quantum dots

12.15 – 12.30: J. Bühler, C. Schmidt, J. Allerbeck, A.-C. Heinrich, D. Brida, and A. Leitenstorfer
Department of Physics and Center for Applied Photonics, University of Konstanz, Konstanz, Germany
Subcycle Wannier-Stark localization in Bulk GaAs induced by strong mid-infrared fields

Lunch, 12.30 – 14:30

Session Mo03: 14.30 – 15.45 Nonequilibrium Transport in Novel Devices I (Chair: Tomás Gonzalez, University of Salamanca, Spain)

14.30 – 15.00: J. Encomendero[1], S. M. Islam[1], V. Protasenko, D. Jena[1,2], and H. Xing[1,2]
[1] School of Electrical and Computer Engineering, Cornell University, USA, [2] Department of Materials Science and Engineering, Cornell University, USA
Decoding Reliable Oscillation and UV Light Emission in AlN/GaN Resonant Tunnel Diodes

15.00 – 15.15: D. M. Di Paola[1], A. V. Velichko[1], M. Bomers[2,3], N. Balakrishnan[1], O. Makarovsky[1], M. Capizzi[4], A. Polimeni[4], M. Kesaria[5], A. Krier[5], L. Eaves[1], T. Taliercio[2,3], and A. Patanè[1]
[1] School of Physics and Astronomy, The University of Nottingham, UK, [2] University of Montpellier and [3]CNRS, Montpellier, France, [4] Physics Department, Lancaster University, UK
Zero-dimensional Zener tunneling and plasmon resonances due to N- and H- incorporation in the narrow gap InAs

15.15 – 15.30: R. Yan[1], G. Khalsa[2], S. Vishwanath[1], Y. Han[3], J. Wright[2], D. Muller[3], H. Xing[1,2], S. Katzer[4], N. Nepal[4], B. Downey[4], D. Meyer[4], and D. Jena[1,2]
[1] School of Electrical and Computer Engineering, Cornell University, USA, [2] Department of Materials Science and Engineering, Cornell University, [3] School of Applied and Engineering Physics, Cornell University, [4] U.S. Naval Research Laboratory, Washington D.C., USA
Thermally-induced NDR in epitaxial superconductor Nb_2N/GaN/AlN heterojunctions

15.30 – 15.45: O. Kedem[1], B. Lau[1,2], and E. A. Weiss[1,2]
[1] Center for Bio-Inspired Energy Science, Northwestern University, Chicago, Illinois, USA, [2] Department of Chemistry, Northwestern University, USA
Ratcheting of photo-generated carriers in an organic bulk-heterojunction

Coffee, 15.45 – 16.15

Session Mo4: Graphene & 2D Materials II (Chair: Erik Einarsson, University at Buffalo, USA)
16.15 – 17.00

16.15 – 16.30: N. Balakrishnan[1], Z. R. Kudrynskyi[1], G. W. Mudd[1], O. Makarovsky[1], Z. D. Kovalyuk[2], L. Eaves[1], P. H. Beton[1], and A. Patanè[1]
[1] School of Physics and Astronomy, The University of Nottingham, UK, [2] Institute for Problems of Materials Science, National Academy of Sciences of Ukraine, Ukraine
InSe rediscovered: A van der Waals crystal for new electronic and opto-electronic devices

16.30 – 16.45: K. Ghosh and U. Singisetti
Department of Electrical Engineering, University at Buffalo, USA
Hot electrons in layered materials – a first principles perspective

16.45 – 17.00: K. K. H. Smithe, C. D. English, S. V. Suryavanshi, and E. Pop
Department of Electrical Engineering, Stanford University, USA
High-field transport and velocity saturation in CVD monolayer MoS_2

Poster Session I, with Wine & Beer, 17.15 – 19.30

TUESDAY, JULY 18th

Session Tu01: Terahertz Phenomena in Semiconductor Materials & Devices (Chair: L. Varani, University of Montpellier, France)
09.00 – 10.45

09.00 – 09.30: J. Kono
Departments of Electrical & Computer Engineering, Physics & Astronomy, and Materials Science & NanoEngineering, Rice University, USA
Ultrastrong light-matter coupling in a high-Q terahertz cavity

09.30 – 09.45: J. Torres[1], M. Lechelon[2], I. Nardecchia[2], L. Varani[1], I. Donato[3], M. Gori[3], and M. Pettini[3]
[1] Institut d'Electronique et des Systemes, Universite de Montpellier, France, [2] Centre d'Immunologie de Marseille-Luminy, Universite Aix-Marseille, France, [3] Centre de Physique Theorique de Marseille, Universite Aix-Marseille, France
Out-of-equilibrium proteins dynamic probed by THz spectroscopy: towards Frohlich's condensation

09.45 – 10.00: C. Consejo[1], D. B. But[1], S. S. Krishtopenko[1,2], N. Dyakonova[1], S. V. Morozov[2], V. I. Gavrilenko[2], N. N. Michailov[3], S. A. Dvoretskii[3], L. Varani[1], F. Teppe[1], and W. Knap[1]
[1] Laboratoire Charles Coulomb, University of Montpellier & CNRS, France, [2] Institute for Physics of Microstructures RAS, Nizhny Novgorod, Russia, [3] Institute of Semiconductor Physics, Siberian Branch RAS, 630090, Novosibirsk, Russia
Hot carriers and THz cyclotron emission from Dirac-like fermions in bulk HgCdTe alloys

10.00 – 10.15: J. A. Delgado Notario[1], E. Javadi[1,2], V. Clericò[1], K. Fobelets[3], T. Otsuji[4], E. Diez[1], J.E. Velázquez-Pérez[1], and Y.M. Meziani[1]
[1] NanoLab, Salamanca University, Salamanca, Spain, [2] School of ECE, College of Engineering, University of Tehran, Iran, [3] Department of Electrical and Electronic Engineering, Imperial College, UK, [4] Research Institute of Electrical Communication, Tohoku University, Sendai, Japan
Experimental and theoretical studies of Sub-THz detection using strained-Si FETs

10.15 – 10.30: J. Serafini[1], Y. Akbas[1], S. B. Trivedi[2], D. Kochanowska[3], M. Wiktowska-Baran[3], A. Mycielski[3], M. Guziewicz[4], R. Kruszka[4], W. Słysz[4], and R. Sobolewski[1]
[1] University of Rochester, Rochester, USA, [2] Brimrose Technology Corporation, Sparks, USA, [3] Institute of Physics, Polish Academy of Sciences, Warszawa, Poland, [4] Institute of Electron Technology, Warszawa, Poland
Characterization of (Cd,Mg)Te and (Cd,Mn)Te single crystals in the THz frequency range using integrated photoconductive and electro-optic effects

