

Young Scientist Award of the Physical Society of Japan

Every year the Physical Society of Japan presents the Young Scientist Awards to young researchers who have made outstanding achievements in their early research careers. The winners of this year were recently decided by the Board of Directors of the JPS according to the recommendation from the selection committees established in 19 divisions of the Society. The maximum number of the winners from each division has been determined based on the number of talks at the Annual Meetings in the past three years. All the winners are to give an award lecture at the next Annual Meeting of the Society scheduled in March 2016. Here is the list of the winners and their research topics from the 19 divisions.

Theoretical Particle Physics:

Noburo Shiba (Yukawa Institute for Theoretical Physics, Kyoto University)

“Entanglement entropy for spatially disjoint regions”

Natsumi Nagata (University of Minnesota)

“Effective theory analysis of the dark matter-nucleon scattering cross section”

Masahiro Nozaki (University of Chicago)

“Entanglement entropy of excited states associated with local operators”

Experimental Particle Physics:

Kei Ieki (International Center for Particle Physics, The University of Tokyo)

“Observation of $\nu_\mu \rightarrow \nu_e$ oscillation in the T2K experiment”

Yuki Fujii (Institute of High Energy Physics)

“Search for the lepton flavor violating muon decay $\mu^+ \rightarrow e^+ \gamma$ with a sensitivity below 10^{-12} in the MEG experiment”

Keisuke Yoshihara (Department of Physics, University of Pennsylvania)

“Measurement of the Higgs boson couplings using the $WW^* \rightarrow \ell\nu\ell\nu$ final state”

Theoretical Nuclear Physics:

Yuma Kikuchi (RIKEN Nishina Center for Accelerator-Based Science)

“Two-neutron correlations in ${}^6\text{He}$ in a Coulomb breakup reaction”

Kazuyuki Sekizawa (Warsaw University of Technology)

“Heavy-ion multi-nucleon transfer reactions with time-dependent density functional theory”

Kosuke Nomura (GANIL)

“Mean-field derivation of the interacting Boson model Hamiltonian and exotic nuclei”

Experimental Nuclear Physics:

Shumpei Noji (Research Center for Nuclear Physics, Osaka University)

“Estimation of stellar electron capture rate in astrophysical scenarios by precise measurements of transition strengths via charge exchange reactions”

Cosmic Ray and Astrophysics:

Yuta Michimura (Department of Physics, The University of Tokyo)

“Tests of Lorentz invariance with an optical ring cavity”

Kohta Murase (The Pennsylvania State University)

“Origin of ultra-high energy cosmic neutrinos”

Beam Physics:

Yugo Nagata (Institute of Engineering, Tokyo University of Agriculture and Technology)

“Study for the production of antihydrogen beams”

Division 1 (Atomic and Molecular physics, Quantum Electronics, Radiation):

Shuntaro Takeda (Institute of Molecular Science, National Institute of Natural Sciences)

“Hybrid quantum teleportation”

Yutaka Tabuchi (Research Center for Advanced Science and Technology, The University of Tokyo)

“Coherent coupling of a superconducting qubit and a ferromagnetic magnon”

Atsushi Noguchi (Research Center for Advanced Science and Technology, The University of Tokyo)

“Quantum manipulation of spin and alignment of cold ions toward quantum simulation”

Division 2 (Plasma):

Yusuke Kosuga (Institute for Advanced Study and Research Institute for Applied Mechanics, Kyushu University)

“Research on plasma turbulence and transport with statistical fluctuation in real and velocity space”

Masanori Nunami (National Institute for Fusion Science)

“Simulation studies and quantitative prediction for turbulent transport in three-dimensional plasmas”

Division 3 (Magnetism):

Minoru Soda (Institute for Solid State Physics, The University of Tokyo)

“Novel relationship between magnetism and dielectricity”

Shunsuke Furuya (University of Geneva)

“Theoretical study on the electron spin resonance in low-dimensional quantum antiferromagnets”

Daisuke Yamamoto (Waseda Institute for Advanced Study, Waseda University)

“Theoretical study on the magnetization process and new quantum phase transitions in frustrated triangular-lattice”

Division 4 (Semiconductors, Mesoscopic Systems and Quantum Transport):

Koji Kobayashi (Division of Physics, Sophia University)

“Theoretical study of disordered three-dimensional topological insulators”

Masayuki Hashisaka (Department of Physics, Tokyo Institute of Technology)

“Experimental study of electron dynamics in quantum Hall edge states”

Division 5 (Optical Properties of Condensed Matter):

Yasuo Minami (Graduate School of Engineering, Yokohama National University)

“Nonlinear dynamics of electrons in metallic and semi-metallic materials induced via intense THz fields”

