Program

Oral Sessions

December 2 (Mon)

(8:50-9:00)
Opening Remarks

Session Mon-A1: Spins in Diamonds

Mon-A1-1 (9:00-9:30)
Diamond spin qubits: quantum sensing and photoelectric readout (Invited)
F. Jelezko
Institute of Quantum Optics, Ulm University

Mon-A1-2 (9:30-9:45)
Quantum sensing with ultra-long coherence times of NV centers in diamond
E. D. Herbschleb[1], H. Kato[2], T. Makino[2], S. Yamasaki[2], I. Ohki[1], K. Hayashi[1], H. Morishita[1], M. Fujiwara[1], Y. Matsuzaki[2], and N. Mizuochi[1]
[1]*Institute for Chemical Research, Kyoto University,* [2]*National Institute of Advanced Industrial Science and Technology*

Mon-A1-3 (9:45-10:00)
Optical outlook of the germanium–vacancy center in diamond
M. Hanks[1], W. J. Munro[2,1], and K. Nemoto[1]
[1]*National Institute of Informatics,* [2]*NTT Basic Research Laboratories & NTT Research Center for Theoretical Quantum Physics, NTT Corporation*

Mon-A1-4 (10:00-10:15)

Electronic spin manipulation of NV centers in diamond for highly-sensitive magnetic field sensing

J. Ishi-Hayase[1,2], T. Yamaguchi[1], Y. Matsuzaki[3], S. Saito[3], H. Watanabe[4], and N. Mizuochi[5]

[1]*School of Fundamental Science and Technology, Keio University,* [2]*Center for Spintronics Research Network, Keio University,* [3]*NTT Basic Research Laboratories,* [4] *Electroinformatics Group, Nanoelectronics Research Institute, National Institute of Advanced Industrial Science and Technology (AIST),* [5]*Institute for Chemical Research, Kyoto University*

Mon-A1-5 (10:15-10:30)

How to detect qubit-environment entanglement in pure dephasing evolutions

K. Roszak[1], D. Kwiatkowski[2], and Ł. Cywiński[2]

[1]*Department of Theoretical Physics, Wrocław University of Science and Technology,* [2]*Institute of Physics, Polish Academy of Sciences*

Coffee Break

Session Mon-A2: 2D and Topological Materials

Mon-A2-1 (11:00-11:30)

Synthetic topological hybrid quantum many-body systems with 2D materials (Invited)

P. Hawrylak

Department of Physics, University of Ottawa

Mon-A2-2 (11:30-11:45)

Atomistic Green function simulation of thermal conductance in isotopically disordered armchair-edge graphene nanoribbons

N. Mori, T. Kamioka, and G. Milnikov

Graduate School of Engineering, Osaka University

Mon-A2-3 (11:45-12:00)

Nonlinear terahertz responses of Dirac electrons in $Bi_{1-x}Sb_x$ nano-films

I. Katayama[1], T. Hagiwara[1], H. Kawakami[1], K. Asakawa[1,2], Y. Arashida[1,3], Y. Minami[4], O. S. Handegard[5,6], T. Nagao[5,6], and J. Takeda[1]

[1]*Graduate School of Engineering Science, Yokohama National University,* [2]*Department of Applied Physics, Tokyo University of Agriculture and Technology,* [3]*Faculty of Pure and Applied Sciences, University of Tsukuba,* [4]*Institute of Post-LED Photonics, Tokushima University,* [5]*National Institute for Materials Science (NIMS),* [6]*Faculty of Science, Hokkaido University*

Mon-A2-4 (12:00-12:15)

Proximity-induced quantum anomalous Hall effect in (Zn,Cr)Te/$(Bi,Sb)_2Te_3$/ (Zn,Cr)Te heterostructure film

R. Watanabe[1], R. Yoshimi[2], M. Kawamura[2], M. Mogi[1], A. Tsukazaki[3], X. Yu[2], K. Nakajima[2], K. S. Takahashi[2], M. Kawasaki[1,2], and Y. Tokura[1,2,4]

[1]*Department of Applied Physics and Quantum-Phase Electronics Center (QPEC), University of Tokyo,* [2]*RIKEN Center for Emergent Matter Science,* [3]*Institute for Materials Research, Tohoku University,* [4]*Tokyo College, University of Tokyo*

Conference Photo

Lunch Break

Session Mon-P1: Nanomechanics and Phononics

Mon-P1-1 (13:30-14:00)

Super-high-frequency exciton-polariton optomechanics (Invited)

P. V. Santos

Paul-Drude-Institut für Festkörperelektronik, Leibniz-Institut im Forschungsverbund Berlin e. V.

