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53. Takeo Saegusa

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Personalities in Polymer Science

Professor Takeo Saegusa

Ring opening polymerization, the meaning of the propagating species in cationic polymerization, inorganic-organic hybrid polymers and general catalysis in polymerization and organic reactions are only the center pieces of a life commitment of an outstanding scientist of Japan. He has contributed even more and created imaginative and effective impact on a global scene to promote polymer science. This unusual personality of Takeo Saegusa—Emeritus Professor at Kyoto University, one of the most prestigious institutions of higher learning in Japan.

Born in Shenyang, China, on October 18, 1927 the second year of the Showa era (Emperor Hirohito's reign), Professor Saegusa was raised in China and received his higher education in Japan, first in the Fifth High School in Kumamoto, Kyushu, the southernmost of the main islands of Japan, and then at the famous Kyoto University.

Saegusa's dissertation was under the direction of Professor Ryohei Oda, a leading scientist in synthetic organic chemistry of his generation, in Japan. After receiving his Ph.D. degree in 1956, Saegusa was offered the position of Assistant Professor in Professor Furukawa's "koza" (research group) and he became Associate Professor in 1962. By 1965, at the age of only 37, he received a call from Kyoto University to fill the position of Full Professor for the Chair of Catalysis and Polymerization at the Department of Synthetic Chemistry of Kyoto University, a position from which



Prof. Takeo Saegusa

he retired two years ago.

In the 37 years of his very busy scientific activities since entering graduate school, Saegusa has been active in polymer science, catalysis, and organic chemistry. In the field of polymer science, he has published over 300 papers. He published over 200 papers in synthetic organic chemistry (a total of over 500 papers!). He contributed decisively and on a broad basis to the progress in each of the fields.

In organic chemistry he has been mainly involved with the development of new synthetic reactions with metal complexes. His important contributions in polymer chemistry were in aldehyde polymerization, ionic, and especially, cationic polymerization of cyclic ethers and other heterocyclic nitrogen and phosphorus ring compounds. He also developed a new type of polymerization, i.e. "No catalyst Copolymerization", which proceeds via zwitterion mechanisms. Special emphasis in Saegusa's work was the study of the kinetics of polymerization reactions and the mechanisms of polymerization as well as the function of catalyst and initiators.

Professor Saegusa has been honored on many occasions during his career for his exceptional scientific contributions. Especially mentioned should be the Prize of the Japanese Chemical Society in 1978, the Prize of the Society of Polymer Science in 1989, and, most recently, the Exner Medal of the Austrian Trade Association in 1990, the Herman Mark Medal of the Austrian Research Institute of Chemistry and Physics, the Purple Ribbon Medal from His Majesty, the Emperor of Japan in 1992, the American Chemical Society Award in Polymer Chemistry in 1993 and the Distinguished Service Award of the Pacific Polymer Federation in 1993.

Saegusa is well known as a teacher and lecturer, especially in Japan. He has been a guest professor in over a dozen universities including the University of Massachusetts.

As an international scientist, Saegusa was and is highly in demand as a main and plenary lecturer at International Symposia, especially those sponsored by IUPAC; in Aberdeen, Dublin, Mainz, Florence, Strasbourg, Amherst, The Hague, Merseburg, Kyoto, Montreal, and Akron. Always he lectured on the newest developments in polymer science.

For many years, Takeo Saegusa has contributed to the progress of the sciences in Japan. He was a member of the Council of Kyoto University from 1982 to 1985 and a Member of the Scientific Council of Japan from 1985 to 1989. (This appointment is made by the Prime Minister). Takeo Saegusa was President of the Society of Polymer Science of Japan (which has about 12,000 members) from 1984 to 1986; he was Chairman of the IUPAC Division of Macromolecular Chemistry from 1985 to 1989; and he was the President of the Pacific Polymer Federation from 1993 to 1994.

Takeo Saegusa has also been a major factor in the publication of polymer science. As an Editor and a Coeditor, Takeo Saegusa is active in many journals and has been involved in the publication and the direction of publication in polymer science in Japan and abroad.

Professor Saegusa is recognized as one of the most outstanding scientists, teachers, and writers in polymer science.

Professor Saegusa has now embarked in his second major career of his life, as the Executive Senior Vice President of the Kansai Research Institute (KRI International) in Kyoto, where his responsibilities cover the contract research division on advanced materials as well as the program of Japanese R & D Trend Analysis on Advanced Materials.

Since 1955, Professor Saegusa has been married to his wife, Ayako; they have two daughters, Yumiko and Mamiko, and two grandchildren.

An article submitted by Otto Vogl, Herman F. Mark Professor, Brooklyn NY.

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