10.30 – 10.45: P. Q. Liu[1,2], Z. Zhu[3], R. Haglund[4], and I. Brener[1]
[1] Center for Integrated Nanotechnologies, Sandia National Laboratories, Albuquerque, USA, [2] Department of Electrical Engineering, University at Buffalo, USA, [3] Department of Electrical Engineering and Computer Science, Vanderbilt University, USA, [4] Department of Physics and Astronomy, Vanderbilt University, USA
Anomalous insulator-to-metal phase transition of VO_2 nanostructures embedded in terahertz antenna resonant with VO_2 optical phonons

Coffee, 10.45 – 11.15

Session Tu02: 11.15 – 12.30 Nonequilibrium Transport in Novel Devices II (Chair: Masaya Kataoka, National Physical Laboratory, UK)

11.15 – 11.45: K. Semba
National Institute of Information and Communications Technology (NICT), Tokyo, Japan
New light-matter ground state in the deep strong coupling regime

11.45 – 12.00: C. Jacoboni[1], E. Piccinini[2], R. Brunetti[1], and M. Rudan[2]
[1] Dipartimento di Scienze Fisiche, Informatiche e Matematiche, Università di Modena e Reggio Emilia, Modena, Italy, [2] Dipartimento di Ingegneria dell'Energia Elettrica e dell'Informazione "Guglielmo Marconi", Università degli Studi di Bologna, Bologna, Italy
Transport scaling limits of Ovonic devices: a simulative approach

12.00 – 12.15: G. Auton[1,2], D. But[3], J. Zhang[1], E. Hill[2], D. Coquillat[3], C. Consejo[3], P. Nouvel[4], L. Varani[4], F. Teppe[3], J. Torres[4], and A. Song[4]
[1] School of Electrical and Electronic Engineering, University of Manchester, UK, [2] Manchester Centre for Mesoscience and Nanotechnology, University of Manchester, UK, [3] Laboratoire Charles Coulomb, University of Montpellier, France, [4] Institut d'Electronique et des Systèmes, University of Montpellier, France
Out-of-equilibrium carrier rectification of RF-waves in ballistic graphene four-terminals devices

12.15 – 12.30: S. Sánchez-Martín[1], H. Sánchez-Martín[1], J. A. Novoa[1], S. Pérez[1], C. Gaquière[2], J. Mateos[1], T. González[1], and I. Íñiguez-de-la-Torre[1]
[1] Applied Physics Department, Salamanca University, Salamanca 37008, Spain, [2] Institut d'Electronique, de Microlectronique et de Nanotechnologie, University of Lille 1, France
Detection enhancement by gate control in GaN nanodiodes

Lunch, 12.30 – 14:30

Session Tu03: 14.30 – 15.45 Energy Transfer in Nanostructures (Chair: Stephen M. Goodnick, Arizona State University, USA)

14.30 – 15.00: R. J. Nicholas[1], J. Tse-Wei Wang[1], R. Sutton[1], A. A. Haghighirad[1], H. J. Snaith[1], A. A. Mitioglu[2], A. Miyata[1,2], Z. Yang[2], K. Galkowski[2], A. Surrente[2], O. Portugall[2], D. K. Maude[2], and P. Plochocka[2]
[1] University of Oxford, Clarendon Laboratory, Parks Road, Oxford, OX1 3PU, UK, [2] Laboratoire National des Champs Magnétiques Intenses, Grenoble and Toulouse, France
Magneto-optical studies of excitons in the hybrid organic-inorganic perovskite family

15.00 – 15.15: H. Patel[1], K. Vogt[1], S. Shi[2], F. Wang[2], and M. W. Graham[1]
[1] Department of Physics, Oregon State University, USA, [2] Department of Physics, University of California, Berkeley, USA
Directing interlayer exciton photocurrent dynamics by twisting and stacking van der Waals materials

15.15 – 15.30: A. Kommini and Z. Aksamija
Department of Electrical and Computer Engineering, University of Massachusetts-Amherst, USA
Thermoelectric properties of periodic quantum structures in the Wigner-Rode formalism

15.30 – 15.45: H. Esmaielpour[1], J. Tang[1], H. P. Piyathilaka[2], V. R. Whiteside[1], S. Vijeyaragunathan[1], T. D. Mishima[1], M. B. Santos[1], A. D. Bristow[2], and I. R. Sellers[1]
[1] Homer L. Dodge Department of Physics & Astronomy, University of Oklahoma, USA, [2] Department of Physics & Astronomy, West Virginia University, USA
Stable hot carriers at elevated temperatures and low excitation density in type-II quantum wells: a candidate system for practical hot carrier solar cells

Coffee, 15.45 – 16.15

Session Tu04: Organic Materials & Devices (Chair: Uttam SIngisetti, University at Buffalo, USA)
16:15 – 16.45

16.15 – 16.30: R. Hathwar[1], M. Saraniti[1], R. Nemanich[2], and S. M. Goodnick[1]
[1] School of Electrical, Computer and Energy Engineering, Arizona State University, Tempe, USA,
[2] Department of Physics, Arizona State University, Tempe, USA
Full band Monte Carlo simulation of high field transport in diamond

16.30 – 16.45: J. G. Gluschke[1], D. J. Carrad[1,2], J. B. W. Cochrane[1], S. Lehmann[3], L. Samuelson[3], and A. P. Micolich[1]
[1] School of Physics, University of New South Wales, Sydney, Australia, [2] Center for Quantum Devices, Nano-Science Center, Niels Bohr Institute, University of Copenhagen, Denmark, [3] Solid State Physics/NanoLund, Lund University Sweden
Using ultra-thin parylene films as an organic gate insulator in nanowire field-effect transistors

Special Seminar
16.45 – 17.15 Samindranath Mitra, Editor, Physical Review Letters

Poster Session II, with Wine & Beer, 17.30 – 19.45

WEDNESDAY, JULY 19th

Session We01: Graphene & 2D Materials III (Chair: Junichiro Kono, Rice University, USA)
09:00 – 10:30

09.00 – 09.30: K. M. Dani
Okinawa Institute of Science and Technology, Okinawa, Japan
Cinematography of charge: the art of making movies of electrons

09.30 – 09.45: M. Eginligil[1,2], B. Cao[2], F. Hipólito[3,4,5], Z. Wang[2,6], X. Shen[2], V. M. Pereira[3,4], C. Soci[2,6], and T. Yu[2,3]
[1] Key Laboratory of Flexible Electronics (KLOFE) & Institute of Advanced Materials (IAM), Jiangsu National Synergetic Innovation Center for Advanced Materials (SICAM), Nanjing Tech University, China, [2] Division of Physics and Applied Physics, Nanyang Technological University, Singapore, [3] Department of Physics, National University of Singapore, Singapore, [4] Centre for Advanced 2D Materials and Graphene Research Centre, National University of Singapore, Singapore, [5] NUS Graduate School for Integrated Sciences and Engineering, Centre for Life Sciences, Singapore, [6] Centre for Disruptive Photonic Technologies, Nanyang Technological University, Singapore
Light helicity dependent photocurrents in graphene and 2D semiconductors

