

**MACROMOLECULAR DIVISION (MMD)**  
**Minutes of the Meeting held in Brisbane, 2-3 July 2001**

The Macromolecular Division Committee met on Monday, 2 July 2001, from 14:00 to 18:00 and on Tuesday, 3 July 2001 from 14:00 to 18:00 at the IUPAC General Assembly at the Queensland University of Technology, Brisbane, Australia. Those attending: Prof. A. Abe (Japan), Prof. I. Ando (Japan), Dr. R. Bailey (UK), Prof. M. Baron (Argentina), Prof. D. Berek (Slovakia), Prof. M. Buback (Germany), Prof. T. Chang (Korea), Prof. R. Gilbert (Australia) (President), Prof. B. Grady (USA), Prof. J. He (China), Prof. T. He (China), Prof. K. Horie (Japan), Prof. A. Jenkins (UK), Prof. J.-I. Jin (Korea), Prof. R. Jones (UK), Prof. S.-C. Kim (Korea), Prof. T. Kitayama (Japan), Prof. P. Kratochvíl (Czech Republic), Dr. M. Laun (Germany), Dr. J. Matison (Australia), Dr. G. Moad (Australia), Prof. W. Mormann (Germany), Dr. E. Reichmanis (USA), Prof. R. F. T. Stepto (UK) (Vice-President), Prof. D. Tabak (Brazil), Prof. J.-P. Vairon (France), Prof. Jiri Vohlídal (Czech Republic), Prof. F. Wang (China), Dr. E. Wilks (USA), Dr. W. J. Work (USA) (Secretary).

**1. President's introductory remarks and finalization of agenda.**

- 1.1. Prof. Gilbert welcomed everyone to Brisbane.
- 1.2. He proposed that the subject of Subcommittees be added to the agenda.

**2. Remembrance of Michael Swarc.**

- 2.1. Prof. Gilbert noted the death of Michael Swarc since the Division met in Warsaw. He asked whether anyone wished to speak in remembrance of Prof. Swarc. Prof. Vairon volunteered that he had attended a conference that Prof. Swarc had organized, which was held about a week before Prof. Swarc's death. Despite his obvious illness, Prof. Swarc was at the conference and continued to work towards its success. Prof. Gilbert asked for a moment of silence to commemorate Prof. Swarc's passing.

**3. Approval of the Minutes of the Division Committee meeting held in Warsaw, July 2000.**

- 3.1. Prof. Berek pointed out that there was nothing explicitly stated about the work of Working Party 4.2.2 in the minutes of the Warsaw meeting and asked that this oversight be rectified in the final version.
- 3.2. Several small corrections are required in the list of Division approved meetings. Prof. Stepto asked that the list continue to be included in the minutes rather than simply referring those interested to the Division's web-site.

**4. Matters arising.**

- 4.1. Clarification of Becker E-Mail on the Establishment of Subcommittees. Prof. Gilbert reported that the IUPAC Secretary-General, Dr Becker, had provided additional information on this matter. Any group (e.g. a pre-existing body such as a Working Party) may submit a request to the Division Committee to become a Subcommittee, which may equally well have the title Working Party. Prof. Gilbert noted that the means is given under By-Law B4.308 "A Commission may propose to the Division or Section Committee the establishment of Subcommittees with responsibility for designated functions within the scope of the Commission." These have limited lifetimes (two years), and must be approved by the Division Committee. Those interested in putting forward such a Working Party, etc., should make a submission (through the Division President) to the Division Committee in time for publication of the names of members in the next edition of the Blue Book; the deadline for preparation of the Blue Book is the end of September, and therefore any submission should reach the Division Committee by mid-August at the latest to

allow a suitable time for consideration. The prospective chair of any such grouping should therefore send a submission to Prof. Gilbert as the current Division President by mid-August at the latest. This submission should include the name of the proposed Working Party/Subcommittee, justification for its establishment (perhaps 1/2 page), name of the chair, names of proposed members, justification for each member (e.g. co-author of IUPAC paper on ...), and the track record of this group if it already exists in some form (e.g. Commission IV.1, WP IV.2.1, ...). A subcommittee receives no funding unless supported by members' project allocations. Prof. Gilbert suggested that the terminology task currently covered by Commission IV.1, which will not continue in the new Nomenclature Division, would probably be best advanced as a Subcommittee.

- 4.2. Division Budget. Prof. Gilbert reported that the Division will have \$47,500 to cover expenses during the next biennium. The IUPAC Executive expects that this budget will be allocated as about 25% for operating, 75% for projects. Task Group Leaders of projects which have been approved by the IUPAC Secretary-General have responsibility for their budget (as approved in the Secretary-General's letter), which they can spend without additional approval by the Division President. Project money can be pooled to bring people together working on several related projects; this should allow groups that benefit from such widespread input to continue to meet if they have funding and wish to do so. Prof. Stepto reported that all nomenclature and terminology projects go forward with Dr. Hess' name as the Task Group Leader; thus, he will control the budget.
- 4.3. Prof. Gilbert requested that any task groups in the Division who wish to become Subcommittees should inform him as soon as possible. Prof. Buback asked about whether it would be possible to renew Subcommittees after they have finished their two year limit. Prof. Gilbert responded that renewal was possible although any renewal would, under the By-Law quoted above, be treated as a new subcommittee and would have to undergo approval by the Division Committee. Prof. Gilbert suggested that application for such renewal should include a summary of activities, accomplishments and a plan for the next two years that identifies specific goals for the Subcommittee. Prof. Stepto asked whether the Division could approve a Subcommittee now. Prof. Gilbert subsequently noted the formal approval is by vote of the Division Committee as defined by the By-Laws, i.e. the 10 TMs and 6 AMs; given the time-lines, such voting would be done electronically. There were no other questions or comments about the formation of Subcommittees.
- 4.4. Project Completion Funding. Prof. Gilbert reported that a list of all of the Division's projects has been compiled from information sent in by Coordinators and Task Group Leaders; the current status is given in Appendix A. At the Warsaw meeting he asked that projects that would need additional time after 2001 to be completed required a request to extend funding. Six requests were received and submitted for approval. All were approved; payment would be through the usual process of submission of a payment request form to him and/or Mrs Linda Tapp. A summary of the funding for Division projects is given below:

Liquid Crystals 18/87 Hess, \$400  
Guide to Polymer Terminology (22/93) Hess, \$570  
421/20/87 Laun, \$300  
421/15/86 Laun/Plochocki \$700  
All IV.2.3 projects Berek, \$100  
22/93 Stepto/Hess, \$1339  
Single-Strand Organic Polymers 19/89 Kahovec, \$1250  
Additional Nomenclature Project Completion (Brisbane) Hess, \$2000.