Mon-P1-2 (14:00-14:15)

Demonstration of hypersonic phononic crystals and their potential application to spinmechanics

D. Hatanaka, Y. Kunihashi, H. Sanada, and H. Yamaguchi

NTT Basic Research Laboratories

Mon-P1-3 (14:15-14:30)

Mode coupling and giant enhancement in thermal responsivities of doubly clamped GaAs MEMS beam resonators in a large-amplitude driving regime

R. Kondo[1], B. Qiu[1], Y. Zhang[2], N. Nagai[1], K. Kuroyama[1], and K. Hirakawa[1]

[1]*Institute of Industrial Science/INQIE, University of Tokyo,* [2]*Tokyo University of Agriculture and Technology*

Mon-P1-4 (14:30-14:45)

Strong thermomechanical squeezing with nonlinear measurement and feedback

M. Asano[1], T. Aihara[2], T. Tsuchizawa[2], and H. Yamaguchi[1]

[1]*NTT Basic Research Laboratories,* [2]*NTT Device Technology Laboratories*

Mon-P1-5 (14:45-15:00)

Temperature and entropy production rate of a single-mode Gaussian state under quantum Markovian and non-Markovian dynamics

T. Aoki[1,2] and Y. Matsuzaki[1]

[1]*Nanoelectronics Research Institute, National Institute of Advanced Industrial Science and Technology (AIST),* [2]*Department of Physics, Graduate School of Science, The University of Tokyo*

Mon-P1-6 (15:00-15:15)

Thermal transport by surface phonon-polaritons in SiN nanomembranes

Y. Wu[1], J. Ordonez-Miranda[2], S. Gluchko[1,3], R. Anufriev[1], S. Volz[1,3], and M. Nomura[1,3]

[1]*Institute of Industrial Science, The University of Tokyo,* [2]*Institut Pprime, CNRS, Université de Poitiers,* [3]*Laboratory for Integrated Micro Mechatronic Systems/National Center for Scientific Research-Institute of Industrial Science (LIMMS/CNRS-IIS), The University of Tokyo*

Mon-P1-7 (15:15-15:30)

Evaporative electron cooling in asymmetric double barrier semiconductor heterostructures: experimental analysis and numerical optimization

M. Bescond[1], A. Yangui[1], T. Yan[2], N. Nagai[2], and K. Hirakawa[1,2]

[1]*LIMMS-CNRS at the University of Tokyo,* [2]*Institute of Industrial Science and INQIE, University of Tokyo*

Coffee Break

Session Mon-P2: Electron and Nuclear Spin Manipulation

Mon-P2-1 (16:00-16:30)

Deterministic quantum interface between a single spin qubit and a mesoscopic nuclear ensemble (Invited)

C. Le Gall

Cavendish Laboratory, University of Cambridge

Mon-P2-2 (16:30-16:45)

Efficient method to detect single spin with quantum entanglement

H. Hakoshima and Y. Matsuzaki

National Institute of Advanced Industrial Science and Technology (AIST)

Mon-P2-3 (16:45-17:00)

Spin splitting induced by spin-orbit interaction in a double-layer quantum point contact

D. Terasawa[1], S. Norimoto[2], T. Arakawa[2,3], M. Ferrier[2,4], A. Fukuda[1], K. Kobayashi[2,5], and Y. Hirayama[6]

[1]*Department of Physics, Hyogo College of Medicine,* [2]*Graduate School of Science, Department of Physics, Osaka University,* [3]*Center for Spintronics Research Network, Osaka University,* [4]*Laboratoire de Physique des Solides, CNRS, Université Paris-Sud, Université Paris Saclay,* [5]*Institute for Physics of Intelligence and Department of Physics, The University of Tokyo,* [6]*Graduate School of Science, Department of Physics, Tohoku University*

Mon-P2-4 (17:00-17:15)

Negative-temperature-state relaxation and reservoir-assisted quantum entanglement generation in double-spin-domain systems

Y. Hama[1], E. Yukawa[2], W. J. Munro[3,1], and K. Nemoto[1]

[1]*National Inst. of Informatics,* [2]*RIKEN Center for Emergent Matter Science (CEMS),* [3]*NTT Basic Research Laboratories and Research Center for Theoretical Quantum Physics, NTT Corporation*

Mon-P2-5 (17:15-17:30)

How should we derive the noise spectrum from multiple spin-echo decays?