09.45 – 10.00: A. Mitioglu[1,2], M. Ballottin[1], J. Buhot[1], S. Anghel[2], L. Kulyuk[2], and P. C. M. Christianen[1]
[1] High Field Magnet Laboratory, Radboud University, Nijmegen, the Netherlands, [2] Institute of Applied Physics, Republic of Moldova
Magneto-optical investigation of strained 2D WSe_2 monolayers

10.00 – 10.15: M. Massicotte[1], F. Vialla[1], P. Schmidt[1], M. B. Lundeberg[1], S. Latini[2], S. Haastrup[2], M. Danovich[3], D. Davydovskaya[1], K. Watanabe[4], T. Taniguchi[4], V. I. Fal'ko[3], K. S. Thygesen[2], T. G. Pedersen[5], and F. H. L. Koppens[1]
[1] ICFO, The Barcelona Institute of Science and Technology, Barcelona, Spain, [2] Department of Physics, Center for Atomic-Scale Materials Design (CAMD), Technical University of Denmark, Denmark, [3] National Graphene Institute, University of Manchester, UK, [4] National Institute for Materials Science, Tsukuba, Japan, [5] Department of Physics and Nanotechnology, Aalborg University, Denmark and Center for Nanostructured Graphene (CNG), Aalborg, Denmark
Tunnel ionization of 2D excitons in monolayer WSe_2

10.15 – 10.30: F. Karimi and I. Knezevic
Department of Electrical and Computer Engineering, University of Wisconsin-Madison, Madison, USA
Linear and nonlinear optical response of graphene nanoribbons

Coffee, 10.30 – 11.00

Session We02: Graphene & 2D Materials IV (Chair: Jean J. Heremans, Virginia Tech., USA)
11.00 – 12.15

11.00 – 11.30: E. Pop[1,2,3], E. Yalon[1], M. Muñoz-Rojo[1], M. Mleczko[1], C. English[1], N. Wang[1], K. Smithe[1], S. Suryavanshi[1], I. Datye[1], C. McClellan[1], A. Gabourie[1], M. Chen[2], and V. Chen[1]
[1] Department of Electrical Engineering, Stanford University, USA, [2] Department of Materials Science & Engineering, Stanford University, USA, [3] Precourt Institute for Energy, Stanford University, USA
Hot carriers in devices based on graphene and 2D materials

11.30 – 11.45: S.-C. Lu, Y. Kim, M. J. Gilbert, and U. Ravaioli
Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, USA
Layer-dependent performance of ultra-short asymmetric Black Phosphorus vertical TFETs without chemical doping

11.45 – 12.00: G. He[1], H. Ramamoorthy[1], C.-P. Kwan[1], J. Nathawat[1], R. Somphonsane[2], R. Vajtai[3], P. M. Ajayan[3], D. K. Ferry[4], and J. P. Bird[1]
[1] Department of Electrical Engineering, University at Buffalo, USA, [2] Department of Physics, King Mongkut's Institute of Technology Ladkrabang, Thailand, [3] Department of Materials Science and Nano Engineering, Rice University, USA, [4] School of Electrical, Computer, and Energy Engineering, Arizona State University, USA
Negative differential conductance and hot-carrier avalanching in transition-metal-dichalcogenide field-effect transistors

12.00 – 12.15: D. K. Ferry
School of Electrical, Computer, and Energy Engineering, Arizona State University, USA
High Field Transport in Some Transition Metal Di-Chalcogenides

Lunch, 12.15 – 14:30

Conference Excursion, 14.30 – 19.30

THURSDAY, JULY 20th

Session Th01: 09.00 – 10.15 **Mesoscopic Phenomena in Nanostructured Materials & Devices I (Chair: Stefan Ludwig, Paul Drude Institute, Germany)**

09.00 – 09.30: **N. Johnson[1,2], J. D. Fletcher[1], P. See[1], C. Emary[3], S. Ryu[4], H.-S. Sim[4], J. P. Griffiths[5], G. A. C. Jones[5], I. Farrer[5], D. A. Ritchie[5], M. Pepper[2], T. J. B. M. Janssen[1], and M. Kataoka[1]**
[1] National Physical Laboratory, Teddington, UK, [2] London Centre for Nanotechnology, and Department of Electronic & Electrical Engineering, University College London, UK, [3] Joint Quantum Centre Durham-Newcastle, School of Mathematics and Statistics, Newcastle University, UK, [4] Department of Physics, Korea Advanced Institute of Science and Technology, Republic of Korea, [5] Cavendish Laboratory, University of Cambridge, UK
Single-hot-electron transport in quantum hall edge states

09.30 – 09.45: L. Bellentani[1], A.Beggi[1], P. Bordone[1,2], and A. Bertoni[2]
[1] Dipartimento di Scienze Fisiche, Informatiche, Matematiche, Univerità degli studi di Modena e Reggio Emilia, Modena, Italy, [2] CNR-Istituto Nanoscienze, Modena, Italy
Dynamics of copropagating edge states in a multichannel Mach Zender interferometer

09.45 – 10.00: Z. Su[1], H. Wu[1], M. Hocevar[2], D. Car[3], S. R. Plissard[4], E. P. A. M. Bakkers[3], D. Pekker[1], and S. M. Frolov[1]
[1] Department of Physics and Astronomy, University of Pittsburgh, USA, [2] CNRS, Institut Neel, Grenoble, France, [3] Department of Applied Physics, Eindhoven University of Technology, the Netherlands, [4] LAAS CNRS, Universite de Toulouse, Toulouse, France
Kitaev model with quantum dot chains in semiconductor nanowires

10.00 – 10.15: J. Li[1], C. Aron[2,3], G. Kotliar[4], and J. E. Han[1]
[1] Department of Physics, University at Buffalo, USA, [2] Laboratoire de Physique Théorique, École Normale Supérieure, CNRS, Sorbonne Universités, France, [3] Instituut voor Theoretische Fysica, KU Leuven, Belgium, [4] Department of Physics, Rutgers University, New Jersey, USA
Microscopic theory of resistive switching in ordered insulators: electronic vs. thermal mechanism

Coffee, 10.15 – 10.45

Session Th02: 10.45 – 12.15 **Quantum Coherence in Mesoscopic Structures (Chair: Pawel Hawrylak, University of Ottawa, Canada)**

10.45 – 11.15: **F. Forster[1], S. Kohler[2], and S. Ludwig[3]**
[1] Center for NanoScience & Fakultät für Physik, LMU-Munich, Germany, [2] Instituto de Ciencia de Materiales de Madrid, CSIC, Madrid, Spain, [3] Paul-Drude-Institut für Festkörperphysik, Berlin, Germany
Coherence and symmetries in a driven double quantum dot: Landau-Zener-Stückelberg-Majorana interferometry

11.15 – 11.30: D. Finkelstein-Shapiro
Chemical Physics, Lund University, Sweden
Dissipative dynamics in Fano models

