IUPAC MACROMOLECULAR DIVISION (IV)

Subcommittee on Macromolecular Terminology

Minutes of the meeting held at the Université Bordeaux 1
28th June – 1st July 2004

Present: G. Allegra, T. Chang, A. Fradet, J. He, M. Hess (chairman), P. Hodge (observer), K. Horie, A. D. Jenkins, J.-I. Jin, R. G. Jones (secretary), J. Kahovec, T. Kitayama, P. Kratochvil, P. Kubisa, E. Maréchal, W. V. Metanomski, G. Moad, W. Mormann, N. Nakabayashi, C. Ober, S. Penczek, M. Rinaudo (observer), F. Schue (observer), S. Slomkowski, R. F. T. Stepto (Division President), J.-P. Vairon, M. Vert (observer), J. Vohlidal.

K. Matyjaszewski attended the task group meeting of **2002-006-2-400** *New Radical Polymerization.* K.-H. Hellwich from the 801 Advisory Subcommittee attended for discussion of the proposed Interdivisional Project on Macromolecular Stereochemistry.

1. Chairman's Opening Remarks

1.1 Welcome and Apologies

The Chairman welcomed members and in particular Phil Hodge and François Schué to the meeting. He extended his apologies for the unavoidable late funding reduction.

Apologies for absence were accepted from Mazimo Barón Itaru Mita, Ramani Narayan, David Tabak and Ted Wilks.

It was noted that Ted Wilks had indicated that for personal reasons he would no longer attend SMT meetings but that he would continue to work on the projects of which he was a task group member. The Chairman thanked him for his contributions to previous SMT meetings and for his pledge of continued service.

1.2 Approval of the Minutes from the Ottawa Subcommittee Meeting

Dr. Hellwich expressed concern that his presence had not been noted. It was pointed out that his presence was acknowledged in the same way as it is above, i.e. in the paragraph immediately before item.

The minutes were accepted without change.

1.3 Matters arising from/after the Ottawa Minutes

It was noted that the **2002-037-1-800** *Nomenclature for Macromolecular Rotaxanes and Catenanes* is presently dormant pending the completion of the Division VIII project **2002-007-1-800** *Nomenclature for Rotaxanes*.

All other action points are for report under item 3.

1.4 Publications since Ottawa

1999-048-1-400 *Definitions of Terms Relating to Reactions of Polymeric Materials and Functional Polymeric Materials*, K. Horie, M. Barón, R. B. Fox, J. He, M. Hess, J. Kahovec, T. Kitayama, P. Kubisa, E. Maréchal, W. Mormann, R. F. T. Stepto, D. Tabak, J. Vohlídal, E. S. Wilks, and W. J. Work, *Pure Appl. Chem.* 76(4), 889-906, 2004

It was also reported that *Definitions of Terms Relating to the Non-Ultimate Mechanical Properties of Polymers* (IV.1) first published in *Pure Appl. Chem.* **70**, 701-754 (1998) has now been published in Japanese in *Kobunshi,* **53(2)**, 96-101 (2004).

1.5 Upcoming publications

410/24/93 *Terminology Related to Multiphase Polymer Composites and Blends* – Horie and Work: awaiting final approval from the chairman of ICTNS following resubmission of the finalised project on 16th June. Publication is now expected in October 2004.

1.6 Projects in final stages of preparation

It was noted that the following projects should be complete for the meeting that will take place in Beijing in 2005:

2000-006-1-400 *Terminology of Polymers with Ionizable Groups and Polymers Containing Ions* - Kubisa

2000-007-1-400 *Glossary of Terms Relating to the Structure of Inorganic and Polymeric Gels and Networks, Inorganic Polymeric Materials and the processing thereof* - Jones

2001-081-1-800 *Terminology and Structure-Based Nomenclature of Dendritic and Hyperbranched Polymers* - Kahovec

2002-014-1-400 *Glossary of Class Names of Polymers Based on their Chemical Structure and Molecular Architecture* - Vohlidal

2002-016-1-400 *Terminology for Kinetics, Thermodynamics and Mechanisms of Polymerization* **-** Penczek (this project was formerly **410/26/95**)

2002-017-1-400 *Polymerization Processes and Polymers in Dispersed Systems* - Slomkowski

2003-019-2-400 *Definitions of terms relating to crystalline polymers - revision of IUPAC Recommendations 1988* - Allegra.