S. Sasaki[1,2], T. Miura[1], K. Ikeda[1], M. Sakai[1], T. Sekikawa[3], M. Saito[3], T. Yuge[4], and Y. Hirayama[5]

[1]*Department of Materials Science, Niigata University,* [2]*Japan Agency for Medical Research and Development,* [3]*Department of Physics, Niigata University,* [4]*Department of Physics, Shizuoka University,* [5]*Department of Physics, Tohoku University*

Mon-P2-6 (17:30-17:45)

Acoustic spin transport along sidewall quantum wires on GaAs (001) substrates

P. L. J. Helgers[1,2], H. Sanada[2], Y. Kunihashi[2], K. Biermann[1], and P. V. Santos[1]

[1]*Paul-Drude-Institut fur Festkorperelektronik, Leibniz-Institut im Forschungsverbund Berlin. e.V.,* [2]*NTT Basic Research Laboratories, NTT Corporation*

Late News

LN-1 (17:45-18:00)

Simulating complex quantum networks with time crystals

M. P. Estarellas[1], T. Osada[2,1], V. M. Bastidas[3], B. Renoust[4,1,5], K. Sanaka[2], W. J. Munro[3,1], and K. Nemoto[1,5]

[1]*National Institute of Informatics,* [2]*Tokyo University of Science,* [3]*NTT Basic Research Laboratories & Research Center for Theoretical Quantum Physics,* [4]*Osaka University,* [5]*Japanese-French Laboratory for Informatics, CNRS UMI 3527*

LN-2 (18:00-18:15)

Coupling an inverted spin ensemble to a microwave resonator

J. Ball[1], P. Moroshkin[1], S. Norimoto[1], D. Konstantinov[1], and Y. Kubo[1,2]

[1]*Okinawa Institute of Science and Technology,* [2]*PRESTO, JST*

Poster Session (18:15-20:00)

December 3 (Tue)

Session Tue-A1: Nanocarbon Structures and Devices

Tue-A1-1 (9:00-9:30)

Suspended nanocarbon devices in creation and sensing of condensed matter states (Invited)

P. Hakonen

Department of Applied Physics, Aalto University

Tue-A1-2 (9:30-9:45)

Nanorotor driven by spin injection

W. Izumida[1], R. Okuyama[2], K. Sato[3], M. Matsuo[4], and T. Kato[5]

[1]*Department of Physics, Tohoku University,* [2]*Department of Physics, Meiji University,* [3]*National Institute of Technology, Sendai College,* [4]*KITS, Univ. of Chinese Academy of Sciences,* [5]*ISSP, University of Tokyo*

Tue-A1-3 (9:45-10:00)

Charge dependent vibration of a single water molecule encapsulated in a C_{60} fullerene

S. Q. Du[1], Y. Hashikawa[2], I. Hamada[3], Y. Murata[2], and K. Hirakawa[1,4]

[1]*Institute of Industrial Science, University of Tokyo,* [2]*Institute for Chemical Research, Kyoto University,* [3]*Department of Precision Science and Technology, Osaka University,* [4]*Institute for Nano Quantum Information Electronics, University of Tokyo*

Tue-A1-4 (10:00-10:15)

Franck-Condon effect in transport through double quantum dot in carbon nanotube

R. Okuyama[1] and M. Eto[2]

[1]*Department of Physics, Meiji University,* [2]*Faculty of Science and Technology, Keio University*

Tue-A1-5 (10:15-10:30)

Highly coherent spin states in carbon nanotubes coupled to cavity photons

T. Cubaynes[1,2], M. Delbecq[1], M. Dartiailh[1], R. Assouly[1], M. M. Desjardins[1], L. Contamin[1], M. Rosticher[1], L. Bruhat[3], Z. Leghtas[1], A. Cottet[1], and T. Kontos[1]

[1]*Laboratoire de Physique de l'Ecole normale supérieure, ENS, Université PSL, CNRS, Sorbonne Université, Université Paris-Diderot, Sorbonne Paris Cité,* [2]*Physikalisches Institut, Karlsruhe Institute of Technology,* [3]*Microtechnology and nanoscience, Chalmers University of Technology*

Coffee Break

Session Tue-A2: Coherent Effects in Hybrid Quantum Systems

Tue-A2-1 (11:00-11:30)

Non-linear coherent effects in hybrid quantum systems (Invited)

W. J. Munro

NTT Basic Research Laboratories

Tue-A2-2 (11:30-11:45)

Higher order quantum operations of unitary blackboxes

Q. Dong, J. Miyazaki, M. Murao, A. Shimbo, A. Soeda, and M. T. Quintino

Department of Physics, Graduate School of Science, The University of Tokyo

Tue-A2-3 (11:45-12:00)

Quantum multiplexing for quantum error correction codes

N. Lo Piparo[1], M. Hanks[1], C. Gravel[1], W. J. Munro[1,2], and K. Nemoto[1]

[1]*National Institute of Informatics,* [2]*NTT Basic Research Laboratories, NTT Corporation*

Tue-A2-4 (12:00-12:15)

Attosecond quantum-path interferometry for electron-phonon coupled states in GaAs

Y. Kayanuma[1,2] and K. G. Nakamura[1]

[1]*Laboratory for Materials and Structures, Tokyo Institute of Technology,* [2]*Graduate School of Sciences, Osaka Prefecture University*