11.30 – 11.45: A. Bogan[1], S. Studenikin[1], M. Korkusinski[1], G. Aers[1], L. Gaudreau[1], P. Zawadzki[1], A. Sachrajda[1], L. Tracy[2], J. Reno[2], and T. Hargett[2]
[1] Security and Disruptive Technologies, National Research Council, Ottawa, Canada, [2] Sandia National Laboratories, Albuquerque, New Mexico, USA
Hole hybrid qubit in a gated double quantum dot – spin-flip tunneling, anisotropic g- factor, and spin coherence time of a single hole

11.45 – 12.00: D. Wigger, D. E. Reiter, and T. Kuhn
Institut für Festkörpertheorie, Universität Münster, Germany
Control of quantum dot laser emission by coherent phonon wave packets

12.00 – 12.15: L. Mourokh[1], A. Wixforth[2], F. Beil[3], M. Bichler[4], W. Wegscheider[5], and R. H. Blick[6]
[1] Physics Department, Queens College of CUNY, USA, [2] Physics Department, University of Augsburg, Augsburg, Germany [3] Ludwigs-Maximilians-Universität-München, München, Germany, [4] Walter-Schottky-Institute, Garching, Germany, [5] Laboratory for Solid State Physics, ETH Zurich, Switzerland, [6] Center for Hybrid Nanostructures and Institutes of Nanostructure and Solid State Physics, University of Hamburg, Germany
Dynamic Rabi oscillations in a quantum dot embedded to a nanobridge in the presence of surface acoustic waves

Lunch, 12.15 – 14:30

Session Th03: Thermal Transport and Phononic Structures (Chair: Robin Nicholas, Oxford University, UK)
14.30 – 15.15

14.30 – 14.45: J. D. G. Greener[1], A. V. Akimov[1], R. Beardsley[1], Z. R. Kudrynskyi[1], A. J. Kent[1], P. H. Beton[1], Z. D. Kovalyuk[2], T. Taniguchi[3], K. Watanabe[3], and A. Patanè[1]
[1] School of Physics and Astronomy, The University of Nottingham, Nottingham, UK, [2] Institute for Problems of Materials Science, The National Academy of Sciences of Ukraine, Ukraine, [3] The National Institute for Materials Science, Tsukuba, Japan
Opto-nanomechanical properties of 2D van der Waals layers and heterostructures

14.45 – 15.00: M. Nomura[1,2,3], J. Maire[1], R. Yanagisawa[1], A. Ramiere[1], and R. Anufriev[1]
[1] Institute of Industrial Science, the University of Tokyo, Japan, [2] PRESTO, Japan Science and Technology Agency, Japan, [3] Institute for Nano Quantum Information Electronics, the University of Tokyo, Japan
Heat conduction control by phonon band engineering

15.00 – 15.15: R. Anufriev[1], A. Ramiere[2], R. Yanagisawa[1], J. Maire[1], and M. Nomura[1,3]
[1] Institute of Industrial Science, the University of Tokyo, Japan, [2] LIMMS/CNRS-IIS, the University of Tokyo, Japan, [3] PRESTO, Japan Science and Technology Agency, Japan
Creating and focusing directional heat fluxes using phononic nanostructures

Coffee, 15.15 – 15.45

Session Th04: Semiconductor Spintronics (Chair: Andrew Sachrajda, National Research Council of Canada, Canada)
15.45 – 17.45

15.45 – 16.15: P. Wadley[1], S. Reimers[1], C. Andrews[1], M. Grzybowski[2], K. Olejnik[3], R. Campion[1], V. Novak[3], A. Rushforth[1], K. Edmonds[1], B. L. Gallagher[1], J. Zelezny[3], and T. Jungwirth[1,3]
[1] The University of Nottingham, UK, [2] Institute of Physics, Warsaw, Poland, [3] Institute of Physics ASCR, Prague, Czech Republic
Current induced switching of an antiferromagnet

16.15 – 16.30: S. Anghel[1], F. Passmann[1], A. Singh[2], N. Moore[3], G. Yusa[3], T. Mano[4], T. Noda[4], X. Li[5], and M. Betz[1]
[1] Technische Universität Dortmund, Dortmund, Germany, [2] Department of Material Science and Engineering, Massachusetts Institute of Technology, USA, [3] Department of Physics, Tohoku University,

Sendai, Japan, [4] National Institute for Materials Science, Tsukuba, Japan, [5] Texas Materials Institute, University of Texas at Austin, USA
Gate control of the spin-orbit coupling in a modulation-doped GaAs quantum well

16.30 – 16.45: P. Hawrylak[1] and M. Korkusinski[2]
[1] Physics Department, University of Ottawa, Canada, [2] Quantum Theory Group, Security and Disruptive Technologies, National Research Council, Ottawa, Canada
Toward nuclear spintronics: interaction of nuclear and electron spins in a magnetic domain wall of a quantum hall ferromagnet

Banquet, 18.00 – 22.00

FRIDAY, JULY 21st

Session Fr01: 09.00 – 10.15 **Topological States of Matter (Chair: Jonas Fransson, Uppsala University, Sweden)**

09.00 – 09.30: R. S. Deacon[1,2], E. Bocquillon[3], J. Wiedenmann[3], F. Dominguez[3], T. Klapwijk[4], K. Ishibashi[1,2], and L. W. Molenkamp[3]
[1] Advanced Device Laboratory, RIKEN, Saitama, Japan, [2] RIKEN Center for Emergent Matter Science (CEMS), Saitama, Japan, [3] Physikalisches Institut, Universität Würzburg, Germany, [4] Kavli Institute of Nanoscience, Faculty of Applied Sciences, Delft, the Netherlands
Signatures of topological superconductivity in HgTe based Josephson junctions

09.30 – 09.45: P. Yu[1], J. Chen[1], J. Stenger[2], M. Hocevar[3], D. Car[4], S. R. Plissard[5], E. Bakkers[4], T. D. Stanescu[2], and S. M. Frolov[1]
[1] Department of Physics and Astronomy, University of Pittsburgh, USA, [2] Department of Physics and Astronomy, West Virginia University, USA, [3] Institut Néel CNRS, Grenoble, France, [4] Eindhoven University of Technology, the Netherlands, [5] LAAS CNRS, Toulouse, France
Phase diagram of a topological superconductor in an InSb nanowire

09.45 – 10.00: M. L. Savchenko[1,2], D. A. Kozlov[1,2], J. Ziegler[3], Z. D. Kvon[1,2], N. N. Mikhailov[2], and D.Weiss[3]
[1] Novosibirsk State University, Novosibirsk, Russia, [2] Rzhanov Institute of Semiconductor Physics, Novosibirsk, Russia, [3] Experimental and Applied Physics, University of Regensburg, Germany
Dirac fermions density of states in HgTe quantum well