Yasuhiro Yamada (Chiba University)

“Photocarrier dynamics of perovskite semiconductors by time-resolved laser spectroscopy”

Hiroki Wadati (Institute for Solid State Physics, The University of Tokyo)

“Observation of novel magnetic structures in transition-metal oxides by resonant soft x-ray scattering”

Division 6 (Metal Physics (Liquid Metals, Quasicrystals), Low Temperature Physics (Ultralow Temperatures, Superconductivity, Density Waves)):

Kazushi Aoyama (Department of Earth and Space Science, Osaka University)

“Investigations of influences of surface and impurity scattering on superfluid Helium 3”

Shuta Tahara (Department of Physics and Earth Sciences, University of the Ryukyus)

“Real-space analysis of anomalous structures in molten salts including noble-metal ions by combining quantum beam scattering experiments with computer simulations”

Division 7 (Molecular Solids):

Yoshitaka Kawasugi (RIKEN)

“Field-effect carrier doping into molecular conductors”

Takahiro Kondo (Faculty of Pure and Applied Sciences, University of Tsukuba)

“Study of the localized electronic states formed on the graphite by scanning tunneling microscopy”

Jun'ya Tsutsumi (Flexible Electronics Research Center, National Institute of Advanced Industrial Science and Technology)

“Optical probe and visualization of charge carriers in molecular devices”

Division 8 (Strongly Correlated Electron Systems):

Takeshi Kondo (Institute for Solid State Physics, The University of Tokyo)

“Study of competition between pseudogap and superconductivity in high-T_c oxide superconductors”

Shiro Sakai (RIKEN Center for Emergent Matter Science)

“Study of pseudogap and superconductivity in cuprate superconductors based on dynamical mean-field theory”

Kousuke Nakayama (Department of Physics, Tohoku University)

“Angle-resolved photoemission study of iron-based superconductors”

Kazuyuki Matsubayashi (Department of Engineering Science, The University of Electro-Communications)

“Study of pressure-induced quantum phase transition in strongly correlated electron materials”

Haruki Watanabe (Department of Physics, Massachusetts Institute of Technology)

“Theory of non-Fermi liquid induced by interactions with the Nambu-Goldstone mode”

Division 9 (Surfaces & Interfaces, Crystal Growth):

Noriyuki Tsukahara (Department of Advanced Materials Science, The University of Tokyo)

“The study of spin states of adsorbed molecules on surfaces”

Shiro Yamazaki (Department of Materials Science and Engineering, Tokyo Institute of Technology)

“Atomic-scale transport and atom switch using scanning probe microscopy”

Division 10 (Dielectrics, Ferroelectricity, Lattice Defects and Nanostructures, Phononic Properties, and X-ray and Particle Beams):

Makoto Kuwahara (EcoTopia Science Institute, Nagoya University)

“Time-resolved ultramicroscopy using coherent spin-polarized electron beam”

Kengo Shibuya (Institute of Physics, Graduate School of Arts and Sciences, The University of Tokyo)

“Fundamental research on positronium spin conversion reaction due to spin-orbit interaction and the evolution for atomic collisions”

Division 11 (Fundamental Theory of Condensed Matter Physics, Statistical Mechanics, Fluid Dynamics, Applied Mathematics, Socio- and Econophysics):

Kenta Ishimoto (The Hakubi Center for Advanced Research, Kyoto University)

“Locomotion of microorganisms in low Reynolds number fluids”

Kiyoshi Kanazawa (Interdisciplinary Graduate School of Science and Engineering, Tokyo Institute of Technology)

“Systematic theory of Langevin equation driven by non-Gaussian noise”

Kyogo Kawaguchi (Department of Systems Biology, Harvard Medical School)

“Basic theories and applications to biophysics of nonequilibrium statistical mechanics”

Yoji Kawamura (Department of Mathematical Science and Advanced Technology (MAT), Japan Agency for Marine-Earth Science and Technology)

“Theory of phase reduction for oscillatory convection with infinite degrees of freedom”

Division 12 (Soft Matter Physics • Chemical Physics • Biophysics):

Akihito Ishizaki (Research Center of Integrative Molecular Science, Institute for Molecular Science, National Institute of Natural Sciences)

“Theoretical study on the photosynthetic energy transfer and charge separation process based on the theory of quantum dynamics in condensed phase”

Kim Hyeon-Deuk (Department of Chemistry, Kyoto University)

“Verification and clarification of quantum effect of nuclei on the condensed system by the computational scientific approach”

Division 13 (Physics Education, History of Physics, Environmental Physics):

Fumiko Okiharu (Institute of Humanities, Social Sciences and Education, Niigata University)

“Studies of ICT application to physics education and documented science education in the Meiji era”