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35. Shigeharu Onogi

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Personalities in Polymer Science

Honoring Professor Onogi on his 77th Birthday* (Kijyu)



Shigeharu Onogi

Shigeharu Onogi has been, for many years, interested in **rheological properties** of polymer solutions, melts and of suspensions and the **rheo-optical properties** of crystalline polymers. For decades he was the **leading figure in this field** not only in Japan but he was also well recognized internationally.

Shigeharu, or "Dennis", as he is often called by his friends, Onogi was born on October 21, 1920 in Kumanogun, Kyoto Prefecture, 170 km northwest of Kyoto as the second son of Kinzaburo and Kuni Onogi who had 7 children.

Dennis and his family moved during his youth and he changed the elementary school three times. The Onogis finally settled in Kyoto City in 1933 and young Shigeharu entered the Prefectural Momoyama Middle School followed by the corresponding High School. After graduation he registered at the Kyoto College of Technology, the predecessor of the present Kyoto Institute of Technology from which he graduated in 1941. He was then admitted to Kyoto Imperial University in 1944. Dennis was selected and became a special student at the Graduate School until 1946. This was the time of restructuring in the Japanese

school system after the second world war, especially the Japanese University system: in 1947 the Kyoto Imperial University was renamed Kyoto University. In 1947, Shigeharu Onogi was appointed Lecturer of the Faculty of Engineering at Kyoto University, and in 1950 he became Associate Professor of Kyoto University. In 1958 he received his doctoral degree in Engineering (Kogaku-Hakushi).

Like many ambitious young people of his time, he decided to go abroad to further his scientific knowledge and broaden his personal horizon. He applied for and received permission from Kyoto University to study abroad. Dennis chose to go to the U.S. to work with Richard S. Stein at the University of Massachusetts.

After his return to Kyoto, Shigeharu Onogi was appointed Professor of Kyoto University; he was associated with Kyoto University for 40 years, served 1975-1977 as University Councillor and became, from 1977 to 1983, the Director of the Environmental Preservation Center. In 1984 he retired from Kyoto University as an Emeritus Professor.

After his retirement from Kyoto University in 1984 Shigeharu Onogi began his second major career and accepted a position as President of Matsue (National) College of Technology in Matsue, in Shimane Prefecture. He served at this interesting and important position for 5 years, retired again in 1989 and is now also an Emeritus Professor of Matsue College of Technology.

"Dennis" Onogi has an unusually pleasing personality, is an excellent teacher, and selected early in his life a scientific career in a field that was highly in demand. As a consequence he was invited by many important Universities in Japan to function as a Guest Professor: 1972 at the University of Tokyo (Faculty of Engineering), 1980 at Nagoya University (Faculty of Engineering), 1980 at Kyushu University (Faculty of Engineering), 1959 at the Kyoto Institute of Technology, from 1963 to 1969 at the Faculty of Agriculture, Kyoto University, in 1970 at the Faculty of Science, Kyoto University, and from 1972 to 1973 at the College of Liberal Arts, Kyoto University.

Other Guest Professorships Dennis held in Japan include: 1974 at Okayama University (Faculty of Engineering) in Okayama Prefecture, from 1969 to 1979

at Yamagata University (Faculty of Engineering) in Yonezawa, Yamagata Prefecture, from 1969 to 1973 at Fukui University, and from 1967 to 1973 at the Yonago College of Technology in Yonago, Tottori Prefecture.

To no one's surprise, Shigeharu Onogi held also a number of influential national positions: most importantly, from 1981 to 1985 he was a Member of the Science Council of Japan.

From 1985 to 1994 he was a Member of the Council of the National Committee on Theoretical and Applied Mechanics (Chairman of the Subcommittee on Rheology), and from 1976 to 1993 he was the Japanese Delegate to the International Committee on Rheology.

Shigeharu Onogi is a highly regarded scientist and for nearly 3 decades was the most prominent rheologist in Japan; consequently he held a number of national elective offices in scientific societies. From 1973 to 1974 he was Vice President of the Chemical Society of Japan, from 1975 to 1979 and again from 1983 to 1985 he was President of the Society of Rheology, Japan, and in 1991, he was elected Honorary Member of the Society of Rheology of Japan. Not only was Onogi involved in rheology, but he has always been interested in and has contributed significantly to Materials Science. In 1991 Dennis became an Honorary Member of the Society of Materials Science, Japan.

Onogi's research interests focussed on rheo-optical properties of crystalline polymers, rheology and rheo-optics of liquid crystals, rheological properties of polymer solutions and melts, and rheology of suspensions. Beyond his specialities he became interested in materials properties. In his work on how materials properties could be optimized using proper understanding of rheology of materials he applied his knowledge to the fullest extent.

A rich legacy of scientific papers has resulted from Onogi's research activities: about 225 scientific papers, 10 books, and 13 book chapters. Dennis Onogi was the editor of the Polymer Symposia No. 15 "US-Japan Seminar on Polymer Physics", the Proceedings of the Fifth International Congress on Rheology, Vol 1-4, in 1968-1969, the Progress in Polymer Science, Japan, Vol 1-2 in 1971, and Vol 6, in 1973.

*For the significance of special Japanese Birthdays, see also O. Vogl and T. Ouchi, *Polymer News* 21(1), 18 (1996).

For his scientific and personal accomplishments, Onogi was decorated in 1990 with the Second Order of the Sacred Treasure (ZUJIOSHO), he received, in 1980, the Award of the Chemical Society of Japan, in 1984 the Distinguished Award of the Society of Polymer Science, Japan, and in 1986 the Award of the Society of Rheology, Japan.

In 1946 Shigeharu Onogi married the former Yoshiko Tanaka of Kyoto. They have three children Yuharu, Toshiyuki and Shoko and 5 grandchildren.

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