Requests were funnelled through coordinators (Hess, Laun, etc.) but actual funds went to individuals involved in project completion.

There were no other questions or comments on this topic.

- 4.5. Fate of Old-Style Projects. Prof. Gilbert noted that the IUPAC Executive has stated that all old-style projects (i.e. those pre-dating the project approval system put in place by IUPAC over the last 2 years) must be completed by the end of the year. He noted that most will be effectively complete close to this time, e.g. submitted to the IDCNS for review or paper submitted to P&AC. Those not completed will have to be resubmitted. The IUPAC Secretary-General has stated that an abbreviated Project Approval submission is necessary for this; the resubmitted projects will not require referee comments, but will require a plan with dates when tasks will be completed. Dr. Hess asked for clarification about the method and noted that there is an error in the instructions; Prof. Gilbert responded that the error had been corrected. Dr. Wilks asked for clarification of which projects are "new rules" projects. Prof. Gilbert stated that those projects with the new system of project numbers are approved under the new system and nothing need be done. Those projects that do not have new project numbers must be reapproved. Prof. Stepto asked whether anyone understood the significance of the numbers in the new project numbering system. Prof. Gilbert responded that he did not. Dr. Wilks proposed an interpretation of the new numbers. In response to a question from Prof. Stepto, Dr. Wilks stated the intention of the nomenclature and terminology task group to retain the old numbers within the Division. There were no further questions or comments on this topic.
- 4.6. Future of the General Assembly. At the Warsaw meeting considerable discussion was devoted to the topic of whether or not General Assemblies would continue to occur and whether they still fulfilled any purpose. According to Prof. Gilbert, they will continue. The 10-member "core" Division Committee will continue to receive support to attend a Division meeting at the General Assembly. If other members of the Division wish to attend, any financial support for their travel must come from Division funds, not IUPAC pool money.
- 4.7. Outcome of Editors Round-Table in Warsaw. About twenty journal editors met with Division representatives in Warsaw. As a result, the Division was requested to make the Purple Book and the Guide to Polymer Nomenclature available on the world-wide web. This has been done with a the revised version of Chapter 1 replacing the older version. As of the end of June, the URL for the books is available in their instructions for authors and referees by most editors who agreed to do so in Warsaw. Prof. Gilbert thanked Dr. Wilks for all of his efforts to bring this about.
- 4.8. A change to IUPAC Bylaw 4.103, which governs voting in the Division, was discussed. Prof. Stepto reported that the Council will vote in Brisbane on a proposal to include titular and associate members, national representatives together with members and officers of task groups as the Bureau may specify. The final motion passed by the Council is as follows: "The Titular Members of each Division Committee shall be chosen by an electorate comprising the Titular Members, Associate Members and National Representatives on the Division Committee, together with the members or officers of such other bodies within the Division that the Bureau may specify. The number of Titular Members shall not exceed ten unless otherwise determined by the Bureau. [*Continue unchanged to end of current text, available from the IUPAC website.*] *New paragraph following current text:* Additionally, a Division Committee may elect no more than six National Representatives on the nomination of Adhering Organizations, with no more than one representative from a given Adhering Organization. The term of a National Representative shall be two years, with the possibility of renomination and reelection consecutively for only two more years. Exceptional circumstances must be established and special permission obtained from the Bureau for the election of a National Representative from a country already represented on the Committee by a Titular or Associate Member." Prof. Gilbert says that it is up to the Division to request those "members or officers of such other bodies within the Division" whom we wish to include in voting; it would be up to the Division to make a case to include present Task Group Leaders, leaders of recently-completed projects, and others; the IUPAC Secretary-General had indicated informally that inclusion of Task Group Leaders and leaders of projects completed within the last year or so would be a reasonable suggestion, but this would always need

consideration by the Bureau on a case-by-case basis. Prof. Kratochvíl asked if Subcommittee Members would be allowed to vote. Prof. Gilbert responded that he suspected that the Bureau would not approve voting by all of the members of a Subcommittee, since, for example, this could be used to "stack" an election (e.g. a disproportionate number of votes from a block with a large Working Party). Dr. Laun asked whether all Task Group Leaders would be allowed to vote. Both Profs. Gilbert and Stepto responded that this would have their support in a submission to the Bureau.

- 4.9. Another change that affects the Division is the formation of a new Division of Systematic Nomenclature and Structure Representation (subsequently approved by the IUPAC Council). Prof. Stepto noted that the new Division will only work on structure-based nomenclature; it will not support the development of source-based names nor will it address terminology development. Thus, there remains a need for the Division to maintain a nomenclature and terminology function. Several other Divisions are planning to propose new Commissions. The formation of a Terminology Commission of Division IV has been submitted to the Bureau by Profs. Gilbert, Hess and Stepto, and if all goes well will be approved in the shortest possible time (which because of timing constraints in the By-Laws, would be for 2003).