2002-048-1-400 *Compendium of Macromolecular Nomenclature and Terminology (The Purple Book, 2nd. Edition)* – Wilks & Metanomski

Accordingly they would remain open for discussion and report, for which time would set aside in the timetable of the present meeting (vide infra).

There is a particular need to complete the revision of *The Purple Book*. It was noted that the revision of the *Guide to Polymer Terminology* was close to completion but Val Metanomski asserted that the rationale for revising it be given serious consideration. Accordingly, it is not listed above but was allocated time for re-opened discussion at the present meeting.

1.7 IUPAC developments

The only point of note that has been drawn to the attention of SMT since the Ottawa meeting is that the rules for formatting definitions are covered in the ICTNS document *Guidelines for Drafting IUPAC Technical Reports and Recommendations* (2004). They can also be found in IUPAC Handbook 2004-2005, p.83 *et seq* and on the IUPAC Website at http://www.iupac.org/projects/index.html

1.8 Timetable for the Bordeaux Meeting

Prior to the meeting the Secretary had circulated a preliminary timetable. Subject to minor modification to accommodate late arrivals and early departures the timetable was finalised (see Appendix 1).

2. Projects that have been submitted for Public Review

None were reported.

3. Projects in Preparation by Working Parties

410/22/93 *Guide to Polymer Terminology* – Metanomski & Wilks

Val Metanomski explained the background to the existence of *The Guide* as a ready reference for students and the uninitiated and described it as being akin to a textbook assembled from Division IV project content. It is now out of date. It should not be published in its present form (8 chapters) because its contents are out of balance both in terms of coverage of all the existing IUPAC recommendations and in uneven treatment in each of the existing chapters. Only chapters 1 and 8 had been revised so it is beginning to look obsolete.

Val and Ted Wilks both think that publication should be on hold, since bringing a revised version to press would take at least two years. Instead, it would be best to aim for earlier implementation of an on-line version. It was agreed that Chapters 1 and 8 could go on-line immediately and other chapters as and when they are available. To that end, Dick Jones would contact Ted, copying Val, to obtain whatever copy is available.

ACTION: Jones

Dick Jones would then contact Bob Stepto and Michael Hess to determine who needs to up-date individual chapters. Michael Hess, Jaroslav Kahovec, Val Metanomski and Bob Stepto, as agreed in Ottawa, would check revised chapters. Following approval, the material would be placed on the web.

ACTION: Stepto, Hess & Jones

2000-006-1-400 *Terminology of Polymers with Ionizable Groups and Polymers Containing Ions* - Kubisa

The ‘Ottawa’ draft had been reduced to the most basic of definitions, further elaborated and clarified through the use of extensive notes. The revised draft had been circulated to the task group and subsequently the Subcommittee. Key people had also met in Zakopane earlier in the year. The latest draft had been submitted to external experts.

All outstanding issues relating to terms 1, 6 and 7 were resolved at Bordeaux. Changes would be incorporated and SMT members circulated with the final draft in August 2004. Comments would be due by October for public review and subsequent submission to ICTNS.

ACTION: Kubisa

The task group would be expanded to include Werner Mormann and Marguerite Rinaudo.

2002-006-2-400 *New Radical Polymerization* - Jenkins, Moad

This project had previously been called *Terminology for Radical Polymerization with Minimal Termination (so- called "living" and/or "controlled" radical polymerization)*.

Aubrey Jenkins presented the report of the task group, a summary of which is copied below:

Chain termination: The definition agreed in Ottawa in 2003 was confirmed. This reads as follows.

> Chemical reaction in which chain carriers are irreversibly converted into inactive species, without the formation of any new chain carriers.

Chain deactivation: It was agreed that this term embraced both reversible and irreversible interruption of chain-growth.

Reversible deactivation: The definition of this term should be the same as that in the Kinetics document, but it was felt that this required slight modification. The following seemed to provide the basis for a suitable definition.

> Deactivation of a chain carrier in a chain polymerization, reversibly converting an active centre into an inactive one then, within the lifetime of this growing macromolecule, regenerating an active species.

Dormant polymer chain: The definition agreed in Ottawa was confirmed. This reads as follows.

> Living polymer chain that is not active.

Living polymer chain: It was proposed that the definition adopted in Ottawa was modified to read as follows.

> Polymer chain that retains its potential for propagation for the duration of the experiment.

There was some discussion about the significance of time-scale in connection with definitions pertaining to "living polymer" and related terms. Suggestions were (i) the duration of the experiment and (ii) the duration of the polymerization. No decision was made.

