

Award for Encouragement of Young Physicists

Every year the Physical Society of Japan presents the Award for the Encouragement of Young Physicists for young researchers who have made outstanding achievements in their early research careers. This year's winners were recently decided during a board meeting of JPS based on the selection of committees established in 19 divisions of the society. The maximum number of winners from each Division has been determined based on the number of talks given at the annual assemblies in the past three years. All the winners are to give an award lecture at the next general assembly of the society, scheduled in March 2014. Here is the list of the winners and their research topics based on the divisions from which they have been nominated.

• Theoretical Particle Physics:

Tatsuma Nishioka (Princeton University)
"On the Entanglement Entropy of Field Theories with a Mass Gap"

• Experimental Particle Physics:

Azusa Gando (Research Center for Neutrino Science, Tohoku University)
"First Results of Neutrinoless Double Beta Decay Search with KamLAND-Zen"

Tomoyuki Konno (Tokyo Metropolitan University, Graduate School of Science and Engineering)
"Measurement of Reactor Anti-Neutrino Disappearance using the Double Chooz Detector"

Minoru Hirose (Graduate School of Science, Osaka University)
"Measurement of the Top Quark Pair Production Cross Section in the Dilepton Final State with the ATLAS Detector"

• Theoretical Nuclear Physics:

Keitaro Nagata (KEK)
"Wilson Fermion Determinant in Lattice QCD"

Takenori Furumoto (Ichinoseki National College of Technology)
"Repulsive Nature of Optical Potentials for High-Energy Heavy-Ion Scattering"

Futoshi Minato (Japan Atomic Energy Agency)
"Impact of Tensor Force on β Decay of Magic and Semimagic Nuclei"

• Experimental Nuclear Physics:

Yoki Aramai (RIKEN Nishina Center for Accelerator-Based Science)
"Measurement of Neutral Pion with respect to the Azimuthal Angle in Au+Au Collisions"

Yuichi Ichikawa (Tokyo Institute of Technology)
"Production of Spin-Controlled Rare Isotope Beams"

• Cosmic Ray and Astrophysics:

Kenji Toma (Graduate School of Science, Osaka University)
"Studies of Gamma-Ray Burst Polarization and Relativistic Jets"

• Beam Physics:

Shunsuke Inoue (Institute for Chemical Research, Kyoto University)
"Femtosecond Electron Deflectometry for Measuring Ultrafast Transient Field Induced by Intense Laser Pulses"

• Division 1 (Atoms, molecules etc.):

Ryotarou Inoue (Department of Physics, Tokyo Institute of Technology)
"Entanglement Generation and Real-Time Control using Interaction between Cold Atomic Ensemble and Light"

Ippeï Danshita (Yukawa Institute for Theoretical Physics, Kyoto University)
"Collapse of Superfluid Flow of One-Dimensional Bose Gases in an Optical Lattice"

Shumpei Masuda (The James Franck Institute, The University of Chicago)
"Rapid Coherent Control of Bose Einstein Condensates using a Fast-Forward Theory"

• Division 2 (Plasma):

Shin Kajita (EcoTopia Science Institute, Nagoya University)
"Ignition and Characterization of Unipolar Arcing on Nanostructured Tungsten"

Kazuhiro Miki (Center for Computational Science & e-Systems, Japan Atomic Energy Agency)
 “Physics of Plasma Turbulence and Transition, Pioneered by Minimal Models”

• **Division 3 (Magnetism):**

Okubo Tsuyoshi (Institute for Solid State Physics, University of Tokyo)
 “Theoretical Study of Topological Phase Transitions and Multiple-Q States in Frustrated Magnets”

Masato Kotsugi (SPring-8/JASRI)
 “Nanoscale Magnetic Analysis using Synchrotron Radiation and its Application”

Yasuhiro Niimi (Institute for Solid State Physics, University of Tokyo)
 “Study on Extrinsic Spin Hall Effect and Spin Relaxation Mechanism”

• **Division 4 (Semiconductors and mesoscopic systems):**

Tetsuo Kodera (Quantum Nanoelectronics Research Center, Tokyo Institute of Technology)
 “Exchange Energy Measurement in Double Quantum Dots”

Ai Yamakage (Department of Applied Physics School of Engineering Nagoya University)
 “Pioneering Work of Transport Theory in Topological Insulators”

