

## JOURNAL OF THE CHEMICAL SOCIETY

### FARADAY TRANSACTIONS, PARTS I AND II

The *Journal of the Chemical Society* is published in six sections, of which five are termed *Transactions*; these are distinguished by their subject matter, as follows:

*Dalton Transactions* (Inorganic Chemistry). All aspects of the chemistry of inorganic and organometallic compounds; including bioinorganic chemistry and solid-state inorganic chemistry; of their structures, properties, and reactions, including kinetics and mechanisms; new or improved experimental techniques and syntheses.

*Faraday Transactions I* (Physical Chemistry). Radiation chemistry, gas-phase kinetics, electrochemistry (other than preparative), surface and interfacial chemistry, heterogeneous catalysis, physical properties of polymers and their solutions, and kinetics of polymerization, *etc.*

*Faraday Transactions II* (Chemical Physics). Theoretical chemistry, especially valence and quantum theory, statistical mechanics, intermolecular forces, relaxation phenomena, spectroscopic studies (including i.r., e.s.r., n.m.r., and kinetic spectroscopy, *etc.*) leading to assignments of quantum states, and fundamental theory. Studies of impurities in solid systems.

*Perkin Transactions I* (Organic Chemistry). All aspects of synthetic and natural product organic, organometallic and bio-organic chemistry, including aliphatic, alicyclic, and aromatic systems (carbocyclic and heterocyclic).

*Perkin Transactions II* (Physical Organic Chemistry). Kinetic and mechanistic studies of organic, organometallic and bio-organic reactions. The description and application of physicochemical, spectroscopic, and theoretical procedures to organic chemistry, including structure-activity relationships. Physical aspects of bio-organic chemistry and of organic compounds, including polymers and biopolymers.

Authors are requested to indicate, at the time they submit a typescript, the journal for which it is intended. Should this seem unsuitable, the Editor will inform the author.

The sixth section of the *Journal of the Chemical Society* is *Chemical Communications*, which is intended as a forum for preliminary accounts of original and significant work, in any area of chemistry that is likely to prove of wide general appeal or exceptional specialist interest. Such preliminary reports should be followed up eventually by full papers in other journals (*e.g.* the five *Transactions*) providing detailed accounts of the work.

### NOTES

It has always been the policy of the Faraday Transactions that brevity should not be a factor influencing acceptability for publication. In addition however to full papers both sections carry at the end of each issue a section headed 'Notes', which are short self-contained accounts of experimental observations, results, or theory that will not require enlargement into 'full' papers. The Notes section is not used for preliminary communications.

The layout of a Note is the same as that of a paper. Short summaries are required.

The procedure for submission, administration, refereeing, editing and publication of Notes is the same as for full papers. However, Notes are published more quickly than papers since their brevity facilitates processing at all stages.

The Editors endeavour to meet authors' wishes as to whether an article is a full paper or a Note, but since there is no sharp dividing line between the one and the other, either in terms of length or character of content, the right is retained to transfer overlong Notes to the full papers section. As a guide a Note should not exceed 1500 words or word-equivalents.

## NOMENCLATURE AND SYMBOLISM

**Units and Symbols.** The Symbols Committee of The Royal Society, of which The Royal Society of Chemistry is a participating member, has produced a set of recommendations in a pamphlet 'Quantities, Units, and Symbols' (1975) (copies of this pamphlet and further details can be obtained from the Manager, Journals, The Royal Society of Chemistry, Burlington House, London W1V 0BN). These recommendations are applied by The Royal Society of Chemistry in all its publications. Their basis is the 'Système International d'Unités' (SI). A more detailed treatment of units and symbols with specific application to chemistry is given in the *IUPAC Manual of Symbols and Terminology for Physicochemical Quantities and Units* (Pergamon, Oxford, 1979).

**Nomenclature.** For many years the Society has actively encouraged the use of standard IUPAC nomenclature and symbolism in its publications as an aid to the accurate and unambiguous communication of chemical information between authors and readers.

