

## Obituary:

Desmond Cunningham (1942-2006)



Des Cunningham, who died on 18<sup>th</sup> September 2006, was a Chemistry Professor at the National University of Ireland, Galway (Ollscoil na hÉireann, Gaillimh). He was a much loved academic and his passing represents a sad loss for the chemistry and crystallographic community in Ireland. His research, (with more than 175 papers), was principally focused on the synthesis and characterisation of Group 14 derivatives using Mössbauer spectroscopy and X-ray diffraction techniques, make him a key figure in the development and promotion of Inorganic chemistry in Ireland from the 1970s.

He was born on March 6<sup>th</sup> 1942 and grew up in Mountcharles in County Donegal, where his father was a school principal. In his early years both music and painting competed with his interest in science. He chose chemistry when a career decision had to be made and was educated at University College Dublin. He studied synthetic inorganic chemistry (1965-1968) on 'Studies on

Chromium(III) Alkoxides' under the supervision of Dr. W. K. Glass and was awarded a Ph.D. degree for this research from the National University of Ireland.

Post-doctoral research in London, in the then Northern Polytechnic, introduced Des to the chemistry of tin which subsequently became a life long interest in conjunction with Mössbauer spectroscopy. In 1971 he moved to a lectureship in University College Galway and established a thriving research group engaged in the study of Group 14 and transition metal complexes. Research included synthetic and structural studies on metal phenylphosphonates/phenylarsonates, heterobimetallic Schiff bases and metal oxides.

Des had a strong interest in solid state chemistry and had often dreamed of establishing a crystallography group in Ireland. In the late 1970s he spent a year on sabbatical leave in Oklahoma, USA where he gained considerable expertise in using diffraction equipment and running a crystallography laboratory. From this experience the Crystallography Centre in Galway was established with collaboration from Patrick McArdle and Tim Higgins. Initially a Hilger & Watts Y290 4-circle diffractometer was used for data collection (from George Ferguson, University of Guelph, Canada). The positive impact of this diffractometer was immediate, driving research in new directions in synthetic and structural chemistry both in Galway and in collaboration with other Irish research institutions. Two successive HEA large equipment grants followed and provided further funding for more modern equipment to pursue and expand research in chemical crystallography, powder diffraction and biological crystallography.

Des had extensive collaborations with industry in Ireland. A pharmaceutical company had a major problem with a tin catalysed reaction using a process that produced the desired drug in 1h but left a tin oxide 'mess' that took *many* hours to clean up. Production runs were limited to only one per day. Des and co-workers overcame the problem using inexpensive chemicals by turning the 'mess' into a white powder that was easier to handle. Production was tripled in all plants in which the drug was produced (which represented >20% of the companies worldwide profits). More recently, he together with co-workers developed a process for coating glass (and other materials) with tin and other metal oxides. This process has been patented and is superior to existing

methods. These very thin oxide coatings make plate glass windows and glass bottles much stronger than uncoated glass.

During his recent illness he was always optimistic and continued to involve himself in much chemistry correcting theses and suggesting reactions from his hospital bed. Several fascinating compounds were synthesised by his research students and their crystal structures solved and examined by him in the days before he died.

The funeral Mass for Des was celebrated in Moycullen Church, Co. Galway. In a ceremony that was punctuated by anecdote, verse and song, the congregation were moved from tears to laughter. Afterwards, Des was laid to rest in the graveyard beside Moycullen Church.

Des thought well of everyone and thus he had more friends than most. The wonderful atmosphere he could create with his personality, his music and his love of painting will long be remembered by all who knew him. He was very friendly and sociable and appreciated a well poured pint of stout amongst friends - a life long interest which hadn't diminished with age. He was an excellent teacher, mentor and friend to the many students that he taught as undergraduates or supervised as postgraduate students as well as his colleagues and friends. He will be missed by the many people that he met throughout his life.

Des was a dedicated family man and is survived by his wife Patsy, his daughter Aileen, his brother Conal and his sisters Shelia and Catherine.

*Patrick McArdle (NUI Galway), John Gallagher (Dublin City University) and John McGinley (NUI Maynooth).*