



A Career in Chemistry

Thomas Patrick Maher

BSc (Hons) 1951

I graduated BSc with Honours in Organic Chemistry from the University of Sydney 1951. 1951 to 1956 I worked at the Coal Research Section CSIRO at North Ryde, NSW, on coal analysis and testing and later in research into fundamental coal constitution. 1956 to 1958 I did research in the Coal Chemistry Section, Illinois State Geological Survey, USA into changes in acidic oxygen-containing groups during oxidation and pyrolysis using non-aqueous titrimetry and other techniques. I returned to Australia in 1958 to take up a position with the new Department of Fuel Technology at the University of New South Wales doing teaching and research into the volatile products of low-temperature pyrolysis of coal in static and fluidised beds by gas chromatography and associated methods until 1978.

In 1964 I received my MSc and in 1970 my PhD in Chemical Engineering (Fuel Technology) at the University of New South Wales.

Between 1975 and 1976 I spent study leave from the University of New South Wales at the Illinois State Geological Survey doing research into the fate of trace elements in coal during low-temperature pyrolysis.

From 1978 to 1992 I joined the Joint Coal Board of Australia, as Fuel Technologist. Later I was promoted to Manager Fuel Technology and Director Coal Utilisation. This included giving advice on coal quality and properties, general laboratory supervision and administration; research (in collaboration with CSIRO) on coal preparation, coal thermoplasticity, development of an apparatus for proton magnetic resonance thermal analysis (PMRTA) of coal, coal blending for coke making by PMRTA, computer model for selection of thermal coals and blending (ICVM); studies of coal and the environment, greenhouse effect, coal classification, etc).

I was Joint Coal Board representative on the Standards Australia Coal Committee, Coal Evaluation Sub-committee and various working groups. I was convener of the Coal Classification Working Group and Australian representative at the International Standards Organisation meetings in Australia and in Lexington, Kentucky, USA. I was a member of the Australian Coal Trade and Technology Committee Working Group and a lecturer to several United Nations Development Programs (UNDP) coal technology courses.

I retired in 1992. However, from 1992 to 1999 I was invited to become an Honorary Research Fellow at CSIRO Division of Energy Technology at North Ryde, NSW. I participated in research into the application of PMRTA to the study of coal science and technology, particularly coal fusibility in coking and prediction of fusibility of blends. I co-authored a review of the occurrence of water in coal and coordinated a chapter on "Coal Resources, Quality and Utilisation" for the book "Geology of Australia Coal Basins", C.R. Ward et al (Eds.) 1995.

I am the author or joint-author of 60 scientific and technical publications.