In order to encourage authors to use IUPAC nomenclature rules when drafting papers, attention is drawn to the following publications in which both the rules themselves and guidance on their use are given:

*Nomenclature of Organic Chemistry, Sections A, B, C, D, E, F, and H* (Pergamon, Oxford, 1979 edn).

*Nomenclature of Inorganic Chemistry* (Butterworths, London, 1971, now published by Pergamon).

*Biochemical Nomenclature and Related Documents* (The Biochemical Society, London, 1978).

A complete listing of all IUPAC nomenclature publications appears in the Index issues of *J. Chem. Soc.*, *Faraday Transactions*.

It is recommended that where there are no IUPAC rules for the naming of particular compounds or authors find difficulty in applying the existing rules, they should seek the advice of the Society's editorial staff.

THE FARADAY DIVISION OF THE ROYAL SOCIETY OF CHEMISTRY  
GENERAL DISCUSSION NO. 77

## Interfacial Kinetics in Solution

University of Hull, 9–11 April 1984

This Discussion will focus attention on reactions involving liquid–gas, liquid–liquid and liquid–solid interfaces (but it will not include electrode kinetics as such). The subject encompasses processes of fundamental, industrial and environmental importance and includes such topics as the rate of dissolution of reactive gases, kinetics at liquid membranes, metal and solvent extraction, Marangoni effects, heterogeneous catalysis and photocatalysis in solution, and the kinetics of dissolution of minerals and drugs. The aim of the meeting is to bring together workers in these diverse fields to highlight the complementary nature of the problems encountered and of the results obtained, and to disseminate ideas concerning new and effective experimental techniques and novel theoretical approaches.

The preliminary programme may be obtained from:

**Mrs Y. A. Fish, The Royal Society of Chemistry,  
Burlington House, London W1V 0BN**

THE FARADAY DIVISION OF THE ROYAL SOCIETY OF CHEMISTRY  
GENERAL DISCUSSION NO. 78

## Radicals in Condensed Phases

University of Leicester, 4–6 September 1984

### *Organising Committee*

Professor M. C. R. Symons (Chairman)

Dr G. B. Buxton

Dr T. A. Claxton

Dr K. A. McLauchlan

Professor Lord Tedder

Dr R. L. Willson

The discussion will be primarily concerned with the structure and reactions of radicals in liquids and solids. It is designed to bring together theoretical work on structure, environmental effects and reactivity with spectroscopic and mechanistic studies directly concerned with radicals. Fundamental aspects will be stressed, and particular attention will be given to new developments including measurement at short time intervals, special solvent effects, and the effects of external fields. A special area for inclusion will be electron gain and loss processes including trapped and solvated electrons, electrochemical reactions, and specific electron capture and electron loss in low-temperature systems. Photochemical charge-transfer processes will also be included.

The preliminary programme may be obtained from:

**Mrs Y. A. Fish, The Royal Society of Chemistry,  
Burlington House, London W1V 0BN**

THE FARADAY DIVISION OF THE ROYAL SOCIETY OF CHEMISTRY  
SYMPOSIUM NO. 19

# Molecular Electronic Structure Calculations—Methods and Applications

University of Cambridge, 12–13 December 1984

**N.B. Please note change of date**

Molecular electronic structure calculations have now developed into a powerful predictive tool and are necessary in several different fields to aid the understanding and interpretation of experimental observations. The meeting will review the current state of this rapidly developing discipline and will bring together experts on some of the most advanced methods and their applications. The meeting will provide an opportunity for discussion and comparison of the various techniques currently in use. It will therefore not only be a valuable forum for discussion among research workers in the field, but should also show the non-specialist what theoretical calculations can be expected to achieve now and in the near future.

