

AWARDS

Professor Tanaka's Scientific Achievements

Professor Koji Tanaka of Coordination Chemistry Laboratories received the Divisional Award of the Chemical Society of Japan in Inorganic Chemistry and Analytical Chemistry in 1998 for his contribution to "Studies on Reactivity of Carbon Dioxide Activated on Metal Complexes."

His scientific achievements relevant to the award are summarized as following.

1. Interconversion among $-\text{CO}$, $-\text{COOH}$, $-\text{CO}_2$ on metal complexes. He has proved that the ruthenium carbonyl complex having bipyridine ligands is converted into $-\text{COOH}$ and $-\text{CO}_2$ complex depending on pH. With the isolation and structure analysis, he has clarified the nature of Ru-C bonds in Ru-CO, Ru-COOH and Ru-CO₂.
2. Multi-electron reduction of CO₂ via formyl and acyl complexes. He has proved the carbonyl ligand is converted into formyl and hydroxymethyl ligands in protic condition by the repression of Ru-CO bond cleavage. He has also developed multi-electron reduction catalyst for CO₂ affording acetone via acyl complexes under aprotic conditions.
3. Activation of CO₂ on bridging sulfur atom. He has demonstrated the reduction of CO₂ on bridging sulfur atom produces oxalate and pyruvate without the C-O bond dissociation.

Associate Professor Morita's Scientific Achievements

Associate Professor Norio Morita of Department of Molecular Structure received the Matsuo Science Award in 1998 for his contribution to "Laser Spectroscopy of Antiprotonic Helium Atomcules." He carried out successfully the laser spectroscopy of a new exotic atom, "antiprotonic helium atomcule," in collaboration with an international research group of nuclear physics at CERN, and found out its resonance lines for the first time. The antiprotonic helium atomcule is a helium atom in which one of its two electrons is replaced with an antiproton, and is a completely new compound with both characters of atoms and molecules. However, before his spectroscopic study, the existence of such a strange entity had only been inferred from the extraordinarily long lifetime of antiprotons scattered in liquid helium. His achievement did not only confirm its existence, but also contributed to the establishment of a new interdisciplinary research field.

Associate Professor Kanoda's Scientific Achievements

Associate Professor Kazushi Kanoda of Department of Molecular Assemblies (June '98-: the University of Tokyo) received the IBM Japan Science Prize in 1998 for his contribution to "Investigation on Metal-Insulator Transitions and Mechanism of Superconductivity in Molecular Solids." His scientific achievements are summarized as follows.

1. Clarify the charge and spin states in various electronic phases of κ -type BEDT-TTF compounds with different counter ions by NMR, magnetic susceptibility, electrical conductivity and specific heat measurements.
2. Propose a possible phase diagram of κ -type systems considering bandwidth and electron correlation within the framework of competition between Mott-insulator and highly correlated metal.
3. Observation of the antiferromagnetic spin fluctuation in the paramagnetic states that is one of the characteristic features of highly correlated electron systems.

Associate Professor Taira's Scientific Achievements

Associate professor Takunori Taira of Laser Research Center for Molecular Science received Medal for Review Paper from the Laser Society of Japan in 1999 for his contributions to "Microchip solid-state Lasers."

His scientific achievements related to this award are:

- 1) to have established design rules of microchip solid-state lasers,
- 2) to have first demonstrated a Nd:YVO₄-based microchip laser,
- 3) to have obtained a low-noise, mode-hopping-free, tunable microchip laser,
- 4) to have achieved frequency control of a high power YAG laser injection-seeded by the Nd:YVO₄-based microchip laser.

"Microchip laser," which is coined by the professor, has now become popular even in the commercial world. This is clear evidence that his works have pioneered the field of laser-diode-pumped solid-state compact lasers.

Dr. Takahashi's Scientific Achievements

The 15th Inoue Research Award for Young Scientists in 1998 was given to Dr. Masaki Takahashi, who was a graduate student studying in the Department of Applied Chemistry, Faculty of Engineering, Chiba University. This award is given to young scientists (under 35 years old) who obtained remarkable results during their Ph.D. work in the fields of basic science, engineering, medicine, pharmacy, and agriculture. Dr. Takahashi was awarded this prize for his Ph.D. thesis, "Photochemical Reactions under Chiral Crystalline Environment."

Mr. Nishimoto's Technological Achievements

Mr. Fumio Nishimoto, The chief of the technical section of Computer Center, received the Award of the Technological Development in Chemistry for 1999.

This Award is made every year by the Chemical Society of Japan to a person who has contributed to the development or improvement of the experimental technique in chemistry or chemical engineering. Mr. Fumio Nishimoto is recognized for his contribution to "Development and Popularization of Supercomputer Environments for Molecular Science Computations." Mr. Nishimoto developed the following system and software for the users of Computer Center: (1) Scheduled Power Supply System for general purpose- and super- computer, 1979-1986, (2) Dynamic Job scheduling system for general purpose- and super- computer, 1979-1991, (3) Total environment system for output and printing for user-job, 1979-1991. Since the commercial software for the large scale simulation has not been well established, these system and software has been installed for the use of not only Computer Center but also other universities, *i.e.*, the Univ. of Tokyo, and Hokkaido Univ.