Tue-A2-5 (12:15-12:30)

Ultrafast electron manipulation on the nanoscale with phase-controlled near fields

J. Takeda[1], K. Yoshioka[1], K. Asakawa[1], Y. Arashida[1,2], and I. Katayama[1,2]

[1]*Graduate School of Engineering, Yokohama National University,* [2]*Faculty of Pure and Applied Sciences, University of Tsukuba*

Tue-A2-6 (12:30-12:45)

Nanofiber cavity quantum electrodynamics system for quantum networks

T. Aoki

Department of Applied Physics, Waseda University

Excursion (12:45-)

Banquet (18:00-20:00)

December 4 (Wed)

Session Wed-A1: Nanophotonics

Wed-A1-1 (9:00-9:30)
Toward "quantum supremacy" with single photons (Invited)
C. Y. Lu
University of Science and Technology of China

Wed-A1-2 (9:30-9:45)
Continuous quantum walk in 1-dimensional lattice structure based on a plasmonic waveguide
N. Namekata[1], D. Wu[2], S. Ohnuki[2], D. Fukuda[3], and S. Inoue[1]
[1]*Institute of Quantum Science, Nihon University,* [2]*Department of Electrical Engineering, College of Science and Technology, Nihon University,* [3]*National Institute of Advanced Industrial Science and Technology (AIST)*

Wed-A1-3 (9:45-10:00)
Parametrically amplified quantum vacuum in optomechanical cavity interacting with photonic radiation field
S. Tanaka and K. Kanki
Department of Physical Science, Osaka Prefecture University

Wed-A1-4 (10:00-10:15)
Higher-order Poincaré sphere beam generation via a micro ring resonator
W. Lin[1,2], Y. Ota[3], Y. Arakawa[3], and S. Iwamoto[1,2,3]
[1]*Research Center for Advanced Science and Technology, The University of Tokyo,* [2]*Institute of Industrial Science, The University of Tokyo,* [3]*Institute for Nano Quantum Information Electronics, The University of Tokyo*

Wed-A1-5 (10:15-10:30)
Dicke effect in photocurrent through an array of quantum dots
M. Eto[1] and R. Okuyama[2]
[1]*Faculty of Science and Technology, Keio University,* [2]*Department of Physics, Meiji University*

Coffee Break

Session Wed-A2: Quantum Transport I

Wed-A2-1 (11:00-11:30)

Quantum tomography of electrical currents (Invited)

G. Fève

Laboratoire de Physique de l'Ecole Normale Supérieure

Wed-A2-2 (11:30-11:45)

AC spectroscopy of the singlet-triplet spin-orbit gap in double quantum dots

G. Giavaras[1] and Y. Tokura[1,2]

[1]*Faculty of Pure and Applied Sciences, University of Tsukuba,* [2]*Tsukuba Research Center for Energy Materials Science (TREMS)*

Wed-A2-3 (11:45-12:00)

Real-time observation of spin-flip tunneling processes driven by a nearby phonon source

K. Kuroyama[1], S. Mastuo[2,3], S. R. Valentin[4], A. Ludwig[4], A. D. Wieck[4], Y. Tokura[5], and S. Tarucha[2]

[1]*The University of Tokyo,* [2]*Center for Emergent Matter Science, Riken,* [3]*PRESTO,* [4]*Ruhr-Universität Bochum,* [5]*Pure and Applied Sciences, University of Tsukuba*

Wed-A2-4 (12:00-12:15)

Fano-Kondo effect in double quantum dot in parallel

Y. Zhang[1], R. Sakano[2], and M. Eto[1]

[1]*Faculty of Science and Technology, Keio University,* [2]*Institute for Solid State Physics, University of Tokyo*

Wed-A2-5 (12:15-12:30)

Imaging of the quantum-Hall incompressible strip influenced by disorder

Y. Wang[1], K. Hashimoto[1,2], T. Tomimatsu[1], and Y. Hirayama[1,2,3]

[1]*Graduate School of Sciences, Tohoku University,* [2]*Centre for Spintronics Research Network, Tohoku University,* [3]*Center for Science and Innovation in Spintronics (Core Research Cluster), Tohoku University*

Lunch Break

Session Wed-P1: Quantum Transport II

Wed-P1-1 (13:30-13:45)

Effective potential shape in triple-gated quantum point contacts

M. Takahashi[1], M. H. Fauzi[2,3], K. Nagase[1], K. Sato[1], T. Aono[4], and Y. Hirayama[1,2,5]

[1]*Graduate School of Science, Tohoku University,* [2]*Center for Spintronics Reserch Network, Tohoku University,* [3]*Research Center for Physics, Indonesian Institute of Sciences,* [4]*Department of Electrical and Electronic Engineering, Ibaraki University,* [5]*The Center for Science and Innovation in Spintronics, Tohoku University*