It was suggested that it would be useful to define *ideal* in relation to *living*, and then to broaden the definition so as to deal with real systems; but strong objections have been expressed to the use of any adjective qualifying *living*.

To some people, the term *living radical* is an oxymoron. The suggestion was made that the difficulty could be removed by devising the new adjective *living-radical*. This term could then be defined so as to have a useful meaning.

The recommendation was made that definitions should be based on what a radical does, rather than what it does not do. Thus, rather than refer to the *absence* of *e.g.,* deactivation, one should make a positive statement, *e.g*., say that the only reaction undergone by a chain carrier is propagation.

It was agreed that any definition used in this present project should be identical to that in the 'Kinetics' project.

Discussion of the significance of *controlled polymerization* was deferred for future consideration by the project leaders.

ACTION: Jenkins & Moad

2002-014-1-400 *Glossary of Class Names of Polymers Based on their Chemical Structure and Molecular Architecture* - Vohlidal

A meeting of key members of the task group (PK, JK, MH, RFTS, JV) had taken place in Poland. It had been decided to shorten the document and drop all reference to reactions. It had further been recommended that entries were converted to the singular although this presented some problems. The task group decided to use singular terms with a note added within the introduction presenting a rationale explaining why in some cases this has not been done.

Jiri Vohlidal will obtain further input from Bob Stepto and Val Metanomski by November 2004 and will prepare a new draft for submission to the task group by the beginning of January 2005. Responses will be sought for the end of January and a draft sent to the Subcommittee and thereafter to experts by March 2005. Responses will be expected by May 2005 for preparation of a revised draft for presentation at the Beijing meeting in the summer.

ACTION: Stepto, Metonomski and Vohlidal

2002-016-1-400 *Glossary of Terms Related to Kinetics, Thermodynamics and Mechanisms of Polymerization* – Penczek

A revised manuscript (Glossary B1) incorporating new entries and modifications recommended at the Ottawa SMT meeting was presented by Stan Penczek. The task group met to review this version and a number of changes were incorporated directly by Dick Jones (Glossary B2). It was subsequently realised that not all the recommendations had been incorporated and it was agreed that a third draft (Glossary B3) would be produced by RGJ for submission to SMT members by September. Responses would be sought for the end of October so that a final version could be prepared in November.

ACTION: Jones, Penczek

2002-017-1-400 *Polymerization Processes and Polymers in Dispersed Systems* - Slomkowski

The task group leader's computer had been stolen on the way to Bordeaux so he was unable to table the latest project manuscript. However, he reported that all actions from the Ottawa meeting of the subcommittee had been implemented. In particular, corrections from Bob Stepto and members of the task group had been incorporated, the Division President had signed it off in readiness for its submission to ICTNS and public review.

ACTION: Slomkowski

All is on track and it was acknowledged that consistency with other projects, in particular with **2000-007-1-400** *Sol-gel*, must still be ensured.

ACTION: Slomkowski, Jones

2002-048-1-400 *Compendium of Macromolecular Nomenclature and Terminology (The Purple Book, 2nd Edition)* **-** Wilks, Metanomski

Ted Wilks had compiled a list of topics for the Compendium, some of them new topics. The principle that anything in the *Purple Book* has to first be published in P&AC as completed projects was confirmed. However, whilst this principle applies to both Terminology and Nomenclature projects there are two chapters (10: *Multiphase Polymer Composites & Blends* & 11: *Reactions of Polymers & Functional Polymeric Materials*) in the revised *PB* that do not meet that requirement, though they should do so soon. Two more chapters (5: *Kinetics, Thermodynamics and Mechanisms of Polymerization* & 22: *Polymer Class Names*) are still some way from completion. An old list for Chapter 23: *Abbreviations* can be readily updated so presents no problem.

Ted Wilks had offered three options:

1) Wait for all chapters to become available following publication in P&AC – publication would still be at least two years away;
2) Publish without Chapter 5 (*Kinetics, Thermodynamics and Mechanisms of Polymerization*) and hope for publication during 2005/06;
3) Publish without Chapters 5 and 22 (*Kinetics, Thermodynamics and Mechanisms of Polymerization* and *Polymer Class Names*) and aim for publication in late 2004 or early 2005.

Val Metanomski noted that *e*-publication will soon take over but acknowledged that a new *PB* in hard copy is required now. It was further noted that the projects for Chapters 5 and 22 cannot be accelerated and that they would need 5 months public review even when ready. Augmentation of an electronic version as when copy became available would not be a problem, so with that understanding option 3 was carried on a show of hands.

