

The History of the Industrial Physical Chemistry Group – the early years

J D F Ramsay

Preface

The earliest roots of the Industrial Physical Chemistry Group go back to

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1. The Industrial Physical Chemistry Group – history and origins

The Industrial Physical Chemistry Group (IPCG) is a subject group of the Faraday Division of the Royal Society of Chemistry. Its origins go back over 40 years and it is rather exceptional amongst other subject groups because it has a broad remit and was not formed to cover a specialized research field in physical chemistry. Furthermore the driving force for its foundation came from the inspiration of a group of research directors of several of the largest UK chemical companies, and in particular Dr. B. A. Pethica, who was at the time director of the Unilever Research Laboratory at Port Sunlight in Cheshire, and a member of the Council of the Faraday Society.

In 1969 a SubCommittee was appointed by the Council to explore how closer links between academic and industrial research be promoted by the Faraday Society. This committee met twice at Unilever House and the minutes

The other Committee members duly appointed were Mr. D.A. Dowden (section manager Catalytic Chemistry, ICI), Dr. J.N. Haresnape (Manager, B.P. Research Centre, Sunbury-Thames), Dr. G.L. Kington, (Director of Research, The British Aluminium Co. Ltd) and Dr. E.R.S. Winter, J.E. Sturge Ltd.). The ex officio members of the Industrial Committee at this time were Professor G. Gee, FRS (President of the Faraday Society), Professor J. S Rowlinson, FRS (Treasurer of the Faraday Society) and Professor F. C. Tompkins, FRS (Secretary of the Faraday Society).

During this period the Council of the Faraday Society had been conducting negotiations with the Chemical Society and the Royal Institute of Chemistry with regard to the amalgamation to form the new Chemical Society. Following a referendum of the membership of Faraday Society in 1970 incorporation went ahead and was formally instituted on 1st January 1972. Under this agreement the Faraday Society ceased to exist independently as a Limited Liability Company and was liquidated and its assets transferred to the new Chemical Society. The new Chemical Society was comprised of the following Divisions: Faraday, Organic, Inorganic, Educational, Industrial and Analytical. The Faraday Division, the original Faraday Society, became the new division of physical chemistry of the new Chemical Society. The Industrial Committee still continued in the Faraday Division, despite there being an Industrial Division; it also retained its financial independence and continued to be auto-financing.

Until the mid 1970's the sub committee met regularly under the chairmanship of Dr Pethica usually in the Charing Cross Hotel, and organized a series of successful meetings, some of which were the basis of Faraday Discussions and Symposia (

Council via Dr Pethica. Consequently it differed from other ~~units~~ of the Faraday Division since it did not serve a membership.

These issues were considered at a ~~Sub~~committee held at the BP Research Centre, Sunbury-on-Thames, on 26th April, 1977. Professor Everett, FRS, proposed that he would suggest to Council that the Industrial Sub-Committee should become a Sub-Committee of the Standing Sub-Committee on Conferences of the Faraday Division. Its aims would be to identify areas of physical chemistry of industrial interest suitable for formal or informal discussion. It would thus have an official recognition within a closely defined remit. This proposal was endorsed and it was considered that the ~~Sub~~committee would provide another viewpoint other than from the academic community. A new chairman, Professor F. Franks who was also a member of the Faraday Council, was nominated, together with a new secretary, Dr T Edmonds. It was also agreed that the core membership of the ~~Sub~~committee should be extended. This traditionally included permanent representatives from Unilever, Shell, ICI, BP and Harwell, the President and Treasurer of the Faraday Division and the Chairman of the Standing Sub-Committee on Conferences. Additional members had been ~~co~~opted to organise conferences in their specific area of expertise. Additional representation from NPL, the National Coal Board, the Central Electricity Generating Board, the British Gas Corporation and perhaps Rio Tinto Zinc would be ~~conside~~red.

Unfortunately this reconstitution of the sub committee could however not proceed on the basis of an informal request to the Faraday Council. The then President of the Division, Professor F C Tompkins FRS, insisted that there was a requirement for a ~~formal~~ application to be registered as a subject group, together with 25 signatures of support from Division members.

Consequently in November 1979 the secretary, Professor T Edmonds of the BP Research Centre, addressed a formal letter (see enclosed) to senior

was now able to set up a Trust Fund account for the Group. This enabled the Group, which had been self-financing, to avoid VAT on its turnover related to the informal meetings it organised on average twice per annum.

The Terms of Reference were now formally established (details to follow)

At the next IPCG Committee on 30th April, 1980 it was proposed that the Annual Subscription for IPCG membership should be £ 1.00. This was formally approved by Council on 29th May 1980 and it was agreed that the subscriptions should be transferred in total to the Group to defray administration and other costs. Arrangements were made for details of the new Group to appear in the 1981 subscription renewal form. To promote the Group, announcements were also placed in Chemistry in Britain and Faraday Transactions. These read as follows:

A new Subject Group has recently been approved by Faraday Council. The Industrial Physical Chemistry Group (formerly the Industrial Sub-Committee) Faraday Division aims to identify areas of physical chemistry of importance to industry and where significant developments are taking place, and to organise informal meetings, Discussions or Symposia to discuss relevant topics in these areas. For further details contact Prof. F Franks, Department of Biology, University of Cambridge, Chairman or Prof. T Edmonds, BP Research Centre, Sunbury-on-Thames, Secretary.

The response to join the new Group was very encouraging, with a membership number of 101 on 29th March 1981. At that time there were 11 specialised Subject Groups in the Faraday Division. Despite the broad remit of the IPCG, its membership at its outset was already middle ranking in number, and exceeded several other long established Subject Groups.