The preliminary programme may be obtained from:

**Mrs Y. A. Fish, The Royal Society of Chemistry,  
Burlington House, London W1V 0BN**

FARADAY DIVISION OF THE ROYAL SOCIETY OF CHEMISTRY  
GENERAL DISCUSSION NO. 79

# Polymer Liquid Crystals

University of Cambridge, 1–3 April 1985

The object of the meeting will be to discuss all aspects of the developing subject of polymeric liquid crystals. The hope is to bring together scientists from the fields of conventional polymer science and monomeric liquid crystals who are active in this field. The discussion is aimed at understanding the following facets:

- (a) The chemical characteristics that give rise to polymer liquid crystalline behaviour.
- (b) The nature of the high local anisotropy of these systems and their structural organisation at the molecular, micron and macroscopic levels.
- (c) The physical properties and their industrial exploitation, with particular reference to the influence of external force fields such as flow, electric and magnetic fields.
- (d) The inter-relations of polymer liquid crystals with small-molecule mesophases, conventional flexible polymers and biopolymers which exhibit liquid-crystalline behaviour.

Contributions are invited for consideration by the Organising Committee. A title and 300-word abstract should be submitted as soon as convenient and not later than 31 May 1984 to:

**Professor B. R. Jennings, Electro-optics Group, Department of Physics, Brunel University, Uxbridge UB8 3PH.**

FARADAY DIVISION OF THE ROYAL SOCIETY OF CHEMISTRY

## Marlow Medal and Prize

Applications are invited for the award of the Marlow Medal for 1984 and prize of £100. The award will be open to any member of the Faraday Division of the Royal Society of Chemistry who, by the age of 32, had made in the judgement of the Council of the Faraday Division, the most meritorious contribution to physical chemistry or chemical physics. The award will be made on the basis of publications (not necessarily in the Transactions) on any subject normally published in *J. Chem. Soc., Faraday Transactions I and II*, that carry a date of receipt for publication not later than the candidate's 32nd birthday. Candidates should be members and under 34 on 1st January 1984, the closing date for applications, which may be made either by the candidate himself or on his behalf by another member of the Society.

Copies of the rules of the award and application forms may be obtained from Mrs Y. A. Fish, The Royal Society of Chemistry, Burlington House, London W1V 0BN.

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## FARADAY DIVISION INFORMAL AND GROUP MEETINGS

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### *Polymer Physics Group*

#### **The Crosslinking of Polyolefins: Recent Advances**

To be held in London on 7 December 1983

Further information from Dr J. V. Champion, Department of Physics, City of London Polytechnic, 31 Jewry Street, London EC3N 2EY

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### *Polymer Physics Group with Electron Microscopy and Analysis Group of the Institute of Physics*

#### **Structure of Semicrystalline Polymers**

To be held at The Geological Society, Burlington House, London on 12 December 1983

Further information from the Meetings Officer, The Institute of Physics, 47 Belgrave Square, London SW1X 8QX

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### *Neutron Scattering Group*

#### **Neutrons and Materials Studies**

To be held in Oxford on 14 December 1983

Further information from: Dr C. G. Windsor, AERE, Harwell, Oxon OX11 0RA

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### *Colloid and Interface Science Group with the Society for Chemical Industry*

#### **Short-range Interactions and Hydration Forces**

To be held at the Society for Chemical Industries Lecture Theatre, London on 20 December 1983

Further information from Dr R. Aveyard, Department of Chemistry, University of Hull, Hull HU6 7RX

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### *Molecular Beams Group with High Resolution Spectroscopy Group*

#### **Beams and Spectroscopy**

To be held at the University of Nottingham, 18–20 December 1983

Further information from Dr P. Sarre, Department of Chemistry, University of Nottingham, Nottingham NG7 2RD

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### *Carbon Group with Surface Reactivity and Catalysis Group*

#### **Carbon and Catalysis**

To be held in London, 19–20 December 1983

Further information from Dr B. McEnaney, School of Materials Science, University of Bath, Claverton Down, Bath BA2 7AY

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### *Statistical Mechanics and Thermodynamics Group*