## 5. Current status of meetings sponsored by the Macromolecular Division.

- 5.1. An updated list of Division approved meetings is attached in Appendix B.
- 5.2. Report on Macro 2002. Prof. Fosong Wang reported that the Organizing Committee started its work in 2000. An International Advisory Committee, a Domestic Advisory Committee, and a Program Committee have all been formed and have been working since then. Forty-one scientists invited by the International Advisory Committee to give invited lectures have accepted. The plenary lectures include three Nobel prize winners who have accepted the invitation to speak. The Secretariat is working on the accommodation for the meeting; five-star hotels will be about \$100/night, four-star hotels about \$75-80/night, and three-star hotels about \$60/night. Tours are being arranged. The second circular will be sent about December 1. Prof. Wang invited the Division Members to attend and asked its help to encourage colleagues to attend.
- 5.3. Report on Macro 2004. Prof. Vairon reported that a 4000 m<sup>2</sup> location has been identified for the meeting. This has eight to ten amphitheatres and an auditorium. Plenary lectures will be given on Monday, Wednesday and Friday mornings during the meeting. The present plan includes twelve symposia on polymer chemistry, eight symposia on polymer physics, two to three symposia on mechanics, rheology, and processing, and one symposium on polymer education. There remains room for one more symposium. Prof. Vairon suggested that the Division may wish to make use of the open slot in the program. He says that organizing committee is planning for 2500 participants and 40 plenary lecturers. They plan to invite ten scientists who will have their expenses fully paid. Four hundred and fifty scientists will be invited lecturers for whom the conference fee will be waived. Prof. Vairon estimates that the remaining 2000 participants will pay about \$400-500. Prof. Stepto asked whether there would be concessions for students? Prof. Vairon responded that they are planning to provide financial assistance for about 100 participants who are not invited lecturers about 50 of whom they expect to be students. Prof. Stepto asked how many students were present at the Warsaw meeting in 2000? Prof. Kubisa responded that about 400 attended, but many of them received support from outside organizations. Prof. Mormann asked that students be encouraged to attend even if it requires higher fees for other participants.
- 5.4. Prof. Abe reported that the Polymer Conference on the Mission and Challenges of Polymer Science and Technology is planned for December 2-5, 2002 in Kyoto. Prof. Nakahama is the chairman of the organizing committee. Four plenary lecturers have been identified: Profs. Shirakawa, Torchia, Sauvage, and Doi. Six Sessions are planned. On the final day, there will be a panel discussion about the important aspects of IUPAC activities. The organizing committee has a list of fifty invited speakers and expects about 500 participants.

- 6. Report on Commission IV.1 projects and activities since the Berlin meeting.**  
**A report has been previously circulated by Commission Chair (Hess). The current status of projects is given in Appendix A.**
- 6.1. Dr. Hess reported that Commission IV.1 will apply to become a Subcommittee, and has submitted an application for a Terminology Commission has been submitted (see 4.9).
  - 6.2. Currently, the Commission has eighteen projects and nine feasibility studies. One project, Terminology for Liquid Crystals and Liquid Crystalline Polymers, is in press. Six projects that are under the old project system are nearly complete and will be finished by the end of the year. Four projects are partially complete; an extension is being sought for one of them and the other three should be completed in 2002. There have been two projects in which there has been little or no progress.
  - 6.3. Four of the Commission's documents have been translated during the last year as well as a note on polymer nomenclature that Dr. Wilks prepared. Prof. Kratochvil noted that Dr. Metanowski had taken it upon himself to maintain a list of translated documents and wanted to know whether it would continue. Dr. Wilks reported that Dr. Metanowski had sent him the list of translations and that he would maintain it. It has been difficult to obtain copies of translations; Prof. Baron proposed that a central repository be started where all of the translations would be kept.
  - 6.4. Prof. Gilbert requested an explanation of the lack of progress for the Macrocycles Nomenclature project. Dr. Wilks reported that the project is moving again and that he expected the project to be sent to experts by March, 2002.
  - 6.5. Dr. Hess reported that there were 663 hits on the Commission's web-site over the last year.
- 7. Report on Commission IV.2 projects and activities since the Berlin meeting.**  
**A report has been previously circulated by Commission Chair (Laun). The current status of projects is given in Appendix A.**
- 7.1. Dr. Laun reported that the work is done in three working parties and that the Task Group Leader for each would report on the activities of his Working Party.
  - 7.2. Dr. Laun reported the activities of Working Party IV.2.1. The Working Party has a web-site ([www.launweb.de/iupac](http://www.launweb.de/iupac)), which has facilitated its work. The web-site was demonstrated for the Division. The web-site will be transferred to the IUPAC server soon.
    - 7.2.1. Currently, IV.2.1 has seventy-one registered members, about 50% of whom are industrial. All of its old projects will be completed by the end of the year. Since the last General Assembly the work party has published six papers, six more are submitted or are in press, twelve drafts are available and four more are planned. The Working Party also has eleven feasibility studies underway.
  - 7.3. Prof. Buback reported on the activities of IV.2.8, Modelling of Polymerization Kinetics and Processes.
    - 7.3.1. The Working Party has four recent papers published, in press or in preparation on the determination of propagation rate coefficients. The Working Party is changing its focus to functional methacrylates.
    - 7.3.2. Another new project is the measurement of termination rate coefficients. For this project, Gregory T. Russell will be the Task Group Leader. This will be a very difficult project because termination rate coefficients are very condition dependent. Because of the strong

condition dependence, it may be necessary to provide several pages of explanation for each monomer that is reported.

7.3.3. Another problem that Prof. Buback mentioned is recruiting of qualified scientists to provide data for the Working Party.

7.3.4. The Working Party currently has four projects, two of which are completed, one is in progress, and one has been proposed. Prof. Gilbert noted that the publications from this Working Party have very high citation rates.

7.4. The work of the Working Party on the Molecular Characterization of Commercial Polymers was summarized by Prof. Berek.

