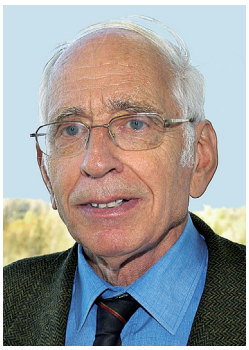
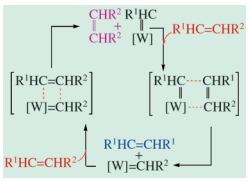


Yves Chauvin



Yves Chauvin (1930–2015)

Yves Chauvin passed away at the age of 84 on January 27, 2015. We have lost a remarkable man and a prominent scientist who made momentous contributions to the field of homogeneous catalysis. He received the Nobel Prize in Chemistry in 2005 jointly with Robert H. Grubbs and Richard R. Schrock for his discoveries relating to the mechanism of olefin metathesis, a reaction that is now applied in numerous fields, as well as in industry. His fundamental scientific understanding of processes and mechanisms, and his visionary insights inspired everyone around him.

Chauvin was born to French parents in Menin (Belgium), near the French border. He graduated from the École Supérieure de Chimie Industrielle de Lyon (now the École Supérieure de Chimie Physique Électronique de Lyon), in 1957. Various circumstances prevented him from pursuing a doctoral degree, which he always regretted. He started his industrial career in process development at Progil Lyon in 1958, but he left the company two years later, eager to explore new fields and ideas. He subsequently joined the Institut Français du Pétrole, now IFP Energies nouvelles, in 1960, and remained loyal to it until his retirement in 1995. He was fascinated and inspired by a number of breakthroughs at that time, for example the work by Karl Ziegler and Giulio Natta on olefin polymerization, Günther Wilke and Borislav Bogdanović on nickel-catalyzed olefin dimerization, and Geoffrey Wilkinson on rhodium-catalyzed hydrogenation. Chauvin decided to focus his early research on coordination/organometallic chemistry and homogeneous catalysis with transition-metal complexes. This discipline was embryonic in France and not yet used in the oil industry, which relied essentially on heterogeneous catalysts. Chauvin soon became France's foremost expert in homogeneous catalysis.

Chauvin looked back at 1964 as a decisive year. Three discoveries, namely the heterogeneously catalyzed disproportionation of olefins reported by Robert L. Banks from Phillips Petroleum, the homogeneous polymerization of cyclopentene published by Natta, and the new metal–carbon bond, in the carbenes, described by Ernst Otto Fischer, which seemingly had nothing in common, led to Chauvin's major breakthrough on metathesis. The mechanism rationalized by Chauvin was later acclaimed by the entire scientific community. Apart from his work on metathesis, Chauvin investigated a large number of catalytic reactions such as polymerization and oligomerization reactions, carbonylation, hydrogenation, isomerization, and C–C coupling. He took a particular interest in asymmetric amino acid synthesis.

Chauvin strongly believed that fundamental research was vital to applied research and vice versa. He was able to contribute to improving industrial processes while using them for inspiration. Industrial applications were indeed his prime focus, and his research laboratory work resulted in the development of two key industrial processes in the field of homogenous transition-metal-catalyzed olefin oligomerization for refining or for petrochemistry. Chauvin was an unusually creative and successful researcher. He had no doubt that teamwork throughout the whole chain was the key to success. His research findings are the basis for more than 100 industrial processes that have been licensed worldwide.

Driven by curiosity, passionate for science, always an avid reader of the literature, Chauvin had the ability to bridge the gap between fields that ignored each other. In the early 1990s, his last discovery involved applying ionic liquids, which were used as electrolytes to extend the "electrochemical windows" of batteries, as solvents for catalysis. His findings paved the way for applications in various areas and sparked keen interest from academia and industry. This was the perfect illustration of how pure science can be applied to benefit both the economy and the environment.

In addition to his Nobel Prize, Chauvin, who was a member of the French Académie des Sciences, received several other distinctions including the Carl Engler medal of the Deutsche Wissenschaftliche Gesellschaft für Erdöl, Erdgas und Kohle (DGKM) in 1994. He was appointed "Grand Officier" of the Ordre National du Mérite (French National Order of Merit) in 2005 and was elevated to the highest class of "Grand-Croix" on January 21, 2015.

Chauvin was also unpretentious, approachable, and keen to provide sensitive, individual guidance. He was fond of younger people, PhD students, and postdocs, and advised and encouraged them to develop their own ideas. Chauvin continued to work in research until the end of his life. He will be remembered for his impressive expertise, relentless inspiration, inquisitive mind, and passion for fundamental and applied science, as well as his loyalty and modesty. We will treasure the memories of the times we were fortunate to share with him.

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International Edition: DOI: 10.1002/anie.201501336
German Edition: DOI: 10.1002/ange.201501336