Kaz Horie reported that the *PB* (2nd edition) is being translated into Japanese. It was noted that this was in order as long as the national adhering organisation agrees and that it is understood that no royalties accrue. Copyright would be discussed with the IUPAC secretariat.

ACTION: Horie

2003-019-2-400 *Definitions of terms relating to crystalline polymers - revision of IUPAC Recommendations 1988* - G Allegra.

The subcommittee had actioned the preparation of a new draft in time for the Bordeaux meeting but instead a paper was presented indicating new material and a revised structure that was now envisaged.

The task group decided that as much as possible of the original 1988 recommendations should be incorporated. However, even the title is recommended for change. This aspect was not resolved, so only when the agreed list of definitions is available will a title be determined. The task group has accepted all of the suggestions from experts. The document is to start with general definitions based on crystallographic norms and then develop the special notions of relevance to polymers, i.e. folding of chains at crystal edges. Disordered system definitions will follow. Terminology related to morphological aspects will need expansion.

It was agreed that Guiseppe Allegra would supply a list of terms by the end of July with a request for notification of additional terms by September. They would be organized within the revised structure by January 2005 and circulated by March for the preparation of a draft document in time for the Beijing meeting.

ACTION: Allegra and task group members

4. Interdivisional projects

1999-051-1-800 *Source-Based Nomenclature for Modified Polymer Molecules* – Kitiyama

This project was inherited from Ted Wilks who remains a member of the task group but not its leader. Agreement has now been reached on the graphical representation of polymer modification reactions and the naming of modified polymers.

A revised draft will be sent to task group members by November 2004 with comments required by January 2005 for incorporation by March.

ACTION: Kitiyama and task group members

New members of the task group are Przemyslaw Kubisa, Phil Hodge, Alain Fradet, Michel Vert and Chris Ober. Dick Jones's name seemed to have been dropped from the list of task group members so is restored.

2000-007-1-400 *Glossary of Terms Relating to the Structure of Inorganic and Polymeric Gels and Networks, Inorganic Polymeric Materials and the processing thereof* - Jones

This project is essentially complete with only one or two small points still requiring attention. It was noted that terms relating to the mechanical properties of elastomers have presented unresolved difficulties as the project developed. It was decided that these should be left out and that Bob Stepto would write a disclaimer explaining their absence.

ACTION: Stepto

The final draft will be prepared for the end of October 2004 and sent to external experts requesting a response by the end of January 2005. Any observations that require action will be incorporated by March; thereafter the project will be submitted to ICTNS and for public review (inc.e-Polymers).

ACTION: Jones

2001-081-1-800 *Terminology and Structure-Based Nomenclature of Dendritic and Hyperbranched Polymers* - Kahovec

This project is practically finished. Jaroslav Kahovec is to send the manuscript to Bob Stepto for finishing touches after which it will go for expert and public review.

ACTION: Kahovec

2001-082-1-800 *Terminology and Nomenclature of Macromolecules with Cyclic Structures* - Mormann

Werner Mormann summarised progress, which in particular had been concerned with updating the section on bridged molecules and spirocyclics. Bob Stepto noted that it included many examples of macromolecules that might never be synthesised and considered the section to be too long. It was agreed that essential examples would be moved to the main body of the document and that this section will be removed.

A final draft would be sent to task group members by the end of September. A report to the Division VIII meeting scheduled for the end of August 2004 in Hungary would carry the proposal that the final draft be sent to public review (to include *e*-Polymers) and ICTNS by November 2004.

ACTION: Mormann

2002-037-1-800 *Nomenclature for Macromolecular Rotaxanes and Catenanes* - Wilks

See item **1.3**.

2003-042-1-800 *Source-based Nomenclature of Organic Homopolymers and Copolymers* - Kitayama

This project originated as the feasibility study **F-22** *Source-Based Nomenclature of Copolymers.* The title was then changed to *Source-based Nomenclature of Single Strand Organic Polymers* but at the Bordeaux SMT meeting the above title was adopted since it was perceived that there was a risk of conflict with 'structure-based' projects.

The task group leader tabled the first draft. It was agreed that the Introduction needs revision and Aubrey Jenkins agreed to undertake this task.