• **Division 5 (Optical properties of condensed matter):**

Hideaki Iwasawa (Hiroshima Synchrotron Radiation Center, Hiroshima University)
 “Many-Body Interactions in Strongly Correlated Electron Systems Studied by High-Resolution ARPES”

Ikufumi Katayama (Graduate School of Engineering, Yokohama National University)
 “Ultrafast Phonon Dynamics Investigated using Coherent Phonon and Terahertz Spectroscopy”

Youtarou Takahashi (Department of Applied Physics and Quantum Phase Electronics Center (QPEC), University of Tokyo)
 “Study on Magnetoelectric Resonance with Electromagnons”

• **Division 6 (Metals, ultra-low temperatures, superconductivity):**

No one qualified.

• **Division 7 (Molecular solids and organic conductors):**

Takako Konoike (The Institute for Solid State Physics, The University of Tokyo)
 “Development of Thermal Measurement Techniques for Organic Conductors, and their Applications to an Organic Dirac Electron System”

Koichiro Suekuni (Graduate School of Advanced Science of Matter, Hiroshima University)
 “Studies on the Mechanism of Glasslike Thermal Conductivity in Clathrate Crystals”

Minoru Yamashita (The Institute for Solid State Physics, The University of Tokyo)
 “Research on Elementary Excitations in Quantum Spin-Liquid States of Antiferromagnets on Two-Dimensional Triangular Lattices”

• **Division 8 (Strongly correlated electron systems):**

Junya Otsuki (Department of Physics, Tohoku University)
 “Theory of Heavy Electron Systems using Continuous-Time Quantum Monte Carlo Method”

Shigeru Kasahara (Department of Physics, Kyoto University)
 “Study of Quantum Critical Phenomena and Nematic Electronic States in Iron-Based Superconductors”

Kazutaka Kudo (Department of Physics, Okayama University)
 “Development of New Superconductors in Iron- Based and Relating Materials”

Shinichiro Seki (Center for Emergent Matter Science (CEMS), RIKEN)
 “Observation of Magnetic Skyrmions in a Multiferroic Material”

Masahito Mochizuki (Department of Physics and Mathematics, Aoyama Gakuin University)
 “Theory of Electromagnetic Phenomena in Multiferroic Mn Perovskite”

• **Division 9 (Surfaces, interfaces, and crystal growth):**

Shirasawa Tetsuroh (Institute for Solid State Physics, The University of Tokyo)

“Study of Structure Science of Ultra Thin Films by Structure Determination of Buried Interface”

Koji Miyamoto (Hiroshima Synchrotron Radiation Center, Hiroshima University)

“Study of Surface Dirac Electron Systems with Spin-Resolved Photoemission Spectroscopy”

• **Division 10 (Dielectrics, lattice defects etc.):**

Youhei Sato (Institute of Multidisciplinary Research for Advanced Materials, Tohoku University)

“TEM-EELS Studies on Dielectric Properties of nm-Scale Particles”

Shinya Tsukada (Faculty of Education, Shimane University)

“A Study of the Dynamic Structure of Polar Nanoregions by Broadband Light Scattering”

• **Division 11 (Statistical physics, fluid and mechanics, applied mathematics):**

Takuma Akimoto (Department of Mechanical Engineering, Keio University)

“Theoretical Study on Weak Ergodicity Breaking in Anomalous Diffusion”

Takashi Imamura (Research Center for Advanced Science and Technology)

“Construction of the Exact Solution for the Stationary KPZ Equation”

Sho Sugiura (Graduate School of Science, The University of Tokyo)

“Formulation of Equilibrium Statistical Mechanics based on Pure Quantum States”

Takashi Mori (Department of Physics, University of Tokyo)

“Statistical Mechanics for Long-Range Interacting Systems originated from Non-Localized Modes”

• **Division 12 (Soft matter, chemical and bio physics):**

Keisuke Saito (Department of Biological Sciences, Osaka University)

“Theoretical Studies on Electron and Proton Transfers in Photo Synthetic Proteins”

Tsutomu Hamada (School of Materials Science, Japan Advanced Institute of Science and Technology)

“Functional Control and Space-Time Dynamics of Cell-Model Lipid Vesicles”

• **Division 13 (Physics education, history, environmental physics):**

No one qualified.