



PERSONAL

Retirement

Professor SUGIURA, Yukio

(Biofunctional Design-Chemistry,
Division of Biochemistry)



On the 31st of March 2005, Dr. Yukio Sugiura retired from Kyoto University after 40 years of service and was honored with the title of Professor Emeritus of Kyoto University.

Dr. Sugiura was born in Kyoto on 3rd of February 1942. He graduated from Faculty of Pharmaceutical Sciences, Kyoto University in 1964. He studied metallobiochemistry at the Graduate School of Pharmaceutical Sciences, Kyoto University, under the supervision of Professor H. Tanaka and was granted a doctoral degree for a thesis entitled "Correlation between Detoxication Activity of Heavy Metal Toxicity and Chelating Ability of Penicillamine" in 1971. In 1965, he was appointed as a Research Associate of the Laboratory of Radiopharmaceutical Chemistry, at the Graduate School of Pharmaceutical Sciences, Kyoto University. In 1982, he was promoted to an Associate professor of the Graduate School of Pharmaceutical Sciences, Kyoto University. In 1988, he was appointed as a full Professor of the Institute for Chemical Research, Kyoto University, and directed the Laboratory of Cancer Drug Research (present name: Laboratory of Biofunctional Design-Chemistry). He gave lectures at the Graduate School of Pharmaceutical Sciences, Kyoto University and supervised the dissertation works of graduate students.

During his academic carrier, Dr. Sugiura made a number of notable findings in wide area ranged from bioinorganic chemistry, biomedical chemistry, and biofunctional chemistry, which he pioneered. He started research on the structure and function of bio-metal chromophores using the ESR techniques. Then he emerged his research to the molecular mechanisms of DNA cleavage by bleomycin and enediyne antitumor antibiotics known by their strong antitumor activities. He firstly clarified the sequence- or conformation-specific DNA cleavage manners by endiynes antitumor antibiotics including esperamicin, dynemicin, C-1027, and

so on. For the recent years he investigated the mechanism of DNA recognition of the Cys₂His₂-type zinc finger proteins and created a lot of artificial zinc finger proteins with novel DNA binding characteristics or hydrolytic ability. For these distinguished contributions to science, he was awarded the Pharmaceutical Society of Japan Award for Young Scientists in 1984, the Upjohn Scientific Research Award in 1992, and the Award of Pharmaceutical Society of Japan for the research entitled "Molecular Mechanism for DNA Recognition and Functional Expression of Bioactive Molecules" in 2000.

Dr. Sugiura also devoted himself to administration of Kyoto University as well as the Institute for Chemical Research, Kyoto University. He served as the Director at Institute for Chemical Research, Kyoto University and also as a senator of Kyoto University from 1998 to 2000. In 2000, he chaired the Kyoto University Uji Library. He greatly contributed to reorganization of journals and development of the electronic journals in the Kyoto University Library as a chairman of the committee for the library when he was a councilor for the library.

Dr. Sugiura contributed to various scientific societies. He served as a vice president of the Pharmaceutical Society of Japan during 2003 and 2005 and he is the present president of the society. Internationally, he was invited as a visiting professor by School of Pharmacy and Pharmaceutical Sciences, University of Manchester from 1998 to 2004. He organized as chairman the 5th AFMC International Medicinal Chemistry Symposium in 2003.

His contribution to Kyoto University thorough his scientific, educational, and administrative activities is gratefully acknowledged. His sincere and warmhearted personality has been admired by his friends, colleagues, and especially by his students.

Retirement

Professor UMEMURA, Junzo

(Solution and Interface Chemistry,
Division of Environmental Chemistry)



On the 31st of March 2005, Dr. Junzo Umemura retired from Kyoto University after 38-year service to Kyoto University. Dr. Umemura was born in Nagaike, Kyoto-fu on June 20, 1941. He graduated from the Department of Chemistry, Faculty of Science, Kyoto University in 1964. He studied vibrational spectroscopy in Graduate School of Science, Kyoto University under the supervision of the late Professor Rempei Gotoh. After completing his Master's Degree in 1966, he entered Mitsui Chemical Industries in Nagoya to study physical properties of polymer films. In 1967, he was appointed as an Assistant Professor of the Institute for Chemical Research, Kyoto University. He continued his spectroscopic study in the group of Professor Tohru Takenaka and Associate Professor Soichi Hayashi to be granted a doctoral degree of Science, Kyoto University under the title of "Coexistence of Two Molecular Configurations in Crystalline Normal Fatty Acids as Studied by Infrared Spectra" in 1978. On leave from Kyoto University from 1978 to 1980, he studied structures of model biomembranes and aqueous micellar solutions by FT-IR spectroscopy under Dr. Henry H. Mantsch at the National Research Council of Canada in Ottawa as a Research Associate. He was promoted to an Associate Professor in 1994, and to a full Professor in 2003.

During his academic carrier, Dr. Umemura has devoted himself to the vibrational spectroscopic study of amphiphilic compounds that have both polar hydrophilic and non-polar hydrophobic groups within a molecule. He started his study from typical amphiphilic compounds of normal fatty acids in the crystalline state by performing low-temperature experiments down to liquid Helium temperature and normal coordinate analyses, giving decisive proof to the coexistence of two molecular configurations as a result of double proton transfers along two hydrogen bonds connecting two carboxylic groups of a dimer.

