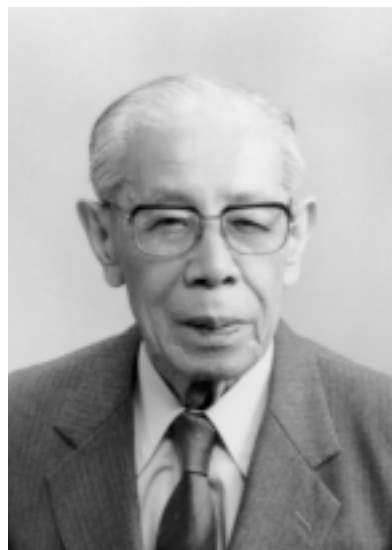


## Obituary

### Professor Emeritus

#### Dr. Waichiro Tsuji (1911 - 1999)



Professor Dr. Waichiro Tsuji, Professor Emeritus of Kyoto University passed away on January 27, 1999 in Kyoto.

Dr. Tsuji was born on February 24, 1911 in Kyoto. He entered the Department of Mechanical Engineering, Faculty of Engineering, Kyoto Imperial University in 1932, and moved to the Department of Industrial Chemistry, Faculty of Engineering in 1935. After the graduation, he went to the Graduate School of Engineering, and got a Doctor degree of Engineering from Kyoto University in 1948. Dr. Tsuji was appointed to Associate Professor of a newly founded Department, the Department of Fiber Chemistry, Faculty of Engineering, Kyoto Imperial University in 1945, and promoted to a full Professor of the Institute for Chemical Research, Kyoto University in 1950 to direct the Laboratory of Fiber Chemistry (presently the Laboratory of Polymer Material Science, Division of Fundamental Material Properties II). From 1967 to 1970 he was elected as the Director of the Institute for Chemical Research, and greatly contributed to the administration of the Institute, especially at the move of the Institute from Takatsuki, Osaka to Uji, Kyoto and in settling the campus disturbances which occurred during this period. He retired from Kyoto University in 1974, honored with the title of Professor Emeritus of Kyoto University. After the retirement, he moved to the Faculty of Home Economics (presently the Graduate School of Human Environmental Science), Mukogawa Women's University as a full Professor in 1974. He was elected as the Dean of the Faculty in 1976, and the Chair of the Graduate School of Human Economics in 1982. Dr. Tsuji retired from Mukogawa Women's University in 1984.

His research field was mainly concerned with fiber chemistry and polymer chemistry. He started his scientific life as a student in the laboratory of Professor Ichiro Sakurada in 1939. At that time Professor Sakurada and his collaborators succeeded in preparing water-insoluble poly(vinyl alcohol) (PVA) fiber, which was given the general name 'vynolon' in Japan in 1948 and later named 'vinal' in the United States. In the beginning, therefore, his

research was closely related to vynolon. First, he improved the vynolon fiber and developed a modified vynolon, named vynolon S. Then he invented an emulsion-mixture spinning method where PVA is used as one component to produce a two component composite fiber; using this method a fire retardant fiber of PVA and poly(vinyl chloride) mixture was later developed and industrially produced. He also invented and developed membranes and fibers of polyelectrolyte complex. Furthermore, his research was extended to improvement of properties of fibers. He succeeded in improving several natural fibers by chemical modifications, developing an amorphizing method of fibers, providing hydrophilic properties to hydrophobic fibers by a graft-polymerization method and modifying fibers by chemical cross-linking. In order to test properties of those fibers and fabrics, he developed several testing machines as well; of these, a rotational drum type measuring instrument of electrostatic propensity is noteworthy, which is still now used as a standard testing method in the Japan Industrial Standard (JIS).

Dr. Tsuji devoted himself to the Society of Fiber Science and Technology, Japan. He served as the Manager of Kansai Branch from 1964 to 1972, and then he was elected as the Vice-President of the Society from 1970 to 1972 and as the President from 1972 to 1974. During this period, he organized two investigating commissions as Coordinator, "Study Team of European Chemical Fibers (1971)" and "Study Team of European Non-Woven Fabric Technology (1973)". Dr. Tsuji participated in establishing the Kansai Branch of the Society of Polymer Science, Japan, serving as the Vice-Manager from 1952 to 1963. He was also elected as the Vice-President of the Adhesion Society of Japan from 1965 to 1968. Owing to these efforts, he won the Award for Distinguished Service from the Society of Fiber Science and Technology, Japan in 1980 and also from the Adhesion Society of Japan in 1983. Dr. Tsuji was awarded the Second Class of the Order of the Sacred Treasure for his great academic and educational contributions in 1983.

## Retirement

### Professor Takeshi Mukoyama (Atomic and Molecular Physics, Division of States and Structure)



On the 31st of March, 2000, Dr. Takeshi Mukoyama retired from Kyoto University after 35 years of service to the University and was honored with the title of Professor Emeritus of Kyoto University.

Dr. Mukoyama was born in Hyogo on the 21th of February, 1937. After graduation from Faculty of Science, Kyoto University in 1959, he continued his studies as a graduate student of the Department of Nuclear Engineering, Faculty of Engineering. He was employed by the Sumitomo Electric Industries, Co. Ltd for 2 years from 1962. In 1964, he was appointed an instructor of the Laboratory of Nuclear Radiation, Institute for Chemical Research, Kyoto University. Under the supervision of the Emeritus Professor Sakae Shimizu, he was granted a doctoral degree from Kyoto University in 1969 for his studies on Radiationless Annihilation of Positrons. On a leave of absence in the year 1977 to 1978, he worked on the Experimental Study of Ion-Atom Collisions in cooperation with Professor D. Berenyi at Institute for Nuclear Research of the Hungarian Academy of Sciences (ATOMKI) in Hungary. In 1988, Dr. Mukoyama was appointed full Professor of Kyoto University and directed the Laboratory of Nuclear Radiation (present name, States and Structure I), Institute for Chemical Research. He took part in Japan-US collaboration on ion-atom collisions and was a principal investigator of Japan-Hungarian collaboration on inner-shell ionization phenomena. He chaired the XVI International Symposium on Ion - Atom Collision, 1999. At the Graduate School of Science, Kyoto University, he gave lectures on High Energy Atomic Spectroscopy and

supervised the dissertation works of many graduate students. His sincere and warmhearted character has been admired by his friends, colleagues and students.

During the past 35 years, his research interest encompassed a wide array of atomic physics, radiation physics, and molecular physics. His contribution to the Institute through both academic and administrative activities is hereby gratefully acknowledged, and his academic achievements are briefly described below.

Following his early studies on the interaction between atomic electrons and nucleus, he worked on positron annihilation with K-shell electrons, inner-shell ionization processes in atoms and molecules, ion-atom collisions, and chemical effect in x-ray spectra. He developed a theory which includes exactly the relativistic effect in order to calculate the probability of inner-shell ionization by atomic collisions in heavy elements. Moreover, he quantitatively explained the experimental data with the aid of his developed theory by taking into account of the higher-order processes.

He studied chemical effects in the x-ray spectra, especially the  $K\beta:K\alpha$  x-ray intensity ratios in Mn and Cr compounds, both theoretically and experimentally. From the observed and calculated results, he first suggested that the difference of the coordination numbers around metal ions affects the  $K\beta:K\alpha$  ratios for the compounds.

Owing to his international academic efforts, he was honored with the Degree of Honorary Doctor (Doctor Honoris Causa) of Lajos Kossuth University in Hungary in 1994.