10.00 – 10.15: T. M. Philip[1], M. R. Hirsbrunner[1,2], M. J. Park[2], and M. J. Gilbert[1]
[1] Department of Electrical Engineering, University of Illinois at Urbana-Champaign, USA, [2] Department of Physics, University of Illinois at Urbana-Champaign, USA
Performance of topological insulator interconnects

Coffee, 10.15 – 10.45

Session Fr02: 10.45 – 11.30 **Mesoscopic Phenomena in Nanostructured Materials & Devices II (Chair: Roman Sobolewski, University of Rochester, USA)**

10.45 – 11.00: E. G. Idrisov[1], I. P. Levkivskyi[2], and E. V. Sukhorukov[1]
[1] Département de Physique Théorique, Université de Genève, Genève, Switzerland, [2] Theoretische Physik, ETH Zurich, Zurich, Switzerland
Thermal decay of charge fluctuations in mesoscopic circuits

11.00 – 11.15: J. J. Heremans[1], Y. Xie[1], and C. Le Priol[2]
[1] Department of Physics, Virginia Tech, Virginia, USA, [2] Department of Physics, Ecole Polytechnique, Palaiseau, France
Geometrical dependence of quantum decoherence by electron-electron scattering in InGaAs mesoscopic systems

11.15 – 11.30: J. D. Vasquez Jaramillo, H. Hammar, and J. Fransson
Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden
Magnetic non-equilibrium control of heat and charge transport properties in paramagnetic molecular dimer

Concluding Remarks, 11.30 – 12.15

POSTER SESSION I: MONDAY, JULY 17th, 17:15 – 19:30

MoP01: T. Hoshino and N. Mori
Division of Electronic and Information Engineering, Osaka University, Osaka, Japan
Effects of dipole scattering on electron transport in gallium nitride-based HEMT

MoP02: G. I. Syngayivska[1], V. V. Korotyeyev[1], V. A. Kochelap[1], and L. Varani[2]
[1] Institute of Semiconductor Physics, NAS of Ukraine, Ukraine, [2] Institut d'Electronique et des Systèmes (CNRS UMR 5214), University of Montpellier, Montpellier, France
Drift and diffusion high-field magneto-transport in GaN

MoP03: A. L. Asatryan, A. G. Stepanyan, and A. L. Vartanian
Department of Solid State Physics, Yerevan State University, Yerevan, Armenia
Influence of electric field on the energy-loss rate of hot electrons via confined acoustic phonon modes in an embedded cylindrical quantum wire

MoP04: O. Muscato
Department of Mathematics and Computer Science, University of Catania, Catania, Italy
Efficient Monte Carlo-based algorithms for the Wigner transport equation

MoP05: H. Li[1,3,4], Z. Zhang[2], Y. Liu[1,3,4], X. Zheng[5,6], and T. Jiang[1,3,4,5]
[1] National University of Defense Technology, Changsha, China, [2] Center for Nanochemistry (CNC), Beijing National Laboratory for Molecular Sciences, Peking University, Beijing, China, [3] Hunan Provincial Key Laboratory of High Energy Laser Technology, Changsha, China, [4] Hunan Provincial Collaborative Innovation Center of High Power Fiber Laser, Changsha, China, [5] Interdisciplinary Center of Quantum Information, National University of Defense Technology, Changsha, China, [6] State Key Laboratory of High Performance Computing, National University of Defense Technology, China
Ultrafast interfacial energy transfer and interlayer excitons between monolayer WS_2 and $CsPbBr_3$ quantum dots

MoP06: V. A. Petrov and A. V. Nikitin
Institute of Radio Engineering and Electronics, Russian Academy of Science, Moscow, Russia
Influence of electron interference effects on reflection of electron waves from potential barrier in 2D semiconductor nanostructures

MoP07: J. Larroque, B. Davier, P. Dollfus, and J. Saint-Martin
C2N UMR 9001, CNRS, Univ. Paris-Sud, Université Paris-Saclay, Orsay, France
"*Full-band*" *modeling of phonon transport in polytype cubic/hexagonal Ge and Si structures*

MoP08: Y. Akbas[1], T. Plecenik[2], P. Ďurina[2], A. Plecenik[2], G. Wicks[1], and R. Sobolewski[1]
[1] University of Rochester, Rochester, USA, [2] Comenius University, Bratislava, Slovakia
Low-temperature performance of semiconducting asymmetric nano-channel diodes

MoP09: M. Koyama[1], Y. Kinoshita[1], M. Tatsumi[1], T. Maemoto[1], S. Sasa[1], S. Hamauchi[2], I. Kawayama[2], and M. Tonouchi[2]
[1] Nanomaterials and Microdevices Research Center, Osaka Institute of Technology, Osaka, Japan, [2] Institute of Laser Energy, Osaka University, Japan
Study for enhancement of terahertz radiation using GaSb/InAs heterostructures

MoP10: R. Paquet[1], B. Chomet[1], S. Blin[1], M. Myara[1], G. Beaudoin[2], I. Sagnes[2], L. Varani[1], and A. Garnache[1]
[1] Institute of Electronics and Systems, CNRS UMR 5214, University of Montpellier, France, [2] Laboratory of Photonics and Nanostructures, CNRS UPR 20, Marcoussis, France
Coherent & tunable THz source

MoP11: A. V. Galeeva[1], A. I. Artamkin[1], S. A. Dvoretskiy[2], N. N Mikhailov[2], S. N. Danilov[3], L. I. Ryabova[4], and D.R. Khokhlov[1,5]
[1] Faculty of Physics, M. V. Lomonosov Moscow State University, Moscow, Russia, [2] Rzhanov Institute of Semiconductor Physics, Novosibirsk, Russia, [3] Regensburg University, Regensburg, Germany, [4] Faculty of Chemistry, M. V. Lomonosov Moscow State University, [5] P.N. Lebedev Physical Institute, Moscow, Russia
Terahertz photoconductivity in $Hg_{1-x}Cd_xTe$ Films with with direct and inverted energy spectrum

MoP12: V. Gružinskis[1], E. Starikov[1], P. Shiktorov[1], S. Ašmontas[1], A. Sužiedelis[1], C. Palermo[2], J. Torres[2], C. Consejo[3], and L. Varani[2]
[1] Electron. Dep., National Center for Phys. Sci. and Technol., Vilnius, Lithuania, [2] Institute of Electronics and Systems, University of Montpellier, France, [3] Laboratoire Charles Coulomb, University of Montpellier, France
Monte Carlo Simulation of Enhanced THz Radiation Detection in GaN MOSFETs with uncentered gate

MoP13: D. Yang[1,2,3], X. Chen[1,2,3], and T. Jiang[1,2,3,4]
[1] College of Optoelectronic Science and Engineering, National University of Defense Technology, Changsha, China, [2] Hunan Provincial Key Laboratory of High Energy Laser Technology, Changsha, China, [3] Hunan Provincial Collaborative Innovation Center of High Power Fiber Laser, Changsha, China, [4] State Key Laboratory of High Performance Computing, National University of Defense Technology, Changsha, China
Optically controlled terahertz modulator based on liquid-exfoliated WS_2 nanosheets