Action: Jenkins

Section 2 on Monomers needs stripping down. In section 4, copolymer notation needs to reduced to a single style, the use of *g* or *graft* and *b* or *block* etc. has still to be agreed. The spacing in names is also variable, e.g. poly (vinyl chloride) contrasting with poly(ethylene terephthalate). This is inconsistent and requires rationalisation. Some polymers can have two different 'sources', e.g. the same product can arise from an ω-hydroxycarboxylic acid

condensation and a ring opening of a lactone. Thus, in many instances the implicit monomer model is difficult to apply to condensation polymers and a guideline needs specification.

Bob Stepto expressed reservations about having two naming systems but the importance of having source-based nomenclature was acknowledged.

It was felt that the document was premature and needs more input from task group members. It was agreed to re-start the project on a first draft basis and thereafter Itaru Mita and Tatsuki Kitayama would take lead roles in determining the second draft. The first draft would be prepared by January 2005. This would be distributed to task group members who would forward their observations by the end of March with a view to producing the next draft by May 2005.

ACTION: Kitayama, Jenkins and Mita

New members joined the task group which now comprises Tatsuki Kitayama (task group leader), Alain Fradet, Michael Hess, Phil Hodge, Kaz Horie, Aubrey Jenkins, Jaroslav Kahovec, Pavel Kratochvil, Itaru Mita, Werner Mormann, Chris Ober, Stan Penczek, Bob Stepto, Kevin Thurlow, Jiri Vohlidal and Ted Wilks. Dave Haddleton of the University of Warwick would act as a consultant.

2003-060-2-400 *Terminology on separation of macromolecules* - Chang

This project had started life as **X/97** *Interdivisional Meeting on Polymer Chromatography - Terminology in the Chromatography of Polymers and Related Separations (Separations Project)* - Hess, Moore. It was noted that it had not been preceded by a feasibility study but had recently been approved as an interdivisional project with Division V (Analytical).

It was agreed that there was much scope for rationalising the terminology of polymer separation and not just in relation to SEC. However, the project would be confined to liquid chromatographic methods.

The complete list of terms was to be assembled for the end of this calendar year and the definitions by next year.

ACTION: Chang

The task group was expanded and comprises Taihyun Chang (task group leader), Howard Barth, Dušan Berek, Vadim Davankov, Bob Gilbert, Michael Hess, Pavel Jandera, Tatsuki Kitayama Pavel Kratochvil, Graeme Moad, Harald Pasch, Marguerite Rinaudo, Bob Stepto, and David Tabak

5. Projects in process of approval

None were presented for discussion but as noted in section **1.6**, some will seek approval before the SMT meeting in Beijing in 2005.

6. Feasibility Studies

F-6 *Thermal Properties* - Shibaev

Michael Hess reported that the task group leader had not responded to attempts to contact him so no real progress had been made. Michael had now contacted a new expert, Vincent Mathot, who will assist him in bringing the draft manuscript prepared in 2000 to a form that will achieve project status. This will be distributed to SMT members and the final decision will be deferred until next year's meeting. It was noted that support statements from external experts are still required.

ACTION: Hess

The membership of the task group was confirmed to be Michael Hess (acting task group leader), Jiasong He, Kaz Horie, Val Metanomski, Graeme Moad, Bob Stepto, Michel Vert, Jiri Vohlidal.

F-18 *Ultimate Mechanical Properties of Polymers* – Hess

The number of terms has been reduced and the views of experts are being sought.

The task group consisting of Jiasong He, Michael Hess (leader), Bob Stepto and Bill Work was confirmed.

F-19 *Abbreviations* – Tabak

The task group leader has received substantial input from Michael Hess, Itaru Mita, Ingrid Meisel and Jiasong He. It was noted that Itaru's membership of the ISO 1043-1 project team has been invaluable to the project. ISO 1043-1 will accordingly be cited in the Abbreviations section of the revised *Purple Book*.

Itaru Mita's paper dated 2004/6/17 was tabled along with ISO 1043-1. Task group members are asked to send their comments and observations to Itaru and David Tabak by November 2004.

ACTION: Task group members

The project remains a feasibility study.

Given David Tabak's continued indisposition, Jiasong He will become joint project leader. Other task group members are Michael Hess, Kaz Horie, Jaroslav Kahovec, Tatsuki Kitayama, Pavel Kratochvil, Ingrid Meisel, Itaru Mita, Nobuo Nakabayashi, Stanislaw Slomkowski, Michel Vert, Bill Work.

F-20 *Multilingual Encyclopedia* - Hess

Input was now required from as many language bases as possible. Michael Hess is to produce an exemplary document for the Beijing meeting of SMT.