Wed-P1-2 (13:45-14:00)

Gaussian disorder potential effect on electron transport through quantum point contacts

T. Aono[1], M. Takahashi[2], M. H. Fauzi[3,4], and Y. Hirayama[2,3,5]

[1]*Department of Electrical and Electronic Systems Engineering, Faculty of Engineering, Ibaraki University,* [2]*Department of Physics, Tohoku University,* [3]*Center for Spintronics Research Network, Tohoku University,* [4]*Research Center for Physics, Indonesian Institute of Sciences,* [5]*Center for Science and Innovation in Spintronics, Tohoku University*

Wed-P1-3 (14:00-14:15)

Observation of the Kondo screening cloud

M. Yamamoto[1], I. V. Borzenets[2], J. Shim[3], J. C. H. Chen[4], A. Ludwig[5], A. D. Wieck[5], S. Tarucha[1], and H.-S. Sim[3]

[1]*RIKEN Center for Emergent Matter Science,* [2]*Department of Physics, City University of Hong Kong,* [3]*Department of Physics, KAIST,* [4]*Department of Applied Physics, The University of Tokyo,* [5]*Lehrstuhl für Angewandte Festkörperphysik, Ruhr-Universität Bochum*

Wed-P1-4 (14:15-14:30)

A capacitively shunted flux qubit embedded in a 3D cavity

L. V. Abdurakhimov, I. Mahboob, H. Toida, K. Kakuyanagi, and S. Saito

NTT Basic Research Laboratories, NTT Corporation

Wed-P1-5 (14:30-14:45)

A superconducting flux qubit as a sensitive detector of electron spins in cultured neurons

H. Toida, K. Sakai, I. Mahboob, T. F. Teshima, K. Kakuyanagi, and S. Saito

NTT Basic Research Laboratories, NTT Corporation

Wed-P1-6 (14:45-15:00)

Anomalous Shapiro steps in Josephson junctions of ballistic InAs nanowires

K. Ueda[1], S. Matsuo[2], H. Kamata[3], Y. Sato[1], Y. Takeshige[1], K. Li[4], S. Jeppesen[5], L. Samuelson[5], H. Q. Xu[4,5], and S. Tarucha[2]

[1]*Graduate School of Engineering, University of Tokyo,* [2]*RIKEN,* [3]*CNRS,* [4]*Peking University,* [5]*Lund University*

Wed-P1-7 (15:00-15:15)

Spectroscopy of Andreev bound states using microwave resonators

R. S. Deacon[1,2], P. Zellekens[3,4], P. Perla[3,4], M. I. Lepsa[3,4], D. Grützmacher[3,4], T. Schäpers[3,4], and K. Ishibashi[2,1]

[1]*Advanced Device Laboratory, RIKEN,* [2]*Center for Emergent Matter Science, RIKEN,* [3]*Peter Grünberg Institute,* [4]*JARA-FIT, Fundamentals of Future Information Technology*

(15:15-15:30)

Closing

Poster Presentations (18:15-20:00, Monday, December 2)

P1

Photoluminescence quenching of monolayer transition Metal dichalcogenides on GaN surface

S. Mouri, Y. Komichi, U. Ooe, and T. Araki

Department of Science and Technology, Ritsumeikan University

P2

Effects of impurity concentration on electron transport in multilayer graphene

S. A. Mojtahedzadeh and N. Mori

Graduate School of Engineering, Osaka University

P3

Effects of inelastic scattering on inter-layer tunneling between vertically stacked semiconductor nanoribbons

T. Mishima, H. Tanaka, F. Hashimoto, and N. Mori

Graduate School of Engineering, Osaka University

P4

NEGF simulation of band-to-band tunneling in TMD heterojunctions

F. Hashimoto, H. Tanaka, and N. Mori

Graduate School of Engineering, Osaka University

P5

Strain analysis in graphene bulges for phonon engineering

K. Nakagawa[1], K. Satoh[2], S. Murakami[2], K. Takei[1], S. Akita[1], and T. Arie[1]

[1]*Department of Physics and Electronics, Osaka Prefecture University,* [2]*Osaka Research Institute of Industrial Science and Technology*

P6

Conditional emission of excitons in carbon nanotube coupled quantum dots

A. Hida[1] and K. Ishibashi[1,2]

[1]*Advanced Device Laboratory, RIKEN,* [2]*Center for Emergent Matter Science, RIKEN*

P7

The Librator: A new dynamical regime for nonlinear MEMS devices

S. Houri, D. Hatanaka, M. Asano, and H. Yamaguchi
NTT Basic Research Laboratories, NTT Corporation

P8 **(withdrawn)**

Single molecule thermal transistor

K. Kanki and S. Tanaka
Department of Physical Science, Osaka Prefecture University

P9

Applicability of small Josephson junction arrays as radiation detectors

T. Suzuki, G. M. Kanyolo, H. Nishigaki, Y. Mizugaki, and H. Shimada
Department of Engineering Science, The University of Electro-Communications