MoP14: J. J. Heremans[1], Y. Xie[1], S. Vijeyaragunathan[2], T. D. Mishima[2], and M. B. Santos[2]
[1] Department of Physics, Virginia Tech, USA, [2] Homer L. Dodge Dept. of Physics & Astronomy, The University of Oklahoma, USA
Ballistic quantum interference in self-focusing elliptic potential wall arrays

MoP15: R. Somphonsane[1], H. Ramamoorthy[2], G. He[2], J. Nathawat[2], C.-P. Kwan[3], N. Arabchigavkani[3], Y.-H. Lee[2], J. Fransson[4], and J. P. Bird[2,5]
[1] Department of Physics, King Mongkut' s Institute of Technology Ladkrabang, Thailand, [2] Department of Electrical Engineering, University at Buffalo, USA, [3] Department of Physics, University at Buffalo, USA, [4] Department of Physics and Astronomy, Uppsala University, Uppsala, Sweden, [5] Graduate School of Advanced Integration Science, Chiba University, Japan
Quenching weak localization in graphene by the application of a nonequilibrium voltage

MoP16: Y. Yin[1], Z. Wang[1], S. Wang[1], Y. Bai[1], Z. Jiang[1], and Z. Zhong[1,2]
[1] State Key Laboratory of Surface Physics and Department of Physics, Fudan University, Shanghai, China, [2] Collaborative Innovation Center of Advanced Microstructures, Nanjing, China
Unique electrostatic effect of Au nanoparticles on near-infrared photoluminescence from Si/SiGe due to metal/semiconductor nano-contact

MoP17: A. Mielnik-Pyszczorski, K. Gawarecki, and P. Machnikowski
Department of Theoretical Physics, Wrocław University of Science and Technology, Wrocław, Poland
Effective mass equation for a nanostructure: a derivation from the 8-band k·p theory and assessment of accuracy

MoP18: K. Gawarecki and P. Machnikowski
Department of Theoretical Physics, Wrocław University of Science and Technology, Wrocław, Poland
Fine structure of carrier states in a self-assembled InGaAs quantum dot

MoP19: D. Kaur[1], L. Mourokh[1], and R. H. Blick[2]
[1] Physics Department, Queens College of CUNY, USA, [2] Center for Hybrid Nanostructures (CHyN) and Institutes of Nanostructure and Solid State Physics, University of Hamburg, Germany
Stochastic resonance in a proton pumping Complex I of mitochondria membranes

MoP20: V. S. Nair[1,3], S. Sreelatha[2], M. Hatamimoslehabadi[3], and C. Yelleswarapu[3]
[1] Department of Physics, N. S. S. College Pandalam, Kerala, India, [2] Department of Chemistry, N. S. S. College Pandalam, [3] Department of Physics, University of Massachusetts Boston, USA
Optoelectronic and photoacoustic studies of an organic dye synthesized through green route

MoP21: F. Hashimoto and N. Mori
Division of Electrical, Electronic and Information Engineering, Osaka University, Japan
Inter-layer coupling effects on ballistic electron transport in multilayer graphene

MoP22: F. Vandrevala[1], A. Karmakar[1], J. M. Jornet[1], and E. Einarsson[1,2]
[1] Department of Electrical Engineering, University at Buffalo, USA, [2] Department of Materials Design and Innovation, University at Buffalo, USA
Determining optical properties of graphene using terahertz time-domain spectroscopy for plasmonic applications

MoP23: T. Komatsu[1], V. Ryzhii[1], T. Otsuji[1], D. Svintsov[2], and A. Satou[1]
[1] Research Institute of Electrical Communication, Tohoku University, Japan, [2] Laboratory of 2D Materials' Optoelectronics, Moscow Institute of Physics and Technology, Russia
Temperature-dependent broadening of carrier energy dispersion in graphene by electron-electron interaction and its effect on Auger scatterings

MoP24: C. Chuang[1], M. Mineharu[1], N. Matsumoto[1], M. Matsunaga[1], C.-W. Liu[2], B.-Y. Wu[2], G.-H. Kim[3], L.-H. Lin[4], Y. Ochiai[1], K. Watanabe[5], T. Taniguchi[5], Dinesh Kumar[2], C.-T. Liang[2], and N. Aoki[1]
[1] Graduate School of Advanced Integration Science, Chiba University, Japan, [2] Graduate Institute of Applied Physics, National Taiwan University, Taiwan, [3] School of Electronic & Electrical Engineering, Sungkyunkwan University, Korea, [4] Department of Electrophysics, National Chiayi University, Chiayi, Taiwan, [5] Advanced Materials Laboratory, National Institute for Materials Science, Tukuba, Japan
Hot carriers in disordered graphene with hexagonal-boron Nitride and multi-layer graphene

MoP25: J. A. Delgado Notario[1], V. Clericó[1], T. Otsuji[2], J. E. Velázquez-Pérez[1], Y. M. Meziani[1], and E. Diez[1]
[1] NanoLab, Salamanca University, Salamanca, Spain, [2] Research Institute of Electrical Communication, Tohoku University, Sendai, Japan
hBN/graphene devices: Fabrication and characterization

MoP26: J. M. Iglesias[1], E. M. Hamham[1], M. J. Martín[1], E. Pascual[1], P. C. Feijoo[2], F. Pasadas[2], D. Jiménez[2], and R. Rengel[1]
[1] Department of Applied Physics, University of Salamanca, Spain, [2] Departament d'Enginyeria Electrònica, Universitat Autònoma de Barcelona, Spain
Graphene encapsulated on h-BN: an analysis of mobility and saturation velocity for GFET operation

MoP27: Z. Zafar and Y. You
Ordered Matter Science Research Center, Southeast University, Nanjing, China
Polarization induced optical and electrical control of 2D materials by ferroelectrics

MoP28: X. Zhang[1], V. Mitin[1], A. Sergeev[2], K. Sablon[2], M. Yakimov[3], S. Oktyabrsky[3], J. K. Choi[4], and G. Strasser[5]
[1] Department of Electrical Engineering, University at Buffalo, USA, [2] U.S. Army Research Laboratory, MD, USA, [3] SUNY Polytechnic Institute, Albany, USA, [4] Memory R&D Division, SK Hynix, Korea, [5] Center for Micro- and Nanostructures, TU Vienna, Austria
Nanoscale engineering of photoelectron processes in quantum well and dot structures

MoP29: G. O. Osayemwenre, E. L. Meyer, and R. T. Taziwa
Fort Hare Institute of Technology, University of Fort Hare, Eastern Cape, South Africa
Focused ion beam imaging of induced defects in polycrystalline silicon solar cells

MoP30: G. Thorgilsson, S. I. Erlingsson, and A. Manolescu
School of Science and Engineering, Reykjavik University, Reykjavik, Iceland
Thermoelectric current reversal in tubular nanowires