ACTON: Hess

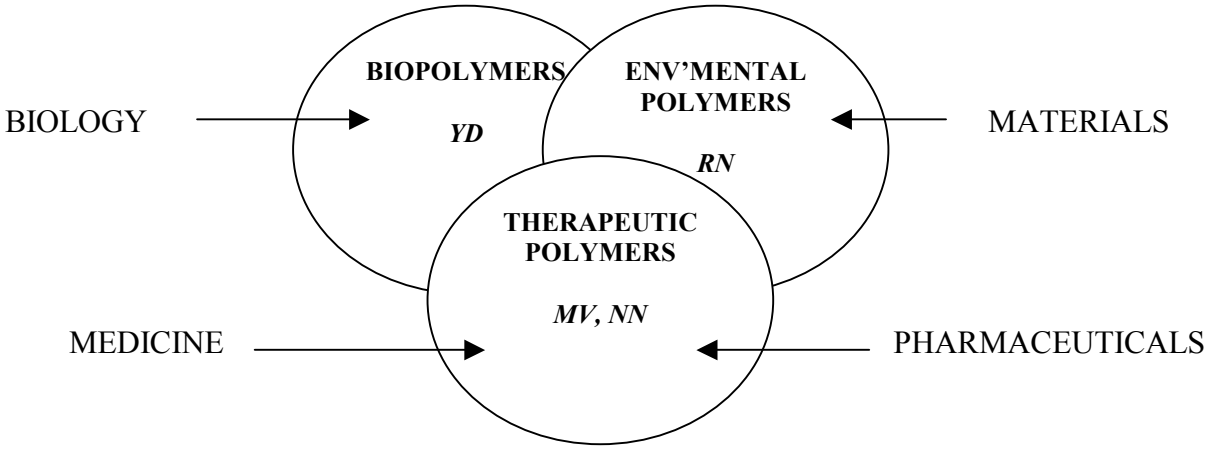
The task group comprises Michael Hess (task group leader), Maximo Baron, G. Camino (Polytechnic of Turin) Taihyun Chang, Alain Fradet, Jiasong He, Tatsuki Kitayama, Przemyslaw Kubisa, Marguerite Rinaudo.

F-21 *Biodegradation and Biodegradable Macromolecules* – Narayan
F-23 *Terminology on Biomedical Polymers* – Nakabayashi
PFS-1 *Biomacromolecules/Biopolymers* - Penczek

The above two feasibility studies and proposed feasibility study were considered as a portfolio of 'bio-projects'.

Ramani Narayan (RN) had intended to be present for consideration of his study. However, instead he faxed a revised project submission form under the title, *Nomenclature and Terminology for Biobased and Biodegradable Polymers* as a basis for discussion.

Stan Penczek reported that there has been a PFS-1 meeting in Tokyo attended by himself, Ramani Narayan (RN), Emo Chiellini (EC), Michel Vert (MV) and Yoshiharu Doi (YD) at which it had been noted that there was much overlap with the other proposed projects. To aid rationalisation, he formally withdrew PFS-1 and yielded the floor to Michel Vert (MV). MV, speaking for himself and Nobuo Nakabayashi, (NN) said that he, YD and RN, as research collaborators, know the problems well. As preliminary documents, lists of terms to be considered in each relevant domain were established by YD, MV and RN by January 2004, further consideration had led to the conclusion that the overlaps indicated below, in which the specialist expertise of the interested parties is denoted, presented a serious problem. The project forms submitted by RN and MV simply present confirmatory evidence of the problem.



Bob Stepto asserted that a project broadly within the area must launch without further delay and suggested the one on therapeutic polymers. However, since MV, RN and YD were scheduled to meet in Beijing in August 2004 it was agreed that they would decide on the identity of a project that would launch within the present biennium. It was further agreed that it must be a '400' project and thereby fall fully within the remit of SMT. The launch of the other projects could be deferred until the next biennium.

ACTION: Vert (Nakabayashi), Narayan, Doi

Task group members identified for *Terminology for Biomedical (Therapeutic) Polymers* are Michel Vert (task group leader), Avi Domb, Michael Hess, Nobuo Nakabayashi, Ramani Naryan, Stanislaw Penczek, Marguerite Rinaudo and François Schué. Those identified for *Terminology for Biobased and Biodegradable Polymers* (provisional title) are Ramani Narayan (task group leader), Emo Chiellini, Yoshiharu Doi, Stanislaw Penczek, François Schué, Michel Vert.