7.4.1. During the last year a Task Group organized round robin tests for size exclusion chromatography of commercial polymers. The resulting data were reported at a recent meeting and at the General Assembly. Intralaboratory repeatability was found to be very good; the spread in determinations was about 0.5-10%. However, interlaboratory reproducibility was very poor; the spread was 800-2000%. Therefore, the method needs attention to identify sources of error and develop a standard procedure. A paper describing the results will be written. Another paper in preparation is about band broadening in size exclusion chromatography, which results in variations in  $M_n$ .

7.4.2. Prof. Berek expressed concern about financial support for a meeting, which he stated had been turned down by IUPAC. Prof. Gilbert noted that no requests for funding had been rejected (all funding requested having been for project completion, which had been granted). He suggested that a new project application be prepared and submitted.

7.5. Prof. Vohlidal asked about why Dr. Laun has been so successful in obtaining industrial support for his Working Party's work on engineering polymers. Dr. Laun says that it has not been difficult because the participating companies view the work as valuable.

**8. Report on Commission IV.3 projects and activities since the Berlin meeting.  
A report has been previously circulated by Commission Chair (Reichmanis).**

8.1. Dr. Reichmanis reported that there are no special projects. There is a need for good ideas and, more importantly, scientists who are willing work work on them. Prof. Vairon offered to help. Prof. Berek asked what is meant by a special project. Dr. Reichmanis responded with some possible topics: polymers for photonics, electroluminescent polymers, ... For example, Dr Stejskal's recently-approved project on polyaniline was formally under this rubric. Prof. Vairon reported that he had attended a meeting about electroluminescent polymers and observed that there were three different populations present who have difficulty communicating. Dr. Reichmanis expressed her belief that special projects should be ones that cross the boundaries between disciplines. Prof. Jones reported that, at the *ad hoc* meeting on Materials many of the same things were being said.

**9. Report from Division Polymer Education Coordinators (Khokhlov, Jin).**

9.1. Prof. Khokhlov was unable to attend this year's Division meeting.

9.2. Prof. Jin reported that the CTC (now CCE ; Committee on Chemical Education) plans to hold an International Conference on Chemical Education next year (Aug. 6-10, 2002) in Beijing. He proposed to them that there should be a special session on Polymer Education, which was well received by CTC. We agreed that Michael Hess will act as a chairman for the special session and

will contact the Chinese Organizing Committee (Chairman : Prof. Chun-Li Bai ; Chinese Chemical Society) and CTC (Bradley).

**10. Report from the Division Strategy Coordinator (Abe).**

**10.1.** Since Prof. Abe had talked at previous meetings about activities directed towards development of strategic directions in polymer science, this item was skipped in this year's agenda.

**11. Division program for education in developing countries.**

**11.1.** Prof. Jin reported that the Korean Chemical Society helps the Korea Science and Engineering Foundation to invite scientists (mainly post-docs) from developing countries and economically disadvantaged nations. In the year of 2000 KOSEF invited about 30 foreign chemists and chemical engineers including polymer scientists; for information refer to KOSEF homepage.

**11.2.** Prof. Jin attended the World Chemistry Leadership Meeting (WCLM) held in Brisbane (July 9<sup>th</sup>). The main theme was to find ways and means to help chemists in developing and economically disadvantaged countries. He believes that our Division should start discussing this matter more in depth.

**11.3.** Prof. Kratochvíl reported on the continuing Postgraduate Course in Polymer Science given at the Institute of Macromolecular Chemistry in the Czech Republic. For the academic year 2000-2001, seven scientists from seven different countries were enrolled. For 2001-2002, eight scientists will participate. Since its beginning in 1996, thirty-one scientists have participated. This has resulted in twenty-four published papers, with ten more in press. There have also been thirty-five communications at international meetings.

**11.4.** Prof. Gilbert reported on the successful UNESCO/IUPAC Macromolecular School and Conference organized by Prof. Sanderson in Stellenbosch.

**12. Future of Nomenclature and Terminology.**

See items 4.9 and 6.1.

**13. Special Topics for PAC (James Bull)**

**13.1.** Dr. Bull, the special topics Editor for *Pure and Applied Chemistry*, talked to the Division about his job at PAC to prepare special feature articles and proceedings of symposia. He reported that there have been two special feature articles; one about Nanostructured Materials and the other about Green Chemistry. There have been no proceedings from symposia published. He plans to focus on IUPAC activities as the source material. Presently he has four projects that he hopes will provide special topic issues over the next two and a half years. Prof. Abe asked whether there was an arrangement between PAC and Wiley. Dr. Bull responded that it seems that symposia are preferentially published by Wiley.

**14. Division finance.**

**14.1.** According to Prof. Gilbert, the Division budget was slightly overspent during the last biennium. He is not concerned because the IUPAC treasurer has been sympathetic to the Division's needs because of the high productivity it has had, and the budget had been underspent by larger amounts in previous biennia.

**14.2.** Budget allocations for projects will be made to cover the entire planned duration of the project. Thus, when a project is approved with a planned completion date of three years, the allocation is expected to be spent over three years: two-thirds for the current biennium and one-third for the first year of the next biennium. If money is not spent, then it is lost once the project expires. Dr.

Hess asked whether the allocation can be spent faster or delayed. Prof. Gilbert responded that it is acceptable to do either, but the project must be completed within the expected time. The clock starts running when the project is approved.