2. The Industrial Physical Group – conferences and scientific activities in the first two decades

From its foundation the Group committee was very active in identifying areas of physical chemistry, which were of major importance in a range of industries, and where a greater fundamental understanding was required. Some of these areas, which might have been considered too applied and multidisciplinary to be appropriate for a research

meetings (see appended list), were four highly successful Faraday Discussions: No. 57. Gels and Gelling Processes (1974), No. 61. Precipitation (1976), No. 65. Colloid Stability (1978) and No. 76. Concentrated Colloidal Dispersions (1983)

The Colloid Science Panel was dissolved in June 1972 after reporting. It was reconvened in the autumn of 1974 with a new membership and with

although the policy of holding joint meetings between ICPG and CISG has continued to the present day. It is however of interest to note that the CISG has become one of the most active of any subject Group in the RSC Faraday Division, with one of the largest memberships. Furthermore, in 2002, the CISG and the SCI, Colloid and Surface Chemistry Group, formed the “ Joint Colloids Group”, providing a coherent focus for the UK colloid and interface science community. These later developments are perhaps some testament to the inspiration of Brian Pethica and other members of the original Industrial Committee of the Faraday Society who had earlier promoted colloid science.

3. The Industrial Physical Group – its evolution and role in the RSC of today

It may be of interest to consider in more depth the historical background of the old Faraday Society and of UK chemistry research in the late 1960's when Dr. Pethica and his colleagues who all occupied senior posts in industry, made their attempt to set-up the forerunner of the IPCG

The Faraday Society had been founded in 1903, in honour of Michael Faraday, an outstanding British scientist who had made enormous contributions in the nineteenth century to fundamental understanding in electrochemistry and other fields as well being at the forefront in applied research and innovation. Such a tradition had been reflected by those elected to be the early Presidents of the Society. These were eminent men in their fields who had been creative both in fundamental research and industrial innovation: These included Sir Joseph Swann (1904), Lord Kelvin (1905-1907), Sir William Perkin (1907), Sir Oliver Lodge (1908-1909), Sir James Swinburne (1909-1911)—an electrical engineer and manufacturer, discoverer of Bakelite, who revolutionized the plastics industry, (Sir Richard Glazebrook (1911-1913) first director (until 1919) of the National Physical Laboratory, which was formed in 1899 in Teddington.

This tradition of the Society, in promoting links between basic research and industrial innovation was continued during WWI (Sir Robert Hadfield, FRS, metallurgist, discoverer of manganese steel and owner of Hadfields Steel Foundry in Sheffield) and up until WWII (Sir Robert

Robinson (1922-1924) organic chemist and Nobel prize winner

Hydrogen in Metals, Informal meeting, University of Birmingham, January, 1976.

Aqueous Solution Properties of Synthetic Polymers, Informal meeting, Cranfield Institute, January, 1976.

Precipitation, Faraday General Discussion, No. 61, University of Manchester, April, 1976.

Concentrated Dispersions, Faraday/SCI Symposium, Brunel University, September, 1977.

(note: the above meeting was the precursor of the Faraday General Discussion, No. 76, Concentrated Colloidal Dispersions, Loughborough, September, 1983.)

Molecular Interaction, Microstructure and Rheological Behaviour, Informal Discussion, Cranfield Institute, January, 1978.

Colloid Stability, Faraday General Discussion, No. 65, Lunteren, Netherlands, April, 1978.

Transport across Synthetic Membranes, Informal meeting, Cranfield Institute, January, 1979.

The Physical Chemistry of Non Aqueous Foams, SCI/Faraday meeting, Strathclyde University, Glasgow, April, 1980.

The Physical Chemistry of Microemulsions, Informal meeting, Trinity Hall, Cambridge, September, 1980.

Chromatography, Equilibrium and Kinetics, Faraday Symposium, University of Sussex, December, 1980.

Pyrolysis, Cracking and Degradation, RSC Autumn Meeting joint with Faraday Division, University of Leeds, September, 1981.

Ion Adsorption and Exchange at Inorganic Surfaces, Informal meeting, Girton College, Cambridge, September, 1983.

Metal Polymer Interface, Informal meeting, Girton College, Cambridge, September, 1984.

Cell Adhesion to Solid Surfaces, Informal meeting, Girton College, Cambridge, September, 1984.

Laser Spectroscopy Techniques in Solid/Gas Reactions, Joint SCI meeting, SCI, London, May, 1985.

Water Activity, Informal meeting, Girton College, Cambridge, July, 1985.

Molecular Approach to Lubrication and Wear, Informal meeting, Girton College, Cambridge, September, 1985.

Physical Chemistry of Water Soluble Polymers, Informal meeting, Girton College, Cambridge, September 1986.

Interfacial Reactions in Semi-Conductor Device Processing, Joint Institute of Physics meeting, Girton College, Cambridge, July, 1987.

Physical Chemistry of Carbohydrate Solutions, Joint meeting, Regensburg, W. Germany, August, 1987.

Interactions of Biologically Active molecules with Membranes, Informal meeting, Girton College, Cambridge, September, 1987.

Applications of Neutron Scattering in Colloid and Surface Chemistry, Joint SCI meeting, SCI, London, September, 1988.

Materials for Nonlinear and Electrooptics, Informal meeting, Girton College, Cambridge, July, 1989.

Drilling Fluids in the Oil Industry, Joint SCI meeting, Royal Holloway and Bedford College, London, September, 1990.

