

Anthony (Tony) David Woolhouse, FNZIC (1946-2014)



Tony gained his 1st Class MSc with J.T. Craig in the Chemistry Department at Victoria University of Wellington (VUW) in 1969. He was contracted to the Wellington Hospital Board (Metabolic Unit) where he worked in 1968 and then through the 1970 year, winning the Institute of Medical Laboratory Technology Hilder Memorial prize for his 1971 publication

in their journal. However, he was drawn to a higher degree and he returned to VUW in February 1971 to undertake study as Brian Halton's first PhD student. Tony produced 10 papers from the VUW research, involving the chemistry of ring expanded naphthalenes, triazolines and cyclopropabenzene. The significant number of publications from these years attests to Tony's superb pair of hands in the laboratory and the passionate dedication that enabled him to be such a productive chemist. After PhD graduation in September 1973, some 30 months after starting, Tony went to work with Professor Charles Rees at the University of Liverpool. He gained two publications concerning cycloaddition reactions from his year there.

After returning to NZ for the spring of 1974, Tony joined Chemistry Division of DSIR at Gracefield in March 1975. There, his research began with the chemistry of lignin, a phenolic component of wood, that was of interest in the discolouration of paper from residues in paper pulp. Tony contributed to three papers in this area and he also managed to keep up with an early interest in photochemistry, publishing four papers over 1978-80. Being then highly regarded by DSIR Chemistry Director, Dr Gordon Leary, Tony was awarded study leave to work with Al Padwa at Emory University in Atlanta, Georgia, USA. In Atlanta, Tony's high work output generated three more papers and a chapter in *Comprehensive Heterocyclic Chemistry* co-authored with Padwa. Such was the admiration he gained for Padwa, Tony attended Padwa's graduate lecture course and kept the notes he took alongside his desk in his office, where they remain today.

The NZ 'think big' era in the early 1980's saw oil exploration expanded in Taranaki and elsewhere. Tony became involved when DSIR Geology asked for help from chemists. Organic biomarkers in oils are the chemical residues of the algae and plant materials from which gas and oil deposits are formed. Tony's work on NZ biomarkers produced 13 papers about the geochemistry of sediments

where the biomarkers are used to aid the source identification and assist in drilling operations.

Tony also worked with the pheromones of NZ insect and animal pests - native leaf roller moths were a kiwifruit orchard pest and ferrets and stoats were predators of native birds. Research with insects, ferrets, opossums and wild cats generated a further 20 papers as he worked on new methods for luring pests into traps.

After 1992 and the formation of Industrial Research Limited (IRL), Tony's career took him back to light activated molecules that were intended for use as laser dyes and the active components in *all optical* switching devices and rewritable holograms. Tony co-authored 32 papers in this area and the optoelectronics and photonics groups now operating at Callaghan Innovation resulted from this initiative.

Tony took the opportunity in 2002 to transfer to the IRL subsidiary, Biopharm - a large scale producer of pharmaceutical products from the fermentation of microorganisms that serviced major overseas pharmaceutical company clients. Tony revelled in scale-up work, being comfortable with the 1,000 litre vessels and kilograms of material. He developed processes that purified crude fermentation material into drug precursors - the warheads required for targeted anti-cancer agents.

Tony returned to laboratory chemistry with the IRL Carbohydrate Chemistry Team in 2006, where he made inhibitors of nucleoside processing enzymes that resulted in 2 papers and a patent. A related study of other possible enzyme inhibitors produced 2 papers detailing novel chiral chemicals.

In 2013, yet another new challenge saw Tony involved with a project for New Zealand Pharmaceuticals Ltd (NZP), for whom he synthesised a large number of novel molecules. Tony became a very popular member of the NZP laboratory team during a four month secondment to Palmerston North with them.

Tony transferred with his colleagues to be a foundation member of the Ferrier Research Institute at Victoria University at the start of 2014, completing the journey back to his *Alma Mater*. His final project was to successfully make a compound required by a VUW colleague for a new technology aimed at measuring very low levels of the male hormone testosterone in water.

There are very few organic chemists who have made such significant contributions to as wide a range of fields as Tony, nor many who were as uniformly liked and admired. In the view of Professor Halton, Tony had one of the best pair of hands in laboratory chemistry in NZ. He will be sadly missed by all.

Contributed by his VUW colleagues, Doug Crump, Richard Furneaux and Brian Halton