## **15. Elections.**

- 15.1. There were some changes in the nomination procedure from what was thought to be the case in Warsaw. Prof. Gilbert reminded the Division that in Warsaw IUPAC has said that the chairman of the Nominating Committee could not be the Division Vice President. Subsequently, this was changed. As a result, Prof. Stepto did chair the Division's Nominating Committee.
- 15.2. Prof. Stepto thanked all who provided nominations and also the Nominating Committee. There were so many nominees that he, together with Prof. Gilbert, was required to eliminate some. Both Profs. Gilbert and Stepto thought that it was important that those elected have some experience with IUPAC. The final lists of candidates is given in Appendix C.
- 15.3. Dr. Work reported that electronic ballots were received from Profs. Khokhlov, Penczek, and Slomkowski, and Dr. Meisel.
- 15.4. Election of Vice President. Profs. A. Abe, J.-I. Jin, S. C. Kim, and F. Wang were nominated to be Vice President. Prof. Kim had withdrawn his nomination. The other three candidates each provided the Division with a brief summary of their experience and qualifications. By secret ballot, Prof. Jin was elected to be Vice President.
- 15.5. Election of Titular Members. There were eleven nominees for titular membership for six openings. After casting a single secret ballot in which each eligible elector was able to cast six votes, Profs. Baron, Horie, Jones, and Kubisa and Drs. Hess and Laun were elected.
- 15.6. Election of Associate Members. Seventeen scientists were nominated, excluding those elected to Vice President or titular membership, for six openings for titular membership. Two rounds of ballots were cast because six candidates did not receive a majority of the votes cast on the first round. After two votes, seven candidates were clearly more acceptable than the remainder. It was decided, therefore, to petition the Secretariat to allow the Division to have seven Associate Members during the next biennium. A ruling was obtained from Dr. Becker and seven AMs were allowed, namely, Profs. Berek, Buback, Khokhlov, Penczek, Tabak, Vohlidal, and Fosong Wang.
- 15.7. Prof. Gilbert noted that the method used to identify members left open the question of Task Group Coordinators since the Division voted for people rather than topics. He proposed that Prof. Stepto clarify the situation. Prof. Stepto agreed and a brief meeting was held to sort it out immediately following the close of the Division Meeting. The results of the elections and the responsibilities of Division Committee Members are summarized in Appendix D.

## **16. Content of Division website.**

- 16.1. Prof. Gilbert stated that he did not know how many hits the Division's web-site had received over the last year, but the amount of information now available is very extensive. He asked for comments particularly about the limited access locations. There were none.

## **17. Any other business.**

- 17.1. Prof. Jones reported that he attended the Materials Meeting on 2 July, organized by Prof. Corish. It has been proposed that an Interdivisional Committee be formed to address terminology, characterization, and applications for nanostructured materials, liquid crystals, non-linear optical materials, ... The applications aspect will be a particular emphasis. This proposal has been enthusiastically supported. Prof. Stepto asked whether Prof. Jones would be involved in the

Committee; Prof. Jones thinks that he will. Prof. Gilbert expressed his concern that the proposal is a good idea, but in the past there have been real problems turning ideas into actual projects. Dr. Reichmanis noted that all of the ideas that Prof. Jones mentioned have a macromolecular component. She and Prof. Matisons have agreed to also be involved.

- 17.2. Prof. Berek asked whether it is possible to publish the output of a project in any journal or whether P&AC must be used. He would like to use the *J. Appl. Polymer Sci.* for the report. Prof. Gilbert responded that the report may be published in any journal, but that a summary should be put in P&AC.

**18. Date and place of next meeting.**

- 18.1. The next meeting is planned for two half-days on the sixth and seventh of July 2002 in Beijing. Prof. Stepto proposed that we have a Division dinner in Beijing.

**19. President's concluding remarks.**

- 19.1. Prof. Gilbert noted that the output has improved over the last four years. He thanked the Division for all of its efforts.

**20. Vote of Thanks.**

- 20.1. Prof. Stepto proposed a vote of thanks to Prof. Gilbert for all of his efforts as President, over the last four years, on behalf of the Division. The vote was fully endorsed by the meeting.

**APPENDIX A.**

Project number	Project name	Task-Group Leader	Stated completion date	Status (including output)
410/18/87	Basic Definitions of Terms Relating to Liquid Crystals	M Baron	2000	In press with P&AC (to appear in May)
410/19/89	Nomenclature of Regular Single-Strand Organic Polymers (Revised Edition)	J Kahovec	2000	Almost complete. Final version of document: 30 September. Drawing and incorporation of formulae: 30 September. To IDCNS: 15 October
410/21/93	Source-Based Generic Nomenclature for Polymers	E Marechal	2001	Final revision after IDCNS approval; to be submitted to the publisher after enhancement of the quality of some graphic representations.
410/22/93	Guide to Polymer Terminology and Nomenclature	V Metanomski/ Wiks	2003	Original version of Purple Book include Chap 1 revision now on web & electronic format (Gilbert). Simple guide has been prepared (Wilks) & put on web (Gilbert). <b>All editors of major polymer journals have agreed to refer to it in instructions to authors, referees (June 2001).</b> The final versions of updated Purple Book chapters to be delivered to Wilks who will perform the editorial compatibilization and combination of the chapters to unified document by end 2001.
410/24/93	Terminology Related to Multi-Phase Polymer Composites and Blends	W. Work & K Horie	2001	To go to IDCNS (public review) in August, published 2002.
410/25/95	Asymmetric Polymerization	K Hatada	2003	Final revision after IDCNS approval, preliminary version on web.
410/26/95	Kinetics and Thermodynamics of Polymerization	E. Marechal and S. Penczek	2002	Final text polished by Jenkins and Wilks. Penczek has written introduction accepted by Hess and corrected by Jenkins. This text as "Provisional" has been sent to Percec (JPS) to be published. Percec accepted in principle, but asked Penczek