#### **Prediction of Fluid Properties**

To be held at Leicester Polytechnic on 5 January 1984

Further information from: Dr R. G. Linford, School of Chemistry, Leicester Polytechnic, PO Box 143, Leicester LE1 9BH

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### *Division*

#### **London Symposium: The Selective Use and Disposal of Energy in Elementary Processes**

(Including the Tilden Lecture by I. W. M. Smith)

To be held at the Scientific Societies Lecture Theatre, London on 9 February 1984

Further information from Mrs Y. A. Fish, The Royal Society of Chemistry, Burlington House, London W1V 0BN

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### *Neutron Scattering Group*

#### **Quantum Molecular Motion in Crystals and Intercalates and on Surfaces**

To be held at the University of Nottingham on 26–28 March 1984

Further information from Professor S. Clough, Department of Physics, University of Nottingham, Nottingham NG7 2RD

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### *Statistical Mechanics and Thermodynamics Group*

#### **Thermodynamics of Mixed Polymer Systems**

To be held at the University of Sheffield on 4–5 April 1984

Further information from Dr G. C. Maitland, Department of Chemical Engineering, Imperial College, London SW7 2BY

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*Division***Annual Congress: Electronic Processes in Thin Films and Novel Conductors**

To be held at the University of Exeter on 16–19 April 1984

Further information from: Dr J. F. Gibson, The Royal Society of Chemistry, Burlington House, London W1V 0BN

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*Electrochemistry Group***Engineering Aspects of Electrochemistry**

To be held at Loughborough University of Technology on 17 April 1984

Further information from Dr N. A. Hampson, Department of Chemistry, Loughborough University of Technology, Loughborough LE11 3TU

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*Industrial Physical Chemistry Group***The Metal–Polymer Interface**

To be held at Girton College, Cambridge on 10–12 July 1984

Further information from Dr T. G. Ryan, ICI New Science Group, PO Box 11, The Heath, Runcorn, Cheshire WA7 4QE

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*Gas Kinetics Group***8th International Symposium on Gas Kinetics**

To be held at the University of Nottingham on 16–20 July 1984

Further information from: Prof. J. P. Simons, Department of Chemistry, University of Nottingham, University Park, Nottingham NG7 2RD

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*Industrial Physical Chemistry Group with the Food Chemistry Group***Cell Adhesion to Solid Surfaces**

To be held at Girton College, Cambridge on 11–13 September 1984

Further information from Dr I. D. Robb, Unilever Research, Port Sunlight, Bebington, Wirral, Merseyside L63 3JW

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*Division with the Gas Kinetics Group***Autumn Meeting: Combustion Chemistry in the Gas Phase**

To be held at the University of Hull, 18–20 September 1984

Further information from Dr R. W. Walker, Department of Chemistry, The University, Hull HU6 7RX

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*Division jointly with the Deutsche Bunsen Gesellschaft für Physikalische Chemie, Société de Chimie Physique and Associazione Italiana di Chimica Fisica***Laser Studies in Reaction Kinetics**

To be held at the Evangelische Akademie, Tutzing, West Germany on 24–27 September 1984

Further information from: Prof. J. Troe, Institut für Physikalische Chemie, Tammannstr 6, Göttingen, West Germany

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*Colloid and Interface Science Group with the Society for Chemical Industry***Foaming, Aeration and Dynamic Surface Tension**

To be held at Imperial College, London on 24–25 September 1984

Further information from: Prof. A. I. Bailey, Department of Chemical Engineering, Imperial College, London SW7 2BY

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*Electrochemistry Group with the Statistical Mechanics and Thermodynamics Group***The Electrical Double Layer**

To be held at the University of Southampton on 25–26 September 1984

Further information from Dr A. J. B. Cutler, Research Division, CERL, Kelvin Avenue, Leatherhead, Surrey KT22 7SE

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*Division***Annual Congress: Solid State Chemistry**

To be held at the University of St Andrews on 26–28 March 1985

Further information from Professor P. A. H. Wyatt, Department of Chemistry, University of St Andrews, St Andrews KY16 9ST

# from The Royal Society of Chemistry Faraday & Faraday Discussions & Symposia

*Faraday Discussions* take place twice a year and are designed to cover the broad aspects of physicochemical topics, thereby encouraging scientists of different disciplines to contribute their varied viewpoints to a common theme.