During his stay in Ottawa, two papers concerning the high-sensitive FT-IR monitoring of micelle formation of

sodium alkanoates mark the first success by the IR method that had been believed to be difficult at the critical micelle concentration range owing to the strong absorption of water in the infrared region.

After coming back from NRCC, he started to investigate the Gibbs monolayer of a surface active azo dye adsorbed from its aqueous solution to the solution-CCl₄ interface by resonance Raman spectroscopy. He found that in certain basic pH's, the tautomeric structural change from the azo form to the protonated hydrazone form occurred upon adsorption. This was the first finding that the structure of adsorbed monolayer at the interface could be different from that in the aqueous solution. He also carried out FT-IR investigations of Langmuir films of insoluble monolayer on the water surface and Langmuir-Blodgett (LB) films of various amphiphiles transferred onto solid substrates. The layer-by-layer structure change of stearic acid LB films measured by the attenuated total reflection method [*Langmuir*, **2**, 96 (1986)] attracted much attention in this field (290-time citation). He proposed a quantitative evaluation method of molecular orientation in LB films by comparing FT-IR transmission and reflection-absorption spectra [*J. Phys. Chem.*, **94**, 62 (1990)], and it is widely adopted for the characterization of LB films (270-time citation). Among his 132 original papers, seven are block-busters with more than 50 citations in any 7 years' span.

He gave lectures on vibrational spectroscopy since 1994 at the Graduate School of Science, Kyoto University, and supervised the dissertation works of graduate students. He was a visiting lecturer at Kobe, Chiba, and Nagoya Universities, as well as Shiga University of Medical Science. He served as a member of the program committee of the Chemical Society of Japan. He also served as a member of the several international conferences on thin organic films.

His contribution to Kyoto University through both scientific and educational activities is hereby greatly acknowledged.

Early Retirement

Professor TAMAO, Kohei

(Organic Main Group Chemistry,
International Research Center for Elements Science)



On the 31st of March 2005, Dr. Kohei Tamao retired from Kyoto University one year earlier than the retirement age after 35 years of service to the university to move to RIKEN, Wako, Saitama.

Dr. Tamao was born in Kagawa on the 31st of October, 1942. He received his Bachelor of Engineering, Master of Engineering, and Doctor of Engineering from Kyoto University under the direction of Professor Makoto Kumada in 1961, 1967, and 1971, respectively. He was appointed as an Assistant Professor of Kumada laboratory, Department of Synthetic Chemistry, Faculty of Engineering, Kyoto University in 1970 and promoted to an Associate Professor of Professor Yoshihiko Ito's group in 1987. He worked with J. J. Eisch, State University of New York at Binghamton, for one year from 1973 as a postdoctoral fellow. In 1993, he became a Full Professor at the Institute for Chemical Research, Kyoto University. He served the Institute as Director in 2000-2002 and the first Director of the International Research Center for Elements Science which was newly launched in the Institute in 2003.

He was also affiliated to the Division of Energy and Hydrocarbon, the Graduate School of Engineering, Kyoto University, to give lectures of organic chemistry course to graduate and undergraduate students.

His main research interests are organosilicon chemistry and transition metal catalyzed organic synthesis. In particular, he developed the nickel-phosphine catalyzed cross-coupling reaction between organic halides and organomagnesium reagents as a new carbon-carbon bond formation, which has opened up a new area in modern synthetic organic chemistry. This reaction is often called the "Kumada-Tamao-Corriu" reaction. The proposed catalytic cycle has been recognized as a prototype for many other transition metal catalyzed cross-coupling reactions. He was the first who demonstrated the synthetic applicability of hyper-

coordinate organosilicon compounds and later developed the oxidative cleavage of the silicon-carbon bond by hydrogen peroxide to form alcohols, which is now known as the "Tamao oxidation". During the past decade, he also developed a new method for the synthesis of silicon-containing cyclic compounds, siloles, and applied them to electroluminescent devices as efficient electron-transporting materials, as well as the chemistry of functionalized silyl anions and oligosilane σ -conjugated systems. Including these studies, he has published more than 230 original papers and 85 accounts, reviews and monographs.

Dr. Tamao received many honors, including the Chemical Society of Japan Award for young Chemists in 1977, the Chemical Society of Japan Award in 1999, the Toray Science & Technology Prize and the American Chemical Society F. S. Kipping Award in 2002, the Asahi Prize and the Mukai Prize in 2003, and Medal with Purple Ribbon in 2004.

Dr. Tamao was a research leader of the Kyoto University COE (Center of Excellence) "Elements Science" project, supported by Ministry of Education, Culture, Sports, Science, and Technology (MEXT) in 2000-2004. He is serving as the Vice President of the Chemical Society of Japan, the Editor-in-Chief of Bulletin of the Chemical Society of Japan, and the Chairman of The Society of Silicon Chemistry, Japan. He is also a member of several Councils for Science and Technology in MEXT. Dr. Tamao is now serving as Director of the Frontier Research System at RIKEN for the further development of academic research activities in Japan.

His contribution to Kyoto University and the Institute through both academic and administrative activities is gratefully acknowledged.