				to convert to an "article", i.e. add abstract and conclusions. Major part would stay as accepted by our Commission. Penczek is working on these two addenda, should be ready in a few days, after consulting with members of the WP. Then full text will appear in JPS. Open to the public, unrestricted discussion. Submission to IDCNS after next year's meeting in China
410/28/97	Terminology and Structure-Based Nomenclature of Dendritic and Hyperbranched Macromolecules	J Kahovec	2003	New draft: 15 June. Discussion, review: Brisbane Commission meeting. After minor corrections to IDCNS in November 2001.
410/29/97	Terminology and Nomenclature of Macromolecules with Cyclic Structures	E Marechal/ E Wilks/ W Mormann (after July 01)	2003	No progress in last year. Marechal has relinquished responsibility, Wilks will be passing on to Mormann.
410/30/97	Glossary of Polymer Chemical and Topological Class Names (revised title)	J Vohlidal	2003	After discussion in Brisb., distrib. to experts in October. Final document by June 2002.
410/31/97	Polymerization Processes and Polymers in Dispersed Systems	S Slomkowski	2003	After collecting suggestions from experts on the draft of definitions, revised draft has been sent to all members of the Working Party in June 2001. Based on their comments and those to be received at the 2001 Gordon Conference on Polymer Colloids, the new draft will go out to revision by external experts in last part of 2001.
2000-006-1-400	Terminology of Polymers with Ionizable Groups and Polymers Containing Ions	P Kubisa	2003	Revised draft by December 2001 to be discussed by the Commission during next meeting in China.
1999-051-1-400	Process Based Nomenclature for Modified Polymer Molecules (formerly Source-Based Nomenclature for Modified Polymers)	E Wilks	2001	Title changed to Process-Based Nomenclature for Modified Polymers. Comments generated at the Warsaw 2000 meeting were incorporated; revised version circulated to all WP members by November, 2000 per agreed timetable. Fox sent comments January, 2001;

				Marechal sent comments April/May, 2001; no comments from any other WP members. No work done on incorporating Fox's or Marechal's comments. Require serious discussion at Brisbane on whether this project should be cancelled owing to lack of support from other WP members.
1999-048-1-400	Definitions of Terms Relating to Reactions of Polymers and Functional Polymers	K Horie	2003	Draft will be prepared by end of July 2001 and sent out to external experts.
2000-007-1-400	Glossary of terms relating to polymeric gels and networks, hybrid inorganic polymeric materials and the processing thereof (previous 410/27/95)	R Jones	2003	Meeting of European Working Party members in Canterbury January 2001 finalised the scope of the project. Document subsequently prepared in standard format, sectionalised and indexed, circulated to full WP in first week of June and tabled at Commission IV.1 meeting in Brisbane.
421/15/86	Melt Rheology and Concomitant Morphology in Polyblends and Polyalloys	A Plochocki	1996	Project completed. Final publication to have final revision at Karlsruhe meeting Oct 01 then to be submitted to P&AC.
421/28/89	Structure-Property Relationship of Discontinuous Fibre Reinforced Plastics	M. Bevis, A. Cervenka, and W. Gleissle	1999	Project completed. 6 publications in PAC. Final manuscript by Gleissle "Rheological studies of processed polypropylene-glass composites" is ready for submission to International Polymer Processing
421/29/91	Rubber Toughening of Plastics	C Bucknall	2001	One paper already published in J Mater Sci. Two papers scheduled for June 2001 issue of P&AC. Will submit 3 further papers to other journals by 31 Dec 2001. Project near completion.
421/31/93	Structure and Properties of Hydrogenated NBR	T Kobatake, Masuda	1998	Experimental work completed. 3 publications for PAC in preparation: Properties of dilute solutions; Solutions of finite concentrations; Effect of AN-

				content and branching. Project near completion.
421/32/95	Future Requirements in the Characterization of Continuous Fibre Reinforced Polymeric Composites	DR Moore	2000	Final paper for Pure & Appl. Chem for publication has been passed into the system for approval. Project complete.
421/33/95	Rheological and Mechanical Properties of PaMSAN/PMMA Blends in Miscible and Phase Separated Regimes of Various Morphologies	H.M. Laun, L. Lyngaae-Jørgensen and V. Altstädt	2001	Rheology work and mechanical studies nearly completed. 4 papers published, 1 submitted. 2 papers ready for submission, 2 more papers in preparation. Project to be completed end of 2001.
421/34/95	Property Improvement via Interfacial Chemical Reaction - Reactive Extrusion of EVOH/SMA and Polyamide/MAH-EPR	J Curry	2001	Results on EVOM/SMA published. Work on Nylon 12 / MAH-g-EPR to be published in 2nd paper. 1 publication in P&AC (1996) Final draft for PAC publication distributed to participants and WP4.2.1 chair and secretary for consideration at June meeting. Publication approval and submission expected June. Project completed.
421/35/97	Effects of Side-Chain Branching on Processability of Commercial Polycarbonates	M. Takahashi	2000	Experimental work completed. 2 papers for Pure & Appl. Chem. in preparation: Characterization and rheological properties, Processability and mechanical properties
421/36/97	Studies on Biodegradable Poly(epsilon-caprolactone)	M. Mochizuki	2000	2 papers ready for submission, 2 more papers in preparation.
1999-020-1-400	Quantifying scratch resistance of commercial polymers	R Bailey	2003	Scope of the project decided through debate at the last Working Party meeting. The project now in two parts:- i) Characterisation techniques - these will be assessed and work carried out on polycarbonate and polymethylmethacrylate using a hard and a soft (compliant) coating. ii) a variety of emerging coating technologies for polymers will be assessed using the

				techniques in i). Materials are nearly assembled for i) and further discussion will take place at the next WP meeting in June 2001 (Karlsruhe). The candidate materials for part ii) are also being proposed there.
422/1/98	Nomenclature of chromatography of polymers and related substances	D Berek	2000	abandoned
422/2/98	Characterization of polyelectrolytes in aqueous solution by GPC, light scattering, viscometry, ultracentrifuge or similar methods	R. Bruessau	2000	Poster to be presented in Maastricht and Bratislava For this and 422/3, /4, /5 and /6, first version of joint paper describing RRT results prepared and the ms. sent to project coordinators for comments. The corresponding paper will be submitted by end 2001 to J. Appl. Polym. Sci.
422/3/98	Size exclusion chromatography dispersion correction	J Baumgarten	2000	The new coordinator has prepared framework of the dilemma paper, which is under discussion among the members. He will try to organize a meeting at Loeben/Austria on 14.Sept.01, where a completed report will be issued.
422/4/98	Precise determination of molecular weight distributions of polyolefins by high temperature size exclusion chromatography and hyphenated techniques	D. Lilge	2000	Poster to be presented in Maastricht and Bratislava (see 422/2)
422/5/98	SEC/GPC of polystyrenes	S Mori	2000	Poster to be presented in Maastricht and Bratislava (see 422/2)
422/6/98	Molecular characterization of polyamides 6, 11 and 12	E Robert	2000	Report sent by Robert to Berek some time ago. First part of project completed as report in French. Gilbert & Robert have completed translation into English for publication in P&AC (to be submitted August).
1999-024-1-400	Polyaniline: Recommendations for Preparation of Conducting Polymer and its Colloidal Form	J Stejskal	2002	59 samples of a conducting polymer, polyaniline, prepared by using standard polymerization conditions in various institutions (9