P10

Study on measurement of p-type silicon double quantum dots with FPGA

K. Tashiro, R. Mizokuchi, H. Wei, H. Takahashi, M. Hirayama, and T. Kodera
Department of Electrical and Electronic Engineering, Tokyo Institute of Technology

P11

Energy transport under quantum environmental engineering

Y. Kawamura[1], K. Hashimoto[1], and C. Uchiyama[1,2]
[1]*Faculty of Engineering, University of Yamanashi,* [2]*National Institute of Informatics*

P12

Spin-locking measurements utilizing local enhancement of microwave in the vicinity of micro-meter scale metal structures

Y. Obara[1], G. Mariani[1], S. Kashiwaya[2,3], and S. Nomura[1]
[1]*Division of Physics, University of Tsukuba,* [2]*Department of Engineering, Nagoya University,* [3]*National Institute of Advanced Industrial Science and Technology (AIST)*

P13

Room-temperature electrical detection of ^{14}N nuclear spin coherence of NV centers in diamond

H. Morishita[1], S. Kobayashi[1], M. Fujiwara[1], H. Kato[2], T. Makino[2], S. Yamasaki[2], and N. Mizuochi[1]

[1]*Institite of Chemical Research, Kyoto University,* [2]*Energy Technology Research Institute, National Institute of Advanced Industrial Science and Technology (AIST)*

P14

Extension of coherence time with dressed states of ensemble NV centres in diamond

S. Yamashita[1], H. Morishita[1], E. D. Herbschleb[1], N. Tokuda[2], and N. Mizuochi[1]

[1]*Institute for Chemical Research, Kyoto University,* [2]*Nanomaterials Research Institute, Kanazawa University*

P15

Fundamentals and applications to magnetic field sensing of electronic spin double-resonance of nitrogen-vacancy centers in diamond

T. Yamaguchi[1], Y. Matsuzaki[2], S. Saito[2], S. Saijo[1], H. Watanabe[3], N. Mizuochi[4], and J. Ishi-Hayase[1,5]

[1]*School of Fundamental Science and Technology, Keio University,* [2]*NTT Basic Research Laboratories, NTT Corporation,* [3]*Electroinformatics Group, Nanoelectronics Research Institute, National institute of Advanced Industrial Science and Technology (AIST),* [4]*Institute for Chemical Research, Kyoto University,* [5]*Center for Spintronics Research Network, Keio University*

P16

Contrast enhancement in optically-detected magnetic resonance of diamond nitrogen-vacancy centers in the vicinity of electrode

H. Uchiyama[1], S. Saijo[2], S. Kishimoto[1], J. Ishi-Hayase[2], and Y. Ohno[1,3]

[1]*Department of Electronics, Nagoya University,* [2]*School of Fundamental Science and Technology, Keio University,* [3]*Institute of Materials and Systems for Sustainability, Nagoya University*

P17

AC magnetic-field quantum-sensor with unlimited dynamic-range

E. D. Herbschleb[1], H. Kato[2], T. Makino[2], S. Yamasaki[2], and N. Mizuochi[1]
[1]*Institute for Chemical Research, Kyoto University,* [2]*National Institute of Advanced Industrial Science and Technology (AIST)*

P18

Resistively-detected NMR in multiple gate-defined quantum point contact

T. Sobue[1], M. H. Fauzi[2,3], M. Takahashi[1], K. Nagase[1], K. Sato[1], and Y. Hirayama[1,2,4]
[1]*Graduate School of science, Tohoku University,* [2]*Center for Spintronics Research Network, Tohoku University,* [3]*Research Center for Physics, Indonesian Institute of Sciences,* [4]*Center for Science and Innovation in Spintronics, Tohoku University*

P19

Nanoscale amorphization of $Ge_2Sb_2Te_5$ by laser-driven STM

D. Kim[1], K. Asakawa[1], S. Yaguchi[1], K. Yoshioka[1], I. Katayama[1], Y. Arashida[2,1], S. Yoshida[2], H. Shigekawa[2], M. Kuwahara[3], and J. Takeda[1]
[1]*Graduate School of Engineering Science, Yokohama National University,* [2]*Faculty of Pure and Applied Sciences, University of Tsukuba,* [3]*Sensing System Research Center, National Institute of Advanced Industrial Science and Technology (AIST)*

P20

Low-density InPAs quantum dot grown by interdiffusion epitaxy

K. Akahane, A. Matsumoto, T. Umezawa, and N. Yamamoto
National Institute of Information and Communications Technology (NICT)

