

## Professor Peter Plesch

### Chemist and leading authority on polymers who helped to found Keele University

Professor Peter Plesch was a chemist who made significant contributions to the understanding of polymerisation reactions. He was also a founding member of the University College of North Staffordshire, which became Keele University.

Towards the end of the Second World War Plesch began research in polymer science under Michael Polanyi at Manchester University, investigating the polymerisation of isobutylene. The reaction is closely related to that required for the production of hard-wearing butyl rubber, used in gas masks, tyres and as a fuel additive.

Plesch found that traces of water in addition to the titanium tetrachloride catalyst are necessary for the reaction to be successful, leading to his conclusion that water acted as what he termed a “co-catalyst” in the process. His later research continued to focus on polymerisation reactions, particularly those, such as the polymerisation of isobutylene, that involve molecules bearing a positive charge. His work led to significant progress in understanding such “cationic polymerisations”.

In addition to his many papers, he published several books including *The Chemistry of Cationic Polymerisation* in 1963 and *Developments in the Theory of Cationoid Polymerisations* in 2002.

Peter Hariolf Plesch was born in Frankfurt am Main in 1918, to Janos and Melanie Plesch. His German mother came from the family that owned the Cassella dye factory, while his Hungarian father was an eminent doctor whose patients included Albert Einstein and, after the family moved to England, John Maynard Keynes.

In the early 1930s the Plesch family fled the Nazis and moved to England. Peter went to Harrow School then Trinity College, Cambridge, where he studied natural sciences. There he spent several summers working in the recently established department of colloid science under Jack Schulman. In 1942 Plesch began work at Cefoil where he was involved in developing a low-density, rigid foam with properties similar to balsa wood for use in fighter aircraft. He began research for a PhD at the University of Manchester in 1944 in the group of Michael Polanyi, who had known his father in Berlin. After his PhD Plesch became an assistant lecturer at the university, and in 1951 was one of the founders of what became Keele University.

Plesch was a key figure in creating Keele’s chemistry syllabus and lectured widely around the world on polymer chemistry. His research remained focused on probing the mechanisms underlying polymerisation reactions, including those that he termed “pseudo-cationic”, while he also devised many experimental techniques and apparatus to aid investigations. He became known as an authority in the field of cationic polymerisations and rose through the academic ranks, becoming a reader and later receiving a chair in physical chemistry in 1978. Retiring in 1985, Plesch published his last scientific paper in 2008. He was awarded a ScD from Cambridge University in 1970.

He is survived by his second wife, Traudi, two sons and a daughter from his first marriage and a stepson from his second.

**Professor Peter Plesch, chemist, was born on February 14, 1918. He died on March 5, 2013, aged 95**