				<p>participants from 5 laboratories in 5 countries). An additional 28 polyanilines have been synthesized under modified reaction conditions. The electrical conductivity of all samples was evaluated and compared. The manuscript of the Technical Report intended for the publication in the Pure and Applied Chemistry is being prepared and will be available before October 2001. The part of the project concerned with colloidal polyaniline dispersions is in progress.</p>
2000-001-1-400	Critically Evaluated Propagation Rate Coefficients for Free-Radical Polymerizations of Methacrylic Acid Esters with Functional, Cyclic and Branched Ester Groups	S Beuermann	2002	<p>Meeting of the project members at the 3<sup>rd</sup> IUPAC sponsored Symposium on Free radical Polymerization: Kinetics and Mechanism in Il Ciocco, Italy, June 2001. November 2001: Distribution of first draft to the task group members. 3. February 2002: Distribution of the revised manuscript to the task group members March 2002 Submitting the manuscript to Macromol. Chem. Phys. and completion of Project</p>
1999-039-1-400	Structure and Properties of Cyclic Olefin Copolymers	SC Kim	2002	Work ongoing.
2000-005-1-400	University Education in Polymer Science	A Khokhlov	2002	<p>Workshop on University Education in Polymer Science in Copenhagen, June 28-29, 2000. Main recommendations: start program dedicated to web posting of transparencies of the main lecture courses in polymer science. Lecture notes of Khokhlov "Introduction to Polymer Science" on <a href="http://polly.phys.msu.su">http://polly.phys.msu.su</a>. Planned: these and other transparencies will be posted on the educational Web sites of European Polymer Federation and IUPAC. Next meeting: at EPF conference,</p>

				Eindhoven, July 15-20, 2001.
1999-021-1-400	Round Robin Test on the Molecular Characterization of Epoxy Resins by Liquid Chromatography	S. Podzimek	2003	Task Group has 21 members, 14 labs have sent results using various methods. Tentative results summarized and included in the joined publication about SEC RRT projects initiated by Dusan Berek. Meeting of some participants planned for Bratislava Conference on Liquid Chromatographic Procedures for Separation of Macromolecules (September 2001). Final results to be published in separate paper in <i>J. Appl. Polym. Sci.</i>
2000-028-1-400	Critically evaluated termination rate coefficients for free-radical polymerization. 1. Current status, evaluation of experimental methods, data for styrene and methyl methacrylate	G Russell	2003	First manuscript to be submitted for publication in July 2001 after meeting of task group members at Lucca (Italy) in June 2001
35/2000	Nomenclature For Rotaxanes And Catenanes	E Wilks	2001	Comments generated at the Warsaw 2000 meeting, were incorporated; revised version circulated to all WP members by November, 2000 per agreed timetable. Fox sent comments January, 2001; no comments from any other WP members. No work done on incorporating Fox's comments. Require serious discussion at Brisbane on whether this project should be cancelled owing to lack of support from other WP members.
1999-029-1-400	Postgraduate course in polymer science	Kratochvil	2000	Completed
421/30/93	The Influence of Reprocessing on the Structure-Property Characteristics of a Plasticized PVC Compound	D.R. Moore and C. Dehennau	1999	Completed – P&AC publication
401/1/93	Recycling of Polymers	N Bikales	1999	Completed – Macromol. Symp. Publication
428/5/93	Critically Evaluated Database of Kinetic Parameters for Free-Radical Polymerization	Gilbert	1998	Completed – 2 publications in P&AC, Macromol. Chem. Phys.
428/6/97	Critically Evaluated Database of Kinetic Parameters for Free-Radical Polymerization - 2	Buback	1999	Completed – 3 publications in P&AC, Macromol. Chem. Phys.

