NIMS Award 2021 Winner

Prof. Tsuneya Ando

Honorary Professor, Emeritus Professor,
Tokyo Institute of Technology
Emeritus Professor, University of Tokyo

Research Field
Physics (Condensed matter theory)

History

1968	Bachelor of Science, Department of Physics, University of Tokyo
1970	Master of Science, Department of Physics, University of Tokyo
1973	Doctor of Science, Department of Physics, University of Tokyo
1973	Research Associate, Department of Physics, University of Tokyo
1979	Associate Professor, Institute of Applied Physics, University of Tsukuba
1983	Associate Professor, Institute for Solid State Physics, University of Tokyo
1990	Professor, Institute for Solid State Physics, University of Tokyo
2002	Professor, Department of Physics, Tokyo Institute of Technology
2011	Retirement
2011～2016	Institute Professor, Department of Physics, Tokyo Institute of Technology
2016～2021	Researcher, Department of Physics, Tokyo Institute of Technology
1975～1975	Visiting Researcher, Physics Department, Technical University of Munich, Germany
1976～1976	Research Fellow of Alexander von Humboldt Foundation, Physics Department, Technical University of Munich, Germany
1977～1978	Visiting Scientist, IBM Thomas J. Watson Research Center, USA
2012～2015	Editor-In-Chief of Journal of the Physical Society of Japan
2017～2020	Honorary Director, SKKU Advanced Institute of Nano Technology, Korea
2018～2021	Visiting Fellow, Toyota Physical and Chemical Research Institute
2006	Emeritus Professor, University of Tokyo
2011	Emeritus Professor, Tokyo Institute of Technology
2011	Honorary Professor, Tokyo Institute of Technology

Major Awards

1982	Nishina Memorial Prize (Theoretical study of two-dimensional systems in MOS inversion layers)
1983	Japan Academy Prize (Theory of quantum transport in MOS inversion layers in strong magnetic fields)
1985	Fellow of American Physical Society
1985	Honorary Degree, Würzburg University – Hundred Years since Discovery of X-Ray (Semiconductor physics – Theory of two dimensional systems in high magnetic fields)

1999 Outstanding Paper Award of the Physical Society of Japan [Electronic states of carbon nanotubes, H. Ajiki and T. Ando, J. Phys. Soc. Jpn. **62**, 1255−1266 (1993)]

2000 ISI World's Most Cited and Influential Scientific Authors in Physics (ISI Web of Science)

2006 Leo Esaki Prize (Theoretical study of electronic properties of quantum nanostructures)

2008 Outstanding Referee (American Physical Society)

2011 Outstanding Paper Award of the Physical Society of Japan [Screening effect and impurity scattering in monolayer graphene, T. Ando, J. Phys. Soc. Jpn. **75**, 074716-1−7 (2006)]

Major Publications/Books

1) Theory of quantum transport in a two-dimensional electron system under magnetic fields. I. Characteristics of level broadening and transport under strong magnetic fields, T. Ando and Y. Uemura, J. Phys. Soc. Jpn. **36**, 959−967 (1974).
2) Electronic properties of two-dimensional systems, T. Ando, A. B. Fowler, and F. Stern, Rev. Mod. Phys. **54**, 437–672 (1982).
3) Excitons in carbon nanotubes, T. Ando, J. Phys. Soc. Jpn. **66**, 1066−1073 (1997).
4) Impurity scattering in carbon nanotubes − Absence of back scattering, T. Ando and T. Nakanishi, J. Phys. Soc. Jpn. **6**7, 1704−1713 (1998).
5) Quantum transport in two-dimensional graphite system, N. H. Shon and T. Ando, J. Phys. Soc. Jpn. **67**, 2421−2429 (1998).
6) Crossover from symplectic to orthogonal class in a two-dimensional honeycomb lattice, H. Suzuura and T. Ando, Phys. Rev. Lett. **89**, 266603-1−4 (2002).
7) Theory of electronic states and transport in carbon nanotubes, T. Ando, J. Phys. Soc. Jpn. **74**, 777−817 (2005).
8) Theory of valley Hall conductivity in graphene with gap, T. Ando, J. Phys. Soc. Jpn. **84**, 114705-1−12 (2015).