7. Proposed Feasibility Studies.

It was agreed that revision of *Macromolecules in Solution* was urgent and should become a project (expanded beyond dilute solutions) this biennium under the leadership of Taihyun Chang.

ACTION: Chang

Bob Stepto and Michael Hess said they would prepare a proposal document for *Elastic Properties of Polymers.*

ACTION: Stepto and Hess

Chris Ober proposed two projects in which there was considerable interest: *Electric Field Responsive Polymers* and *Self-Assembly and Aggregation in Polymers.* Potential task group members were identified for both. For the former they were Chris Ober (task group leader), Jung-Il Jin, Dick Jones, Michael Hess, Kaz Horie, François Schué and Jiri Vohlidal. For the latter they were Chris Ober and Dick Jones (joint task group leaders), Taihyun Chang, Phil Hodge, Pavel Ktatochvil, Graeme Moad and Michel Vert.

ACTION: Ober and Jones

8. Dispersity

It was noted that, during the course of the year, a small task group consisting of Michael Hess, Pavel Kratochvil, Bob Stepto and Aubrey Jenkins had reached agreement that *dispersity* be the recommended term to describe macromolecular size distribution and that the use of the term *polydispersity* and all related terminology should be discouraged. It was agreed that this would be published as a single self-standing recommendation but prior to that a final version would be circulated to SMT members by December 2004. It would subsequently be included in the next version of the 'Solutions' document (*Definitions of Terms Relating to Individual Macromolecules, Their Assemblies, and Dilute Polymer Solutions* (Recommendations 1988) *Pure Appl. Chem.*, *61*, 211-241 (1989)).
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ACTION: Stepto

9. Any other business

9.1 Project Extensions

The following project needing extension requires the completion of a project application form before the end of 2004:

1999-051-1-800 *Source-Based Nomenclature for Modified Polymer Molecules* –1 year $2K

ACTION: Kitayama

10. SMT Membership

For full details including those of provisional members (the observers at Bordeaux) see Appendix 3):

Prof. G. Allegra
Prof. M. Baron
Dr. W. V. Metanomski
Prof. I. Mita

Prof. T. Chang
Dr. A. Fradet
Prof. J. He
Dr. M. Hess (Chairman)
Prof. K. Horie
Prof. A. Jenkins
Prof. J.-I. Jin
Prof. R. G. Jones (Secretary)
Dr. J. Kahovec
Prof. T. Kitayama
Prof. P. Kratochvil
Prof. P. Kubisa
Dr. G. Moad
Prof. W. Mormann
Prof. N. Nakabayashi
Prof. C. Ober
Prof. S. Penczek
Prof. I. Schopov
Prof. S. Slomkowski
Prof. R. F. T. Stepto
Prof. D. Tabak
Prof. J.-P. Vairon
Prof. J. Vohlidal
Dr. E. S. Wilks
Dr. W. J. Work

11. Year 2005 Meeting

This will be at the Beijing General Assembly to be held between 15th and 18th August 2005 prior to the World Chemistry Congress. See Appendix 4 for provisional schedules.

12. Closing Remarks

Michael Hess expressed his thanks to the participants and all others who have helped to make good progress during the last year, thus allowing the Bordeaux meeting to be a success. In particular he expressed thanks and appreciation to those members of the group who will have to relinquish SMT activities for whatever reason and who will probably not be able to join future meetings. In addition, he expressed deep appreciation to Professor Michel Fontanille and Catherine Roulinat of LCPO of Université Bordeaux I for facilitating the venue and for their unstinting efforts to secure the smooth running of the meeting. He closed wishing members a safe journey home and/or to Paris for the Division meeting and the World Polymer Congress, and looked forward to seeing as many as possible next year in Beijing.

RGJ – 4th October 2004

Appendix 1: SMT SCHEDULE - BORDEAUX

<table>
<tr><th>HOURS/DAYS</th><th>MONDAY</th><th colspan="2">TUESDAY</th><th>WEDNESDAY</th><th>THURSDAY</th></tr>
<tr><td>08.30-09.00</td><td rowspan="4">AGENDA

Items:

