

University of Massachusetts Amherst

From the Selected Works of Otto Vogl

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30. Manfred Raetzsch

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Personalities in Polymer Science



Manfred Rätzsch

Honoring Professor Manfred Rätzsch on his 65th Birthday

Manfred Rätzsch has contributed to many important fields of **Polymer Science and Technology**, in fact, his contributions to the technological aspects of polymer science, especially of polyolefins are outstanding. He is and was not only interested in **scientific inventions and innovations** but also in the **transfer** of these accomplishments into **technological and commercially useful processes**.

Manfred Rätzsch was born in Leipzig, Germany on June 30, 1933 as the second son of Wilhelm Rätzsch and his wife Louise Offenhaus. His father was a Mechanical Engineer and had studied three years Mechanical Engineering at the Technical University of Leipzig. His specialty was heavy machinery and fire extinguishing equipment.

After 4 years in Elementary School in Annaberg in the Erzgebirge in Germany, young Manfred moved to Leipzig where he attended Middle School for 4 years. He went for 4 years to the High School in Markkleeberg near Leipzig; from there he graduated in 1952. Immediately thereafter he enrolled in the Ernst Moritz Arndt University in Greifswald. In 1955 he changed to the University of Leipzig and graduated with a Masters Degree in 1958.

Already in 1956 Manfred Rätzsch had joined the Leuna Company and, after

receiving his M.S. at Leipzig, he started his doctoral dissertation while working at Leuna at the University of Leipzig under the direction of Professor Gerhard Geiseler.

From 1956 until 1981 Manfred Rätzsch was employed at the Leuna Company which is located near Merseburg. There he was strongly supported by his teacher and mentor Professor Geiseler, who later became Professor of Physical Chemistry at the University of Leipzig.

In 1963, Manfred Rätzsch received his doctoral degree with a dissertation entitled *Thermodynamic: A Highly Sensitive Calorimeter and the Determination of the Enthalpies of the Isomeric n-Octanones*.

In 1964, Manfred Rätzsch started part-time teaching at the University of Leipzig on the subject *Technical Reaction Kinetics*. In 1967, he became Professor at the Technical University Leuna-Merseburg and taught: *Technology of High Polymers*. In 1968, he also became Professor at the University of Leipzig, specializing in: *Radical Polymerization and Copolymerization of Ethylene under High Pressure*.

Rätzsch's initial scientific work in industry was concerned with the chlorination of methane and the technical production of chloromethane. In 1962, he became involved and later responsible for the development and commercial production of polyethylene at Leuna. In 1964, he became manager of the Division Plastics in the Petrochemical Department of Leuna.

In the early 1960's, the cooperation of Leuna with the Technical University of Merseburg intensified because of the concentration of research and development of structural polymeric materials in the region. Rätzsch began to teach regularly at the Technical University in Merseburg. At the end of the 1960's a new Research Center of Petrochemistry and Polymeric Materials was created and Manfred Rätzsch was appointed Deputy Director for Science and Technology and Director of the Polymer Division. In 1970, Rätzsch was appointed Manager of International Cooperation of East Germany on High Pressure Polyethylene and Copolymer-Production, activities which resulted, in 1979, in the installation of polyethylene plants based on this new technology in the German Democratic Republic (GDR) [East Germany] and the Soviet Union. At the same time, Manfred

Rätzsch became Director of Research of the Leuna Company.

In 1981, Manfred Rätzsch was offered and accepted the position of Director of the Institute of Fiber Technology in Dresden, an Institute of the Academy of Sciences of the GDR. With this appointment his involvement with the Academy of Sciences which had already existed, intensified. In 1984, the Institute was renamed Institute of Polymer Technology and, under Rätzsch's aggressive leadership, the Institute was modernized and substantially expanded. He held this position until 1991, when he accepted the position of Director of Research of PCD-Polymers in Linz, Austria, a subsidiary of OMV, the oil company of Austria. As in previous positions, Manfred Rätzsch has made this position, both scientifically and from the business point of view, exceptional and PCD-Polymers Linz is now one of the leaders in science and technology in the polyolefin business.

Manfred Rätzsch's research interests over the years included the technology of reaction processes, the technology for the preparation of high polymers, the chemistry of radical polymerizations and copolymerizations – especially of ethylene, vinyl acetate, maleic anhydride, and their copolymerizations, the polymerizations and copolymerizations of olefins under high pressure, the chemical modifications of polymers, polymer blends, reinforcements of thermoplastics, and liquid crystalline polymers. He is also involved with coordination polymerization of olefins and solid state modification of polypropylene.

Manfred Rätzsch's extensive and wide-ranging work has been published in 210 papers, 3 monographs and more than 170 patents. He is a member of the Editorial Board of Progress in Polymer Science and the Journal of Macromolecular Science. He has repeatedly been invited as main and plenary speaker at National and International Congresses. In 1993, he was elected an honorary member of the Slovak Chemical Society.

Not surprisingly for a successful scientific carrier, Manfred Rätzsch has been recognized for his many accomplishments. He received the honorary award of the University of Leipzig (1963), the Carl Schorlemmer Prize of the Technical University of Leuna-Merseburg (1974), the Kekulé Medal of the Chemical Society of the GDR (1981), the Award of

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an Honored Technical Scientist of the GDR (1969), the National Prize, First and Second Class for Science and Technology (1969 and 1979), and the State Prize of the Soviet Union for Science and Technology (1976).

In addition to his scientific and administrative successes, Manfred Rätzsch has also extensively served the scientific community. From 1975–1980 he was the Chairman of the Chemical Society of the GDR, and since 1984 he was a member of the scientific advisory board of the GDR for Chemistry.

In the Academy of Sciences of the GDR, Manfred Rätzsch was a Member of the Committee of Polymers since 1966, he became a Corresponding Member of the Academy in 1972 and a Full Member in 1979, in 1987 he was appointed Deputy Chairman and in 1988 Chairman of the Class Chemistry of the Academy of Sciences. In 1989 he was elected a Member of the Executive Committee of the Academy of Sciences.

Manfred Rätzsch is not only intensely interested in science, he also has a number of hobbies. He enjoys very much nature in its many forms, and the relationship of plants with animals, but also the relationship of people and philosophy. He is a very active swimmer, mountain climber and ski enthusiast. He is also interested in the design of gardens and parks.

Manfred Rätzsch is now married with Christina Tittkowitz, they have two children, Katrin and Thomas.

This article was prepared by **Otto Vogl**, Herman F. Mark Professor of Polymer Science Emeritus, University of Massachusetts, Amherst, MA 01003.
