

INTERNATIONAL UNION OF PURE AND APPLIED CHEMISTRY
DIVISION OF PHYSICAL CHEMISTRY
COMMISSION I.3 (ELECTROCHEMISTRY)

MINUTES OF THE GENERAL ASSEMBLY MEETING 1999

8-10 August 1999, Berlin

Present: *Titular members*: Prof. W. Plieth (Chairman), Prof. C.M.A. Brett (Secretary), Dr. K.E. Ahlberg, Dr. C.P. Andrieux, Prof. D.J. Schiffrin, Prof. T. Watanabe; *Associate members*: Prof. J.M. Feliu-Martinez, Prof. J.F. Rusling, Prof. H. Siegenthaler, Prof. K. Uosaki, Prof. G.S. Wilson; *National Representatives*: none.

1. Agenda. The agenda was approved.

2. Minutes of the general Assembly Meeting in Geneva, 24-26 August 1997. The minutes were approved.

Minutes of the Off-Year Meeting, Dresden, 23-25 October 1998. The minutes were approved.

3. Chairman's report.

Physical Chemistry Division Meeting

The chairman reported on the meeting, attended by Prof. Plieth and Prof. Brett (chairman-elect), of the Division Committee with Commission Chairmen on Saturday, 7th August. This had centred mainly on the new structure for IUPAC and the emphasis on divisions, with divisional and interdivisional projects, following the abolition of the present commission structure after 2001. A previous meeting of the Division Committee with commission representatives – chairmen or secretaries – in Frankfurt in February (attended by C.M.A. Brett) had discussed how the Physical Chemistry Division should respond to the challenges imposed by the new IUPAC strategy in order to keep abreast with the latest scientific and technological progress.

Under the new financing, each division would receive a certain amount of money and there would also be a central pool; both these sources could be used for financing projects. Unlike the old system, all projects will automatically have money allocated with approval.

Other points raised concerned the importance of reducing the project evaluation period and increasing its efficiency, of having an effective and fast response from the publishing houses, and of having key reports posted on the web.

Interdivisional initiatives

Attention was drawn to interdivisional initiatives, especially regarding coordination of environmental projects and the strategic initiative on materials chemistry, both of which are highly relevant for Commission I.3.

4. Green Book

Prof. C. Brett reported on the status of the electrochemistry section of the Green Book. Since the off-year meeting in Dresden, October 1998, the version as corrected during that meeting had been circulated to all commission members and some external experts and final comments received. After this, it had been forwarded to Commission I.1 for discussion during their meeting in March 1999. It was also discussed in the joint meeting (see below). The only pending section was the explanatory note on pH which was in final discussions with members of the working party on pH.

5. Ongoing projects

- 130/3/89 "Measurements of redox potentials of proteins" F. Hawkrigde and G. Wilson
This project will soon finish being prepared for publication.
- 130/30/93 "Electrocrystallization: concepts and terminology"
It was decided not to continue this project. The previous idea of a reformulation of the project (GA, 1997) was found not to be viable.
- 130/32/98 "Electrochemistry at the interface of two electrolyte solutions", Z. Samec
This is almost complete for publication as an IUPAC report. When received it will be sent out to external experts.
- 130/33/98 "Electrochemistry for the environment", C.M.A. Brett and J.F. Rusling
A first draft of a technical report has been prepared and was circulated. It is expected that the report will soon be finished. It will then be sent out for comments and to external experts.
- 130/34/98 "State of the art of the waste water treatment for industrial plating facilities", M. de Voogelaare
This is almost complete for publication as an IUPAC report. When received it will be sent out to external experts.

6. Further projects

"Electrochemistry and interfacial chemistry for environmental clean-up and green chemical processes", proposers C.M.A. Brett, J.F. Rusling and S. Ardizzone (I.6).
This project is complementary to 130/33/98. It involves the organisation of two workshops, one in Europe and one in the USA. A proposal had been submitted in March

1999 through the IUPAC bureau to the International Council of Scientific Unions (ICSU) and it was learnt during the Berlin GA that it had been approved, but the financial subsidy was not yet decided.

"Micromachining", D. Schiffrin

A preliminary draft of a report on micromachining had been prepared. A project application for an IUPAC workshop will be submitted.

"Size effects in electrochemical reactivity", E Ahlberg and J. Feliu-Martinez

A project proposal for organisation of a workshop in Spain was prepared during the GA and submitted for evaluation.

"Linear sweep and cyclic voltammetry", C. Andrieux and T. Watanabe

It was agreed to be inappropriate at the present time to submit a project proposal on this theme.