P21

Enhancement of THz-bandwidth photon echo signals from stacked quantum dots embedded in Fabry-Pérot resonator

K. Saso[1], R. Ide[1], K. Akahane[2], and J. Ishi-Hayase[1,3]
[1]*School of Fundamental Science and Technology, Keio University,* [2]*National Institute of Information and Communications Technology (NICT),* [3]*Center for Spintronics Research Network, Keio University*

P22

Acoustic modulation of light emission centers in hexagonal boron nitride

A. Hernández-Mínguez[1], F. Iikawa[2], I. Aharonovich[3], S. Nakhaie[1], Y.-T. Liou[1], J. M. J. Lopes[1], and P. V. Santos[1]

[1]*Paul-Drude-Institut für Festkörperelektronik, Leibniz-Institut im Forschungsverbund Berlin. e.V,* [2]*Institute of Physics, State University of Campinas,* [3]*School of Mathematical and Physical Sciences, University of Technology Sydney*

P23

Time-resolved detection of photon echo pulses from quantum dots by using femtosecond frequency up-conversion

M. Watanabe[1], K. Ito[1], S. Kurimura[2], K. Akahane[3], and J. Ishi-Hayase[1,4]

[1]*School of Fundamental Science and Engineering, Keio University,* [2]*National Institute for Materials Science (NIMS),* [3]*National Institute of Information and Communications Technology (NICT),* [4]*Center for Spintronics Research Network, Keio University*

P24

Near infrared single-pixel imaging of a spatial distribution of photonic quantum walkers

H. Hagihara, K. Yokota, N. Namekata, and S. Inoue

Institute of Quantum Science, Nihon University

P25

Development of low-temperature THz-driven scanning tunneling microscope

K. Asakawa[1], K. Kimura[2], Y. Morinaga[1], K. Yoshioka[1], M. Horikawa[1], Y. Arashida[1,3], H. Imada[2], I. Katayama[1], Y. Kim[2], and J. Takeda[1]

[1]*Graduate School of Engineering Science, Yokohama National University,* [2]*Surface and Interface Science Laboratory, RIKEN,* [3]*Faculty of Pure and Applied Sciences, University of Tsukuba*

P26

Floquet approach to the discrete Dicke time crystal

A. Sakurai[1], V. M. Bastidas[2], W. J. Munro[1,3], and K. Nemoto[1,3]

[1]*National Institute of Informatics,* [2]*NTT Basic Research Laboratories,* [3]*Japanese-French Laboratory for Informatics*

P27

Theoretical study of surface phonon-polaritons in SiN submicron films

Y. Wu[1], J. Ordonez-Miranda[2], S. Gluchko[1,3], R. Anufriev[1], S. Volz[1,3], and M. Nomura[1,3]

[1]*Institute of Industrial Science, The University of Tokyo,* [2]*Institut Pprime, CNRS, Université de Poitiers,* [3]*Laboratory for Integrated Micro Mechatronic Systems/National Center for Scientific Research-Institute of Industrial Science (LIMMS/CNRS-IIS), The University of Tokyo*

P28

Two-dimensional hole transport in undoped GaSb quantum well

K. Shibata[1,2], M. Karalic[1], C. Mittag[1], T. Tschirky[1], C. Reichl[1], H. Ito[2], K. Hashimoto[3,4], T. Tomimatsu[3], Y. Hirayama[3,4,5], W. Wegscheider[1], T. Ihn[1], and K. Ensslin[1]

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

P29

Non-adiabatic electron pumping by bias voltage modulation

K. Hashimoto[1] and C. Uchiyama[1,2]

[1]*Faculty of engineering, University of Yamanashi,* [2]*National Institute of Informatics*

P30

Interaction effect on spin pumping under magnetic precession

H. Yamamoto[1], K. Hashimoto[1], and C. Uchiyama[1,2]

[1]*Faculty of Engineering, University of Yamanashi,* [2]*National Institute of Informatics*

P31

Transport characteristics of InSb in-plane trench gate quantum point contact devices with metal center gate

T. Masuda[1], K. Nagase[1], K. S. Wickramasinghe[2], T. D. Mishima[2], M. B. Santos[2], M. Kohda[3], J. Nitta[3], and Y. Hirayama[1,4],

[1]*Department of Physics, Tohoku University,* [2]*Homer L. Dodge Department of Physics and Astronomy, University of Oklahoma,* [3]*Department of Materials Science, Tohoku University,* [4]*Center for Spintronics Research Network, Tohoku University*

P32

Josephson junction based on bismuth nanowires

H. Wang[1], R. S. Deacon[1,2], and K. Ishibashi[1,2]

[1]*Quantum Effect Device Research Team, RIKEN,* [2]*Advanced Device Laboratory, RIKEN*

