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## Obituary

Professor Emeritus

Dr. KATAYAMA, Ken-ichi (1927–2019)



Dr. Ken-ichi Katayama, Professor Emeritus of Kyoto University, passed away on March 29, 2019, at the age of 91.

Dr. Katayama was born in Osaka on August 25, 1927. He graduated from the Faculty of Science, Kyoto University, on March, 1950, with his major in physics. After graduation, he served as a staff member in Osaka Municipal Technical Research Institute from June of the same year till February 1952, when he moved to the Asahi Chemical Industry Co., Ltd. He joined the Institute for Chemical Research, Kyoto University, as an associate professor on April, 1972. He received a doctoral degree of science from Kyoto University in 1961 for his structural study on polymer crystals by X-ray diffraction.

Dr. Katayama was promoted to a full professor of the Institute in January, 1978, to direct the Laboratory of Polymer Crystals. He has given lectures on polymer crystals since 1973 at the Graduate School of Engineering and supervised dissertation works of many graduate students. Dr. Katayama served also a visiting lecturer at several universities such as Osaka University, Okayama University, Gifu University and Nagoya Institute of Technology. Dr. Katayama retired from Kyoto University in March 1991 and was honored with the title of Professor Emeritus, Kyoto University in April of the same year. After the retirement, he was appointed as a principal at Takuma National College of Technology from April 1991 to March 1996, and as a professor at Heian Jogakuin College from April 1996 to March 1998.

During his research career, Dr. Katayama devoted himself to the study on the structure and morphology of polymers in the solid state by X-ray and electron diffraction and by electron microscopy. He developed a system for the quick and accurate measurements of the intensity of X-ray diffraction and to elucidate the formation process of polymer solid structures. He applied the system for the clarification of the fine structures formed during fiber spinning. By using a high power X-ray source to examine its process *in situ* dynamically, he clarified that the structure formation

is already started before the onset of crystallization. For this pioneering work, he received The Award of The Society of Fiber Science and Technology, Japan in 1979.

Dr. Katayama also worked on high-resolution electron microscopy of polymer crystals as a powerful method to observe the arrangement of individual molecules in the crystal structure. In 1982, he succeeded in obtaining the high-resolution electron micrograph of single crystals of poly-*p*-xylylene, revealing an array of chain molecules. Subsequently, he clarified the local disorder structures in crystals of poly(*p*-phenylene sulfide), syndiotactic polystyrene, and so on, on the basis of the high-resolution micrographs; such local structures could not be analyzed by other methods at that time. In this way, he opened up the field of high-resolution electron microscopy of polymer crystals.

Dr. Katayama was instrumental in managing the Institute for Chemical Research. He worked as a member and chairman of various standing committees and contributed for the development of the Institute. He served as a vice-President of the Society of Fiber Science and Technology, Japan, for two years since April, 1988. He actively participated in International Conferences inside and outside Japan as a member of the executive committee, and contributed greatly to the development of international scientific exchanges. He also contributed to edit scientific journals such as *Polymer Journal* as an executive editor, *Journal of Macromolecular Science* as a member of advisory board and *Journal of Polymer Engineering* as a member of editorial board. Because of his contribution to the education and to the development of polymer science, Dr. Katayama was awarded The Order of the Sacred Treasure, Gold Rays with Neck Ribbon from the Japanese Cabinet Office in 2005.

Dr. Katayama was respected by his students, colleagues and friends because of his sincere, thoughtful and warm personality.