MoP31: M. Gorfien[1], X. Wang[2], L. Chen[3], J. Yu[3], H. Wang[4], J. Zhao[4], and J. Cao[1,3]
[1] Department of Physics and National High Magnetic Field laboratory, Florida State University, USA, [2] Institute of Physics, Chinese Academy of Sciences, Beijing, China, [3] School of Physics and Astronomy, Shanghai Jiao Tong University, Shanghai, China, [4] Institute of Semiconductor, Chinese Academy of Sciences
Nanoscale thermal transport across the GaAs/AlGaAs interface

MoP32: J. Dyrkacz and K Walczak
Department of Chemistry and Physical Sciences, Pace University, New York, USA
Nanoscale heat conduction with noise generated by acoustic phonons

MoP33: D. Saroka and K Walczak
Department of Chemistry and Physical Sciences, Pace University, New York, USA
Tunneling of heat: temperature-dependent transport characteristics

MoP34: S. A. O. Motlagh, J.-S. Wu, V. Apalkov, and M. I. Stockman
Georgia State University, Atlanta, GA, USA
Ultrafast control of electron dynamics in 3D topological insulator

POSTER SESSION II: TUESDAY, JULY 18th, 17:15 – 19:30

TuP01: O. Muscato[1], T. Castiglione[1], and A. Coco[2]
[1] Department of Mathematics and Computer Science, University of Catania, Catania, Italy, [2] Department of Mechanical Engineering and Mathematical Sciences, Oxford Brookes University, Oxford, UK
Hydrodynamic modeling of electron transport in silicon quantum wires

TuP02: G. F. Quinteiro[1,2], D. E. Reiter[2], and T. Kuhn[2]
[1] Departamento de Física and IFIBA, Universidad de Buenos Aires, Buenos Aires, Argentina, [2] Institut für Festkörpertheorie, Westfälische Wilhelms-Universität Münster, Münster, Germany
Magnetic-optical transitions in quantum dots induced by twisted light

TuP03: H. D. Kim[1], A. Murayama[1], K. Kyhm[2], R. A. Taylor[3], and J. S. Kim[4]
[1] Graduate School of Information Science and Technology, Hokkaido University, Japan, [2] Department of Opto-mechtronics and Cogno-mechntronics, RCDAMP, Pusan National University, Korea, [3] Clarendon Laboratory, Department of Physics, University of Oxford, UK, [4] Department of Physics, Yeungnam University, Gyeongsan, Korea
Optically coupled excitons in a single coupled-quantum-dot structure via dipole-dipole interaction

TuP04: M. Syperek[1], J. Andrzejewski[1], W. Rudno-Rudziński[1], A. Maryński[1], G. Sęk[1], J. Misiewicz[1], J. P. Reithmaier[2], A. Somers[3], and S. Höfling[3]
[1] Department of Experimental Physics, Wrocław University of Science and Technology, Wrocław, Poland, [2] Institute of Nanostructure Technologies and Analytics, Universitaet Kassel, Kassel, Germany, [3] Technische Physik, University of Würzburg and Wilhelm-Conrad-Röntgen-Research Center for Complex Material, Würzburg, Germany
Carrier dynamics in semiconductor quantum dots coupled to a quantum well

TuP05: A. Maryński[1], M. Syperek[1], M. Pieczarka[1], J. Misiewicz[1], V. Liverini[2], M. Beck[2], J. Faist[2], and G. Sęk[1]
[1] Laboratory for Optical Spectroscopy of Nanostructures, Wrocław University of Science and Technology, Wrocław, Poland, [2] Institute of Quantum Electronics, ETH Zürich, Zürich, Switzerland
Electronic structure and carrier dynamics in InAs on InP quantum dots tailored by confinement barrier modification

TuP06: H. Takeuchi, S. Asai, and M. Nakayama
Department of Applied Physics, Osaka City University, Osaka, Japan
Screening effects of photogenerated carriers on terahertz radiation from coherent GaAs-like longitudinal optical phonons in (11n)-oriented GaAs/$In_{0.1}Al_{0.9}As$ strained multiple quantum wells

TuP07: J. Vyšniauskas[1], A. Lisauskas[1,2], M. Bauer[2], D. Čibiraitė[2], J. Matukas[1] and H. G. Roskos[2]
[1] Radiophysics Department, Vilnius University, Vilnius, Lithuania, [2] Physikalisches Institut, Goethe-Universität Frankfurt, Germany
Hydrodynamic modelling of terahertz rectification in AlGaN/GaN high electron mobility transistors

TuP08: M. Nafari[1], G. Aizin[2], and J. M. Jornet[1]
[1] Department of Electrical Engineering, University at Buffalo, USA, [2] Kingsborough College, The City University of New York, USA
Numerical Studies of the Plasma Wave Instability in Gated Two-dimensional Electron Channels for On-chip THz Signal Generation

TuP09: G. Chen[1], R. Shrestha[1], A. Jukna[1,2], A. Korliov[1,3], C. Richter[4], and R. Sobolewski[1]
[1] University of Rochester, Rochester, USA, [2] Vilnius Gediminas Technical University, Vilnius, Lithuania, [3] Centre for Physical Sciences and Technology, Vilnius, Lithuania, [4] Rochester Institute of Technology, Rochester, NY, USA
THz time-domain spectroscopy characterization of carbon nanostructures

TuP10: H. Wang[1,2], R. Knepper[2], N. Hossain[1], P. Marthi[1], J.-F. Millithaler[1] and M. Margala[1]
[1] Department of Electrical and Computer Engineering, University of Massachusetts, Lowell, USA, [2] Department of Electrical and Computer Engineering, Boston University, Boston, USA
A design of terahertz parallel plate dielectric waveguide with signal line inserted for ballistic deflection transistor travelling wave amplifier

TuP11: K. Kushnir[1], K. Chen[2], P. M. Rao[2], and L. V. Titova[1]
[1] Department of Physics, Worcester Polytechnic Institute, Worcester, USA, [2] Department of Mechanical Engineering, Worcester Polytechnic Institute, Worcester, USA
Carrier dynamics and the role of grain boundaries in polycrystalline PbS films

TuP12: C. P. Kwan[1], M. Street[2], A. Mahmood[2], W. Echtenkamp[2], J. Nathawat[3], N. Arabchigavkani[1], M. Zhao[3,4], B. Barut[1], S. Yin[3], M. Randle[3], U. Singisetti[3], Ch. Binek[2] and J. P. Bird[3]
[1] Department of Physics, University at Buffalo, USA, [2] Department of Physics and Astronomy, University at Nebraska- Lincoln, USA, [3] Department of Electrical Engineering, University at Buffalo, USA, [4] Microwave Devices and Integrated Circuit Department, Key Laboratory of Microelectronics Device & Integrated Technology, Institute of Microelectronics of the Chinese Academy of Science, Beijing, PR China
Electrical evaluation of epitaxial chromia thin films by pulsed laser deposition for spintronic device application

