

## Emeritus Professor Bernard Shaw, FRS

*Colleagues will be sorry to learn of the death, on 8 November 2020, of Bernard Shaw, Emeritus Professor and former Head of Inorganic Chemistry. The following tribute has been contributed by Professor Colin Fishwick, Head of the School of Chemistry.*

After a first degree and doctorate at the University of Manchester, Bernard Shaw spent three years in the Scientific Civil Service and five years at ICI before coming to Leeds in 1962 as Lecturer in the Department of Inorganic and Structural Chemistry. He was promoted to Reader in 1966, a Personal Chair in 1971, and Head of Inorganic Chemistry in 1990.

Working at ICI with the late Joseph Chatt in the then infant field of organometallic chemistry, he described for the first time reactions now known to every undergraduate chemistry student as oxidative addition and reductive elimination. This flow of seminal work continued after his arrival in Leeds.

In a distinguished career spanning more than 60 years, Bernard contributed greatly to our understanding of the bonding, stereochemistry, directional electronic effects, and reaction mechanisms of transition metal complexes, and was amongst the first to introduce the concept of oxidative addition for the synthesis of a wide range of complexes of platinum, iridium, or rhodium.

He showed that transition metal complexes with bulky tertiary phosphine ligands have remarkable physical properties and unusual chemical and catalytic reactivity. He also reported the first non-organometallic (i.e. lacking a metal-carbon bond) platinum hydride.

Furthermore, he conducted pioneering work on the chemistry of organotransition metal compounds, especially pi-allylic and transition metal hydrides and reported one of the first 'pincer' complexes via the orthometalation of 1,3-C<sub>6</sub>H<sub>4</sub>(CH<sub>2</sub>PBu<sup>t</sup>)<sub>2</sub>, as well as describing the first carboxylate-bridged allylic-palladium and rhodium complexes.

Bernard's work has made major contributions to the chemistry of transition metal complexes now often used or postulated as catalytic intermediates in hydrocarboxylation or hydrosilylation, and in major industrial processes such as olefin isomerisation, hydroformylation, and homogeneous catalytic hydrogenation.

Amongst his various honours and distinctions, he was awarded the Royal Society of Chemistry Tilden Prize in 1974, and was elected Fellow of the Royal Society in 1978 – one of only a handful of Leeds scientists to hold such a prestigious award.

Bernard retired in 1995, at which time the title and status of Emeritus Professor was bestowed upon him.