"Life as an electrochemical phenomenon", C. Gutierrez

It was decided not to submit a project proposal.

7. Elections and

8. Membership

Points 7 and 8 were taken together.

Election of Physical Chemistry Division Commission Chairmen

At the request of the division committee, commission chairmen for 2000-2001 had been elected in May 1999 so that they could take part in the discussions concerning future strategy during the Berlin GA. Commission I.3 had elected Prof. C.M.A. Brett. This was ratified.

Division committee

The proposal for the division committee for the biennium 2000-2001 had been circulated by e-mail by the nominating committee in June 1999, with the voting to take place during the Berlin GA. The proposal was unanimously approved, although objections were raised as to the election procedure which had been adopted.

Commission I.3

Detailed discussions were held regarding the membership of the commission for the biennium 2000-1. All important areas of electrochemical research and development need to be represented for the commission to be effective.

Following this, the following nominations were agreed upon:

Titular members:	C.M.A. Brett	renominated
	K.E. Ahlberg	renominated
	D.J. Schiffrin	renominated
	T. Watanabe	renominated
	J. Feliu-Martinez	nominated
	J.F. Rusling	nominated
Associate members:	M. de Vogelaare	renominated
	Z. Samec	renominated
	H. Siegenthaler	renominated

K. Uosaki	renominated
R.J. Behm	nominated
A. Kornyshev	nominated
J. Lipkowski	nominated
B. Scrosati	nominated

National representatives:

Renominated: C. Barbero (Argentina), A. Contractor (India), G. Gritzner (Austria), D. Mandler (Israel), W. Paik (South Korea), M. Sluyters-Rehbach (Netherlands) Z. Tian (China)

Newly nominated: J. Boodts (Brazil), S. Fletcher (Australia), K. McQuillan (New Zealand)

Officers for the biennium 2000-2001

The chairman of the commission will be C.M.A. Brett (elected in May 1999, see above) and the Secretary J. Feliu-Martinez.

9. Miscellaneous

The chairman thanked all members of the commission for their contributions, particularly those who will be leaving the commission at the end of 1999.

The secretary also thanked Prof. Plieth, who has reached the maximum term of active service of IUPAC, for his important contribution to the commission as titular member, secretary and chairman.

The 2000 off-year meeting will be held in September or October 2000. The exact location will be decided as a result of the success of applications for workshops (see point 6). A strong possibility is Alicante, Spain in September 2000.

APPENDIX - Joint Meetings

I.3 + I.6 (8th August, 11-12)

Ongoing and future projects of both commissions were described and there is the possibility of working together in several areas. Of particular interest is the joint project recently submitted to ICSU and just approved (see point 6). It was agreed that there would be informal discussion groups from members of both commissions concerning the various topics, leading to joint commitments where felt appropriate.

I.3 + V.5 (8th August, 15-16)

Ongoing projects and future projects of both commissions were described. It was decided that each commission should keep the other informed concerning the status of all projects.

Working party on pH (9th August, 9-11)

The contents of the draft document on the metrological aspects of pH measurement was presented by the secretary of the working party, Prof. S. Rondinini, in the absence of the chairman.

During discussion, objections were expressed by Prof. Schiffrin that 1930s electrolyte theory was being used instead of more modern approaches for the calculation of activity coefficients and liquid junction potentials and thence uncertainty budgets: IUPAC should always demonstrate itself to be at the forefront of scientific advances. Following the Geneva GA in 1997, and as agreed at that time, he had contacted experts on modern electrolyte theory who would be willing to lend their services. The working party replied that the purpose of the document was primarily metrological i.e. on the procedure to be adopted for measuring pH standards, and these questions would be addressed in the future.

Other concerns were expressed that, if the document is to be useful to and read by chemists as well as professional metrologists, it must be readily intelligible: a number of terms and expressions and paragraphs would be unclear to non-experts as well as their quantitative meaning.

I.3 + I.1 (9th August, 12-13)

The revised electrochemistry section for the new edition of the Green Book, except for the pH explanatory note which is nearly complete, had been accepted by I.1 in their meeting in March 1999 and has been typeset. It is expected that the Green Book will be published early in the year 2000.

I.3 + I.2 (9th August, 17-18)

This meeting concerned the document prepared by Prof. Alberty on Legendre Transforms for publication as an IUPAC technical report. Some paragraphs of this document are unacceptable to I.3 for publication as an IUPAC report, since they refuse to acknowledge the electrochemical potential as an alternative approach. It was decided that the best approach would be to ask Prof. Alberty to remove the offending sentences. Prof Schiffrin agreed to talk with Prof Alberty concerning this.