TuP13: J. Fu[1,2], P. H. Penteado[1,3], M. O. Hachiya[2], D. Loss[4], and J. Carlos Egues[2]
[1] Instituto de Fisica, Universidade de Brasilia, Brasil, [2] Instituto de Física de São Carlos, Universidade de São Paulo, Brasil, [3] Department of Physics and Astronomy, University of California, USA, [4] Department of Physics, University of Basel, Switzerland
Persistent skyrmion lattice of non-interacting electrons with spin-orbit coupling

TuP14: A. Vartanian, A. Kirakosyan, and K. Vardanyan
Department of Solid State Physics, Yerevan State University, Yerevan, Armenia
One-dimensional Fröhlich polaron with Rashba and Dresselhaus spin-orbit coupling

TuP15: D. Chu[1], C.-S. Park[1], J. Lee[2], Y. Shon[2], and E. K. Kim[1]
[1] Department of Physics, Hanyang University, Seoul, Korea, [2] Quantum-functional Semiconductor Research Center, Dongguk University, Seoul, Korea
High performance memory device with vertical structures of MGr/hBN/WS_2 layers

TuP16: Y. Liu, X. Zheng, and T. Jiang
College of Optoelectronic Science and Engineering, National University of Defense Technology, Changsha, China
Giant photoluminescence improvement in monolayer WS_2 *by charge transfer to* $PC_{61}BM$

TuP17: T. Kuroda and N. Mori
Division of Electronic and Information Engineering, Osaka University, Osaka, Japan
Nonequilibrium green function simulations of band-to-band tunneling in in-plane MoS_2/WS_2 heterostructures

TuP18: N. Myoung[1], H. C. Park[1], and S. J. Lee[2]
[1] Center for Theoretical Physics of Complex Systems, Institute for Basic Science, Daejeon, Korea, [2] Quantum-functional Semiconductor Research Center, Dongguk University, Seoul, Korea
Vertical heterostructure of ferromagnetic graphene with gate-voltage tunable spin transport

TuP19: W. Zhou[1], H. Liu[2], H. Kataura[3], and S. Takeyama[4]
[1] National High Magnetic Field Center, Huazhong University of Science and Technology, Wuhan, China, [2] Institute of Physics, Chinese Academy of Sciences, Beijing, China, [3] National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan, [4] Institute for Solid State Physics, University of Tokyo, Japan
Relative ordering between bright and dark excitons in single-walled carbon nanotubes

TuP20: W. Sheng
Department of Physics, Fudan University, Shanghai, China
Tuning of exciton binding energy in graphene nanoflakes by dielectric environments

TuP21: F. Qu, D. Oliveira, L. Villegas-Lelovsky, and J. Fu
Institute of Physics, University of Brasilia, Brasilia, Brazil
Usual and unusual oscillations of valley polarized magnetoexciton and charged exciton absorption in MoS_2 quantum rings

TuP22: K. G. Dvoyan, A. A. Tshantshapanyan, and B. Vlahovic
Department of Mathematics and Physics, North Carolina Central University, Durham, USA
Positronium in an elliptical semiconductor quantum dot with Kane's dispersion law

TuP23: M. Zhao[1,2], J. Nathawat[2], C.-P. Kwan[3], H. Ramamoorthy[2], N. Matsumoto[4], M. Matsunaga[4], N. Aoki[4], Z. Jin[1], G.-H. Kim[5], K. Watanabe[6], T. Taniguchi[6], J. Han[3], and J. P. Bird[2,4]
[1] High-Frequency High-Voltage Device and Integrated Circuits Center, Institute of Microelectronics of Chinese Academy of Sciences, Beijing, China, [2] Department of Electrical Engineering, University at Buffalo, USA, [3] Department of Physics, University at Buffalo, USA, [4] Graduate School of Advanced Integration Science, Chiba University, Chiba, Japan, [5] School of Electronic Electrical Engineering and Sungkyunkwan Advanced Institute of Nanotechnology, Sungkyunkwan University, Korea, [6] Advanced Materials Laboratory, National Institute for Materials Science, Tsukuba, Japan
Transient investigations of hot-carrier transport in BN-encapsulated graphene FETs

TuP24: T. Yamanaka[1], K. Kamiya[1], M. Matsunaga[1], A. Higuchi[1], Y. Ochiai[1], M. Kida[1], K. Miyamoto[1], T. Omatsu[1], J. P. Bird[2], and N. Aoki[1]
[1] Graduate School of Advanced Integration Science, Chiba University, Chiba, Japan, [2] Department of Electrical Engineering, University at Buffalo, USA
Structural and electrical control of multilayer $MoTe_2$ crystal by laser irradiation

TuP25: F. Lu[1], A. Karmakar[1], S. Shahi[1], and E. Einarsson[1,2]
[1] Department of Electrical Engineering, University at Buffalo, USA, [2] Department of Materials Design and Innovation, University at Buffalo, USA
Localized growth of transition metal dichalcogenides on patterned graphene

TuP26: C. Zhao[1], P. Zhang[1], T. Norden[1], R. Sabirianov[2], A. Petrou[1], and H. Zeng[1]
[1] Physics Department, University at Buffalo, USA, [2] University of Nebraska-Omaha, USA
Valley splitting induced by exchange field in monolayer TMDCs

TuP27: H. Sun[1,2], L. Fang[1,2], and T. Jiang[1,3]
[1] State Key Laboratory of High Performance Computing, National University of Defense Technology, Changsha, China, [2] College of Computer, National University of Defense Technology, Changsha, China, [3] College of Optoelectronic Science and Engineering, National University of Defense Technology, Changsha, China
High performance photovoltaic detectors based on topological insulator Sb_2Te_3/STO heterostructure grown by molecular beam epitaxy

TuP28: A. Zafar and Z. Ni
Department of Physics and Key Laboratory of MEMS of the Ministry of Education Southeast University, Nanjing, China
Probing the intrinsic optical quality of CVD grown MoS_2

TuP29: A. V. Stier[1], N. P. Wilson[2], X. Xu[2,3], J. Kono[4,5,6], and S. A. Crooker[1]
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2D excitons in high-pulsed magnetic fields

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Topological phase transitions in HgCdTe heterostructures probed by terahertz spectroscopy

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Ultrafast carrier photoexcitation and relaxation in core-shell III-V nanowire structures

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Ultrafast phonon-assisted exciton transfer in carbon nanotube films

TuP33: G. Osayemwenre, E. Meyer, R. Taziwa, and S. Mamphweli
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Investigation of defects in crystalline silicon solar cells by confocal Raman spectroscopy

TuP34: I. Siloi[1], C. Benedetti[2], E. Piccinini[3], J. Piilo[1], S. Maniscalco[1], M. G. A. Paris[2,4,5] and P. Bordone[5,6]
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Quantum walks of two interacting particles in a classical noisy environment

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Nanoscale heat conduction with noise generated by acoustic phonons