

# Obituary

## Professor Emeritus

Dr. SHIGEMATSU, Tsunenobu (1916-2003)



Dr. Tsunenobu Shigematsu, Professor Emeritus of Kyoto University passed away on November 18, 2003 in Kyoto.

Dr. Shigematsu was born on December 28, 1916 in Ehime. He graduated the Department of Chemistry, Faculty of Science, Kyoto Imperial University in 1940. During the war, he was appointed to a lieutenant commander of engineering. After the war, he was appointed to a junior assistant of the Faculty of Science, Kyoto Imperial University in 1947. He was promoted to an instructor of the Faculty of Science, Kyoto University in 1949, moved to the Faculty of Engineering and promoted to a lecturer in 1950. He got a Ph. D. (Doctor of Science) from Kyoto University in this year. He was promoted to an associate professor, the Faculty of Science in 1952. He was promoted to a full professor of the Institute for Chemical Research in 1957 to direct the Laboratory of Radiochemistry, which is presently the Laboratory of Hydrospheric Environment Analysis, Division of Interface Science III. He was appointed to the 16th director of the Institute for Chemical Research and a member of the University Council, Kyoto University from 1976 to 1978, and the director of the Radioisotope Research Center, Kyoto University from 1979-1980. He retired from Kyoto University in 1980, honored with the title of Professor Emeritus of Kyoto University. After the retirement, he served as a professor of the College of Liberal Arts, Kinki University from 1980 to 1991 and appointed to the president of Kinki University Toyooka Women's Junior College from 1985 to 1990.

Dr. Shigematsu produced a lot of brilliant achievements in analytical chemistry, marine chemistry, and radiochemistry, contributing largely to the development of these research fields. His major contributions are as following: (1) Radiochemistry. He determined

radio isotopes in the ashes of Bikini nuclear testing. He studied radioactivation analysis and treatment of radioactive waste water. (2) Chemical studies of the ocean. Research on marine chemistry in Japan has been started by Dr. Masayoshi Ishibashi, Professor Emeritus of Kyoto University in 1935. Dr. Shigematsu was the most important successor of the research. He determined many dissolved elements in seawater and discovered the regularities of the amounts of elements in seawater. (3) Spectrochemical Analysis. He developed absorption, fluorescence and atomic absorption spectrometry for trace elements, applying to analysis of seawater and natural water. (4) Solvent extraction. He analyzed the extraction reaction and equilibrium. He developed new ligands for extraction of metal chelates. (5) Coprecipitation. He analyzed coprecipitation as the distribution equilibrium of trace metals between solid and liquid phases.

Dr. Shigematsu was truly a gentle and honest person. He educated many students and younger people. He served as the vice president of the Japan Society for Analytical Chemistry from 1973 to 1974 and the director of its Kinki Branch from 1973 to 1975. For his great academic and educational contributions, Dr. Shigematsu was honored with the Award of the Japan Society for Analytical Chemistry in 1965 and the Second Class of the Order of the Sacred Treasure in 1991.

# Obituary

## Professor Emeritus

Dr. SHIMIZU, Sakae (1915-2003)



Professor Dr. Sakae Shimizu, Professor Emeritus of Kyoto University passed away on December 13, 2003 in Osaka.

Dr. Shimizu was born on July 18, 1915 in Tokyo. He entered the Department of Physics, Faculty of Science, Kyoto Imperial University in 1935 and was moved up to the Graduate School of Science, Kyoto Imperial University in 1940. After graduation, he appointed to a Lecturer in the Department of Physics, Kyoto Imperial University in 1943 and to an Associate Professor in the same Department in 1946. He got a Ph.D. (Doctor of Science) from Kyoto Imperial University in 1950 and was promoted to a full Professor of the Institute for Chemical Research, Kyoto University in 1952 to direct the Laboratory of Nuclear Radiation (presently, the Laboratory of Atomic and Molecular Physics, Division of States and Structures). From 1957 to 1959, he did his best to promote the Kyoto University Research Reactor and to establish Radioisotope Research Committee of Kyoto University. He also made a main contribution to complete Radioisotope Research Laboratory constructed on the north campus in 1961, which was reorganized and renamed the Radioisotope Research Center in 1971. From 1960 to 1979, he served as the first Director of this Center to promote further researches and educations utilizing radioisotopes in Kyoto University. In this period, he was the chairman of the Radioisotope Research Committee and the Committee for Preparation of Nuclear Research Facilities. He retired from Kyoto University in 1979, honored with the title of Professor Emeritus of Kyoto University.

Dr. Shimizu's research field extended over the wide region concerning with pure nuclear physics as well as its applications to many fields. In the period from 1943 to 1945 of the World War II, he devoted himself to experimental study of photonuclear reaction, construction of the 12" cyclotron and separation of  $^{235}\text{U}$  by the ultra-centrifugal method. In 9-16 August 1945 just before the end of the War, as a member of the first party of Kyoto University and a leader of the second party, he exerted

himself for the field survey of Hiroshima Atomic Bombing (6 August 1945), which contributed to disclose very rapidly the nature of the Bombing. One of his works after the War was the reconstruction of the Kyoto cyclotron completed in 1955. In 1954, with the group composing of nuclear physicists, analytical chemists, medical research workers in Kyoto University, he performed extensive studies on so-called "Bikini Ashes"-radioactive fallout collected aboard of Japanese fishing boat, Lucky Dragon No. 5. He successively informed all over the world of the nature of the terrible explosion, that is the hydrogen bomb newly developed, through the full report rapidly published from the Institute for Chemical Research.

From 1961 till his retirement, his main interest was concentrated to the boundary region between nuclear and atomic physics. Main subjects were 1) External Effects in the Radioactive Constant, 2) Positron Annihilation with K-shell Electrons and 3) K-shell Internal Ionization Accompanying Nuclear Decays. He and his many followers performed a lot of experimental studies on those subjects at his Radioisotope Research Laboratory on the north campus.

As a Member of Board of Education of Kyoto City from 1979 to 1994 and also as the Director of Kyoto Municipal Science Center for Youth from 1970 to 1979, Dr. Shimizu largely contributed to promote the education of science for young generation in Kyoto City. He was one of representative directors of the Japan Radioisotope Association from 1962 to 2000 and, as the Vice President of the Association (from 1990 to 2000), he did his best to extend the use of radioisotopes for scientific researches and various medical purposes in Japan. He was an Honorary Member of Hungarian Academy of Science since 1995, which was presented for his continuous effort to develop the science interchange between Japan and Hungary. For these great academic and educational contributions, Dr. Shimizu was awarded the Third Class of the Order of Rising Sun in November, 1988.