P33

Quantum spatial search algorithm by continuous-time quantum walk on the Bollobás scale-free network

T. Osada[1], B. Coutinho[2], Y. Omar[2,3], K. Sanaka[1], W. J. Munro[4,5], and K. Nemoto[5]

[1]*Department of Physics, Tokyo University of Science,* [2]*Instituto de Telecomunicações,* [3]*Instituto Superior Técnico, Universidade de Lisboa,* [4]*NTT Basic Research Laboratories & NTT Research Center for Theoretical Quantum Physics, NTT Corporation,* [5]*National Institute of Informatics*

Late News Posters

LNP-1

Adiabatic quantum computation methods to solve systems of boolean equations via optimization

C. Gravel
National Institute of Informatics

LNP-2

Transport of light excitation under environmental engineering

C. Uchiyama[1,2] and K. Nemoto[2]
[1]*University of Yamanashi,* [2]*National Institute of Informatics*

LNP-3

Periodically-driven arrays of superconducting qubits: the role of the driving phase and floquet gauge transformations

V. M. Bastidas[1], M. P. Estarellas[2], T. Osada[3], B. Renoust[4], K. Sanaka[3], K. Nemoto[2], and W. J. Munro[1]
[1]*NTT Basic Research Laboratories & Research Center for Theoretical Quantum Physics,* [2]*National Institute of Informatics,* [3]*Tokyo University of Science,* [4]*Osaka University, Institute for Datability Science*

LNP-4

Towards study of topological states in van der Waals Josephson junction devices

H. Inada[1,3], M. Hosoda[1,4], R. S. Deacon[1,2], T. Taniguchi[5], K. Watanabe[5], T. Sasagawa[6], Y. Doi[4], S. Sato[4], and K. Ishibashi[1,2,3]
[1]*Advanced Device Laboratory, RIKEN,* [2]*Center for Emergent Matter Science, RIKEN,* [3]*Graduate School of Science and Engineering, Chiba University,* [4]*ICT System Laboratory, Fujitsu Laboratories Ltd.,* [5]*Research Center for Functional Materials, National Institute for Materials Science,* [6]*Materials and Structures Laboratory, Tokyo Institute of Technology*

LNP-5

Thermal maser in diamond

P. Moroshkin, J. Ball, S. Norimoto, and Y. Kubo
Okinawa Institute of Science and Technology

LNP-6

Coexistence of flexoelectric polarization and magnetization in strain-gradient rare-earth iron garnet thin films for spin wave devices

H. Yamahara, S. Nakamura, Md. S. Sarker, M. Seki, and H. Tabata

Department of Electrical Engineering and Information System, Graduate School of Engineering, University of Tokyo

LNP-7

Quasi-ballistic phonon transport in graphene isotopic heterostructures

Y. Notani[1], A. Hida[2], K. Takei[1], S. Akita[1], K. Ishibashi[2], and T. Arie[1]

[1]*Department of Physics and Electronics, Osaka Prefecture University,* [2]*RIKEN*

LNP-8

Suppression of thermal expansion in nano mechanical resonator by stacking MoS_2 and graphene

T. Inoue, Y. Mochizuki, K. Takei, T. Arie, and S. Akita

Department of Physics and Electronics, Osaka Prefecture University

LNP-9

Weak localization state in turbostratic multilayer graphene

R. Negishi[1], C. Wei[1], Y. Ogawa[2], M. Akabori[3] Y. Taniyasu[2], Y. Kanai[4], K. Matsumoto[4], K. Hashimoto[5], Y. Hirayama[5], and Y. Kobayashi[1]

[1]*Graduate School of Engineering, Osaka University,* [2]*NTT Basic Research Laboratories,* [3]*Japan Advanced Institute of Science and Technology,* [4]*The Institute of the Science and Industrial Research, Osaka University,* [5]*Graduate School of Science, Tohoku University*

LNP-10

On the conductance formula using singular value decomposition

M. Hayashi

Faculty of Education and Human Studies, Akita University

LNP-11

Effect of introducing phosphorous in the GaAs-based terahertz MEMS bolometers

B. Qiu[1], Y. Zhang[2], K. Akahane[3], N. Nagai[1], and K. Hirakawa[1]

[1]*Institute of Industrial Science, University of Tokyo,* [2]*Institute of Engineering, Tokyo University of Agriculture and Technology,* [3]*National Institute of Information and Communications Technology*

LNP-12

Absorption and resonance frequencies in ultra-thin metamaterial absorbers in the terahertz range

T. Niu[1], B. Qiu[1], Y. Zhang[2], and K. Hirakawa[1,3]

[1]*Institute of Industrial Science, University of Tokyo,* [2]*Tokyo University of Agriculture and Technology,* [3]*Institute for Nano Quantum Information Electronics, University of Tokyo*