Three recent *Discussions* are:

## No. 72 Selectivity in Heterogeneous Catalysis

Faraday Discussions  
of the  
Chemical Society  
No. 72  
Selection in  
Heterogeneous Catalysis  
1981

The result of a *Discussion* held at the University of Nottingham, September 1981, this publication covers: Selective Oxidation and Hydrogenation, CO-H<sub>2</sub> and Methanol Reactions, Polymerizations and Enantioselective Processes. Newer catalyst systems to be featured will include: Bimetallics, Shape-selective zeolites and Anchored Complexes.

Soft cover 431pp 0 85186 708 1  
Price £30.75 (\$63.25) RSC Members £20.00

## No. 73 Van der Waals Molecules

Faraday Discussions  
of the  
Chemical Society  
No. 73  
Van der Waals Molecules  
1982

The object of this *Discussion*, held in April 1982 at St. Catherine's College, Oxford, was to increase understanding of Van der Waals Molecules. Topics included in this publication — a result of the above *Discussion* — include:

Spectroscopy and Photophysics of Organic Clusters; Energetics and Dynamics of large Van der Waals Molecules; Van der Waals Molecules and Condensed Phases; Gas-phase Properties and Forces in Van der Waals Molecules; Dimer Spectroscopy; Intermolecular Binding.

Soft cover 431pp 0 85186 688 3  
Price £25.25 (\$51.75) RSC Members £16.50

## No. 74 Electron and Proton Transfer

Faraday Discussions  
of the  
Chemical Society  
No. 74  
Electron and Proton Transfer  
1982

This *Discussion*, the result of a meeting held at the University of Southampton, September 1982, covers: Fundamental Aspects of the Chemical Kinetics of Electron and Proton Transfer Reactions in Solution with particular reference to well defined Biological Systems.

Chapters include: Electron, Proton and Related Transfers; Quantum Effects on Electron-transfer processes; Fast Electron-transfer Reactions; Hydride Transfer between NAD<sup>+</sup> Analogues; Electron and Proton Transfers in Chemical and Biological Quinone Systems.

Softcover 413pp 0 85186 676 6  
Price £25.00 (\$51.00) RSC Members £16.25

*Faraday Symposia* are usually held annually and are confined to more specialised topics than *Discussions*, with particular reference to recent rapidly developing lines of research.

Two recent *symposia*:

## No. 15 Chromatography, Equilibria and Kinetics

Faraday Symposia  
of the  
Chemical Society  
No. 15  
Chromatography,  
Equilibria and Kinetics  
1980

No. 15 in the series is the result of a meeting held at the University of Sussex in December 1980.

The resulting publication covers the processes controlling separation through the underlying physical chemistry of the subject; in addition the advantages of the chromatographic techniques for the study of the physical chemistry of surfaces, equilibria and kinetics are highlighted.

Softcover 191pp 0 85186 728 6  
Price £28.00 (\$57.50) RSC Members £18.25

## No. 16 Structure of the Interfacial Region

Faraday Symposia  
of the  
Chemical Society  
No. 16  
Structure of the  
Interfacial Region  
1981

This publication is based on the symposium held at the Physical Chemistry Laboratory, Oxford, December 1981, and covers: Liquid-Vapor Interfaces; Solid-Fluid Interfaces; Interfaces Formed by the Adsorption of Complex Molecules such as Polymers and Surfactants.

Softcover 256pp 0 85186 698 0  
Price £36.25 (\$74.25) RSC Members £23.50

### ORDERING

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London WC1B 5DT.

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The Royal Society of Chemistry,  
Distribution Centre, Blackhorse Road,  
Letchworth, Herts SG6 1HN, England.

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