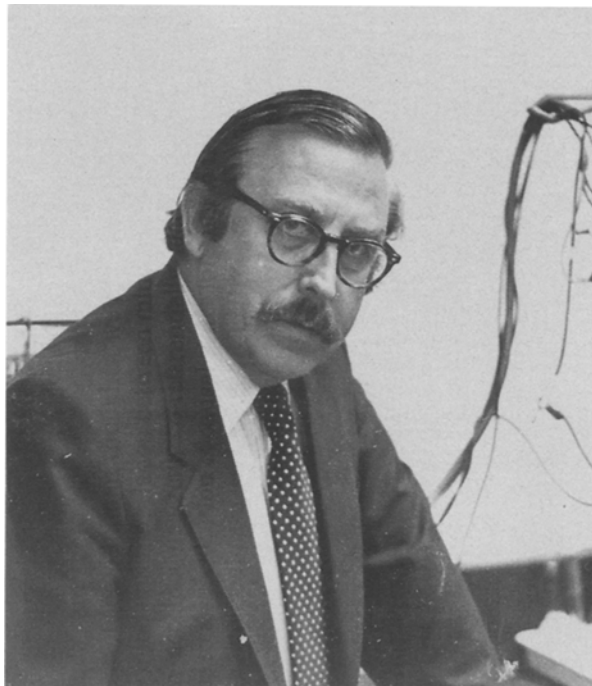


Brian E. Conway



This issue is a tribute to Professor Brian E. Conway on his 65th birthday from a small group of old and more recent friends and colleagues and previous co-workers. Brian Conway is not retiring — he has just been appointed Emeritus Research Professor at the University of Ottawa and will carry on actively for at least another five years. There will therefore be further occasions for celebration of the achievements of his scientific career. The invitation to contribute papers on this occasion has been extended to a restricted number of colleagues, in some respects particularly close to him.

The choice of this journal has not been without specific reasons. Although Brian Conway has always worked in Universities, with consequent particular attention to fundamental research, his scientific production bears a clear sign of 'applicability', this being especially the case with his more recent papers dealing with electrocatalysis in the H_2 , O_2 and Cl_2 evolution reactions, oxide electrodes, F_2 production and supercapacitors. At the same time, the importance of his contributions to theory and other fundamental directions of electrochemistry has also been recognised internationally, as proven by the awards lately received from the Electrochemical Society (Olin Palladium Medal, 1989) and the Italian Chemical Society (Luigi Galvani Medal, 1991).

Brian E. Conway, born in London on 26th January 1926, completed all his studies in that city, obtaining his BSc in 1946 and PhD in 1949 at Imperial College, and the DSc from the University of London in 1961. After five years as Research Lecturer at the Chester Beatty Research Institute of the University of London with J. A. V. Butler, he moved to the New World in 1954, spending two years in Philadelphia as an Assis-

tant Professor at the University of Pennsylvania and finally landing at the University of Ottawa where his subsequent career has developed. Following an Associate Professorship in 1956–62, he became Professor of Chemistry in 1962 and was appointed Alcan Research Professor of Electrochemistry in 1987. For two terms, 1966–69 and 1975–80, he was chairman of the Department of Chemistry.

Two aspects of Brian Conway's scientific activity are particularly noteworthy; his productivity and his versatility. He is author of about 350 papers, the first publication dating back to 1947 at the age of 20 (with John Bockris). He has also authored three well received books, the more recent being the monumental monograph on Ionic Hydration in Chemistry and Biophysics (1982). He has also contributed 20 chapters in multiauthored monographs, besides a number of review articles. Moreover, he edited a book on Chemical Physics of Ionic Solutions with R. G. Barradas (1966), and has been co-editor of the whole series Modern Aspects of Electrochemistry (23 volumes) and of the Treatise of Electrochemistry (10 volumes).

The versatility of his research work is demonstrated by the variety of the themes encompassing fundamental and applied electrochemistry. In the former field his work has covered the electrochemistry of charged interfaces, surface science and electrocatalysis, studies of kinetics of charge transfer and electrode processes, ionic solutions, including polyelectrolytes and ionic solvation, as well as basic aspects and microscopic processes in cathodic metal deposition.

In the field of applied electrochemistry, Brian Conway has contributed to the study of H_2 production by water electrolysis, the development of reversible battery cathode materials and 'super-capacitors', the

commercial processes of F_2 and Cl_2 production, energy conversion, H_2 penetration into metals, co-deposition of hydrogen in base-metal plating, behaviour of amorphous metals, low-T and high-T electrode processes, anodic and cathodic processes in corrosion, as well as porous electrode materials (noble metal and other hydrous oxides).

While it is impossible to list all the topics studied by Brian Conway, some deserve special mention because of their originality and their significant impact on the scientific literature. These include the dielectric behaviour of the double layer (first studies, 1951), H_2 evolution reaction rate and metal work function (1957), the anodic Kolbe reaction (1961), treatment of pseudo-capacitance associated with adsorption of active intermediates (1962), development of methods for evaluation of properties of individual ions in aqueous solutions (1966), identification of the very initial stages of metal oxidation and the effect of anions thereon (1968), measurement of the Tafel slope for H_2 evolution on Hg and Ni over a $190^\circ C$ range of temperature and the consequent theory on the effect of the potential on the entropy of activation (1969), first treatment of the entropy of a solvent monolayer in the double layer (1969), anodic H desorption effects in the adsorption of organics on Pt (1971), discovery of one of the first 'chemically modified electrodes' (CH_3CN on Pt) (1972), ultrapurification of water by 'pyrodistillation' (1973), quantitative relations between solvent polarization at electrodes and at ions and the problem of ion solvation shell co-sphere overlap (1977), the mechanism of Cl_2 evolution on Pt (1979), comparison of the discharge of H^+ from H_3O^+ and $H_5O_4^+$ using pure $CF_3SO_3^-$ (1981), determination of 'overpotential-deposited' ad-species and elucidation of their role in electrocatalysis using potential-decay transients (1984).

While the appreciation of his activity in the applied field is demonstrated by his being consultant for a number of companies, the importance of his fundamental studies has been recognised a number of times as proven — besides the Palladium and the Galvani Medals mentioned above — by the Noranda Award (1964), the Chemical Institute of Canada's Palladium Medal (1975), the ACS Kendall Award For Surface Chemistry (1984), the ES H. Linford medal (1984), and the ES (Canadian Section) Gold Medal (1986).

Notwithstanding his prestigious international position, Brian Conway has maintained an intellectual humility which is one of the most remarkable features of his personality and which makes him easily and pleasantly approachable by anybody wishing to interact with him. His kindness, modesty and unassuming personality, together with a natural reserve, lend a human cordiality which is apparent on first meeting.

Little time remains to Brian for extra-scientific activities but, besides travelling, and an appreciation of baroque music, he has a love of sports cars, and his Alfa Romeo Spider bears witness to this!

Brian Conway's present research group consists of about 8 graduate students, 3 post-doctoral fellows and 2 senior research associates. His capacity for work is impressive and remains unabated; he supervises research work directly and writes his papers personally. The electrochemical fraternity wishes Brian Conway many more years of fruitful and enjoyable scientific activity, and a continued presence on the international scene.

S. Trasatti, Milan
A. A. Wragg, Exeter
November 1992