

Obituary

In Memoriam of Brian McNicol



Brian McNicol
1941–2006

We are saddened to learn of the death of Brian McNicol in February 2006; he was a notable fuel cell scientist and long-term member of the Editorial Board of the *Journal of Power Sources*.

Brian graduated with a B.Sc. (First Class Honours) in chemistry from Glasgow University in 1962 and gained his Ph.D. there in 1966. He was then awarded a post-doctoral research fellowship at the National Research Council of Canada in Ottawa.

In 1968, Brian joined the Koninklijke-Shell Laboratorium in Amsterdam to find better catalysts for the manufacture of petrol (gasoline). Through this work, he pioneered the development of Temperature Programmed Reduction (TPR) as a fast and easy means of obtaining detailed information on the identity and condition of species present both in and on solids. The technique is particularly valuable in determining the influence of support materials, preparation procedures and metal additives on catalyst reducibility. Accordingly, it continues to be used widely

for the finger-printing and quality control of industrial catalysts. In 1982, Brian and co-workers provided the first review of the thermodynamics, kinetics and mechanisms of TPR with illustrative examples taken from studies on many supported and unsupported oxides [N.W. Hurst, S.D.J. Gentry, A. Jones, B.D. McNicol, *Catal. Rev.*, 24(2) (1983) 233]. Later, with A. Jones, he produced the definitive text: *Temperature-Programmed Reduction for Solid Materials Characterization* [Marcel Dekker, Inc., New York, USA, 1986].

Brian was next invited to apply his catalysis expertise to the solution of electrocatalyst problems associated with fuel cells. He assumed the leadership of a team dedicated to the advancement of direct methanol systems at the Shell Thornton Research Centre (now Cheshire Innovation Park) near Chester, UK. The research showed how the surface composition of alloy catalysts can play a crucial role in determining catalytic activity. This seminal observation explained the wide differences in performance for a given bulk metal combination that were being found in different laboratories. The Shell team used their expertise to develop highly active platinum–ruthenium catalysts for the electro-oxidation of methanol [B.D. McNicol, R.T. Short, *J. Electroanal. Chem.*, 81 (1977) 249]. Until the present day, these materials have provided the benchmark for continuing efforts to improve the electrocatalytic performance of direct methanol fuel cells. Brian's definitive papers, starting 30 years ago [B.D. McNicol, R.T. Short, A.G. Chapman, *Faraday Transactions*, 1 (1976) 2735]—long before the current and intense interest in this fuel cell technology—remain key references in the field, are frequently quoted, and are still unchallenged.

After being seconded to Shell Central Office in London to serve as Program Director of Management Training, Brian returned to Thornton as Head of the Analytical Department and, subsequently, of the Industrial Lubricants Department.

Brian completed his full-time employment as the Director of Research at Kuwait Petroleum Research & Technology in Rotterdam.

These later moves into other areas of endeavour did not, however, diminish Brian's interest in electrochemical power sources. For example, he co-edited *Power Sources for Electric Vehicles* (published in 1984 with opening remarks from His Royal Highness The Duke of Edinburgh), joined the Editorial Board of the *Journal of Power Sources* in 1996, and was a vigorous contribu-

tor to discussions at Grove Symposia. Brian worked hard to keep his scientific knowledge up to date and was generous in sharing his analysis of new developments in fuel cell technology through his regular e-mail communications that he continued freely to circulate up until shortly before his untimely death. He always held a open view of the future of fuel cells by evenly recognizing both their prospects and their limitations, as exemplified by his thought-provoking ‘The Oil Industry Response to the Challenge of Fuel Cells’ [*Fuel Cells Bulletin*, 2(9) (1999) 6] and ‘Fuel Cells for Road Transportation Purposes: Yes or No?’ [*J. Power Sources*, 100 (2001) 47], both of which have become highly cited articles.

Brian also provided expert advice to the European Commission’s Research Framework Programme, both as a reviewer and as an editor of technical publications in the field of fuel cells and hydrogen. His judgement and common sense could be relied upon, and he quickly homed in on critical issues—a rare ability. Moreover, he brought with him a pawky sense of humour that was always appreciated, especially when working long hours to tight timetables. He could defuse difficult discussions with light-hearted comment.

The many tributes that we have received all bear testament to Brian’s international recognition for his many outstanding scientific contributions, and to his charismatic and dynamic personality. These qualities, coupled with his inimitable sense of fun and generosity of spirit, made him a host of friends across the world. Perhaps his best epitaph comes from one of his oldest friends: “a good, faithful and hugely lovable friend with whom I shared ideas and ideals, and much pleasure and laughter”. He will remain greatly respected, both by those who have had the privilege of meeting him and by those who have studied his published works.

Brian is survived by his wife Janet, daughters Rhonda and Hayley, sons-in-law Martin and Jonathan and granddaughter Madeline, to whom we extend our sincere condolences.

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