## APPENDIX A

### Future Meetings for Which IUPAC Sponsorship has been Sought or Approved

DATE	Proposed Location	Title	Contact
<b>2001</b>			
19-23 August	Brooklyn, New York, USA.	9th International Symposium on Macromolecules-Metal Complexes (MMC-9),	Levon
October 22-26	Crete, Greece	International Symposium of Ionic Polymerization	Hadjichristidis
11-15 November	Gramado, RS, Barzil.	6th Brazilian Polymer Conference / IX International Macromolecular Colloquium	Mauler
<b>2002</b>			
January 7-11	Denton, Texas, USA	10 <sup>th</sup> International Conference on Polymer Characterization	Brostow
2-3 February , 4-6 February	Stellenbosch, South Africa	South African IUPAC Conference on Macromolecules and Materials Science	Sanderson
May 12-15	Toronto, Canada	6 <sup>th</sup> International Symposium on Bio-Organic Chemistry	
3-7 June	St. Petersburg, Russia.	4th International Symposium on Molecular Order and Mobility in Polymer Systems	Birshtein
July 7-12	Beijing, China	World Polymer Congress 2002 - 39 <sup>th</sup> IUPAC Int. Symp. On Macromolecules	Wang
July 15-18	Prague, Czech Rep.	21st Discussion Conference of P.M.M. and 9th International ERPOS Conference: 'Electrical and Related Properties of Polymers and Other Organic Solids'	Vyprachticky
July 28 - August 2	Rostock, Germany	17th IUPAC Conference on Chemical Thermodynamics	Heintz
2-5 December	Japan	IUPAC Polymer Conference on the Mission and Challenges of Polymer Science and Technology	Nakahama
<b>2003</b>			
July 14-17	Prague, Czech Rep.	42 <sup>nd</sup> Microsymposium: Stabilization and Degradation of Polymeric Materials	
July 21-24	Prague, Czech Rep.	22 <sup>nd</sup> Discussion Conference: Spectroscopy of Partially Ordered Polymer Systems	
<b>2004</b>			
	Paris, France	World Polymer Congress 2004 - 40 <sup>th</sup> IUPAC International Symposium on Macromolecules	Vairon
July 12-15	Prague, Czech Rep.	43 <sup>rd</sup> Microsymposium: Polymer Gels	
October 17-22	Santiago, Chile	12 <sup>th</sup> International Biotechnology Symposium	Asenjo
<b>2006</b>			
	Rio de Janeiro, Brazil	World Polymer Congress 2006 – 41 <sup>st</sup> IUPAC International Symposium on Macromolecules	Canevarolo
<b>2008</b>			
	Taipei, Taiwan	World Polymer Congress 2008 – 42 <sup>nd</sup> IUPAC International Symposium on Macromolecules	
<b>2010</b>			

	UK	World Polymer Congress 2010 - 43 <sup>rd</sup> IUPAC International Symposium on Macromolecules	Richards
<b>2012</b>			
	North America	World Polymer Congress 2012 - 44 <sup>th</sup> IUPAC International Symposium on Macromolecules	

## APPENDIX C

### Division IV Elections 2001

#### Vice-President

Candidate
Abe
-Il Jin
Kim
Fosong Wang

#### Titular Members (7 positions)

Candidate	Candidate
Amis (Special Projects)	Jones (Electronic Pub.)
Ando	Kubisa (Conferences)
Barón (Nom. & Terminology) <sup>2</sup>	Laun (Characterisation) <sup>2</sup>
Buback (Characterisation) <sup>2</sup>	Novak
Hess (Nom. & Terminology) <sup>2</sup>	Reichmanis (Special Projects) <sup>2</sup>
Horie (Electronic Pub., Strategy)	Sanderson (Education) <sup>1</sup>

<sup>1</sup>presently AM; <sup>2</sup>seeking re-election as TM

#### Associate Members (6 positions)

Abe (Strategy) <sup>1</sup>	Laun (Characterisation) <sup>1</sup>
Amis (Special Projects)	Moad (Characterisation)
Barón (Nom. & Terminology) <sup>1</sup>	Ozerin (Electronic Pub.)
Berek (Characterisation)	Pasch (Characterisation)
Buback (Characterisation) <sup>1</sup>	Penczek (Conferences) <sup>1</sup>
Hess (Nom. & Terminology) <sup>1</sup>	Reichmanis (Special Projects) <sup>1</sup>
Horie (Electronic Pub., Strategy)	Sanderson (Education) <sup>2</sup>
-Il Jin (Education) <sup>1</sup>	Stejskal (Characterisation)
Jones (Electronic Pub.)	Tabak (Nom. & Terminology)
Khokhlov (Education) <sup>1</sup>	Vohlidal (Nom. & Terminology)
Kim (Characterisation)	Fosong Wang (Strategy)
Kubisa (Conferences)	Andrew Whittaker

<sup>1</sup>presently TM; <sup>2</sup>seeking re-election as AM

## **APPENDIX D**

### **IUPAC MACROMOLECULAR DIVISION COMMITTEE**

#### **Membership 2001 –2003**

##### **Titular Members**

Prof. R.F.T. Stepto (2002 –2005) President  
Prof. Jung-Il Jin (2000 – 2005) Vice-President  
Dr. W.J. Work (2002 – 2003) Secretary  
Prof. Máximo Barón (2002 – 2003)  
Prof. R.G. Gilbert (2002 – 2003) Past-President  
Prof. Michael Hess (2002 – 2003)  
Prof. Kazuyuki Horie (2002 – 2005)  
Prof. R.G. Jones (2002 – 2005)  
Prof. Przemyslaw Kubisa (2002 – 2005)  
Dr. H. Martin Laun (2002 – 2003)

##### **Associate Members**

Prof. Dusan Berek (2002 – 2003)  
Prof. Michael Buback (2002 – 2003)  
Prof. Alexei R. Khokhlov (2002 – 2003)  
Prof. Stanislaw Penczek (2002 – 2003)  
Prof. David Tabak (2002 – 2003)  
Prof. Jiří Vohlídal (2002 – 2003)  
Prof. Fosong Wang (2002 – 2003)

#### **National Representatives**

Yet to be nominated by the NAOs and chosen by the Division

## **Responsibilities**

<b>Characterisation Coordination</b>	D. Berek M. Buback H. M. Laun
<b>Terminology and Nomenclature Coordination</b>	M. Barón M. Hess
<b>Special Projects Coordination</b>	J. Vohlídal W. J. Work
<b>Education Coordination</b>	J.-Il Jin (CTC) A. R. Khokhlov D. Tabak
<b>Conference Coordination</b>	P. Kubisa S. Penczek
<b>Recruitment at Conferences</b>	R.G. Gilbert
<b>Electronic Publications</b>	R.G. Jones W. J. Work
<b>Strategy</b>	K. Horie (including Polymer Summit) J.-Il Jin Fosong Wang

## **Representation on other Committees**

<b>CHEMRAWN</b>	J.-Il Jin DTabak
<b>COCI</b>	to be decided
<b>CTC</b>	J.-Il Jin
<b>IDCNS</b>	to be decided
<b>Nomenclature Division</b>	to be decided

R. F. T. Stepto

13<sup>th</sup> July 2001