1.1-2</td><td colspan="2" rowspan="4">2000-016
KINETICS</td><td rowspan="2">2002-006
NEW RADICAL</td><td>2002-014
Glossary
Class Names</td></tr>
<tr><td>09.00-09-30</td><td>2000-007
Sol-gel</td></tr>
<tr><td>09.30-10.00</td><td rowspan="2">2003-019
Crystalline
Polymers</td><td>F-6 Thermal Properties</td></tr>
<tr><td>10.00-10.30</td><td>F-18
Ult. Mech. Properties</td></tr>
<tr><td>10.30-11.00</td><td rowspan="2">2001-082
Macrocyclics
*</td><td rowspan="2">2000-006
ION P.</td><td rowspan="3">2003-042
SOURCE-BASED NOMEN.
*</td><td rowspan="2">2002-048
(Purple Book)</td><td>F-19
Abbreviations</td></tr>
<tr><td>11.00-11.30</td><td>F-20
Multilingual Encyclopaedia</td></tr>
<tr><td>11.30-12.00</td><td rowspan="2">2002-014
GLOSSARY
CLASS NAMES</td><td rowspan="2">2002-017
DISP. SYSTEMS</td><td>2002-016
Kinetics</td><td>F-21
Biodegradation & Biodegradable</td></tr>
<tr><td>12.00-12.30</td><td>2000-006
Ions & Ionizable
Polymers</td><td>F-23
Biomedical Polymers</td></tr>
<tr><td>12.30-13.00</td><td rowspan="3">Lunch</td><td colspan="2" rowspan="3">Lunch</td><td>2002-006
New Radical</td><td>New Feasibility Studies</td></tr>
<tr><td>13.00-13.30</td><td>Lunch</td><td rowspan="2">Lunch</td></tr>
<tr><td>13.30-14.00</td><td rowspan="6">Excursion</td><td rowspan="4">Return to Bordeaux</td></tr>
<tr><td>14.00-14.30</td><td>2000-016
KINETICS</td><td colspan="2">2003-042
Source-Based Nomenclature *</td></tr>
<tr><td>14.30-15.00</td><td rowspan="2">PFS-1
BIOMOLS/
BIOPOLS</td><td colspan="2" rowspan="2">2000-007
SOL-GEL</td></tr>
<tr><td>15.00-15.30</td></tr>
<tr><td>15.30-16.00</td><td rowspan="2">2003-019
CRYSTALLINE
POLYMERS</td><td colspan="2">1999-051
Modified P.*</td><td rowspan="4">Depart for Paris</td></tr>
<tr><td>16.00-16.30</td><td colspan="2">2002-017
Dispersed Systems</td></tr>
<tr><td>16.30-1700</td><td>2001-081
DENRITICS*</td><td colspan="2" rowspan="2">X-97 POLYMER CHROMATOGRAPHY
*</td></tr>
<tr><td>17.00-17.30</td><td>PFS-1 BIOMOLS/
BIOPOLS</td></tr>
<tr><td>Evening</td><td></td><td colspan="2"></td><td>Dinner 8 p.m.</td><td></td></tr>
</table>

WORKING PARTIES (uppercase) ***W/P reports to subcommittee (lowercase ital)***

*** Interdivisional projects – mainly for report (lowercase ital.) some discussion (lowercase non-ital.).**

Appendix 2: WORKING PARTIES

PROJECTS	NAMES
SUB-COMMITTEE PROJECTS	
410/22/93 *Guide to Terminology and Nomenclature*	Alemán, Baron, Fox, Hatada, Hess, Horie, Jenkins, Jin, Jones, Kahovec, Kramer, Kratochvìl, Kubisa, Maréchal, Meisel, Metanomski, Penczek, Shibaev, Sirigu, Stepto, Swift, **Wilks**, Work.
410/24/93 *Multiphase Composites & Blends*	Fox, Hess, Horie, **Work**, Baron, Stepto
2000-006-1-400 *Ions & Ionizable*	Hess, Jones, **Kubisa**, Mormann, Rinaudo, Schubert, Swift, Tabak, Vohlídal
2000-007-1-400 *Inorganic & Polymeric Gels & Networks*	Chadwick (Div.II), He, Hess, Horie, **Jones**, Meisel, Mita, Work, Stepto, Vohlidal
2002-014-1-400 *Glossary of Class Names*	Baron, Fox, Hess, Horie, Jones, Kahovec, Meisel, Metanomski, Mormann, Stepto, Swift, Tabak, **Vohlidal**, Wilks.
2002-016-1-400 *Terminology for Kinetics etc.*	Baron, Hatada, Hess, Jenkins, Kubisa, Maréchal, Moad, **Penczek**, Pepper, Schulze, Sigwalt, Stepto, Vohlidal.
2002-017-1-400 *Polymer in Dispersed Systems*	Alemán, Hess, Horie, Kubisa, Meisel, Penczek, **Slomkowski**, Mormann, Gilbert
2002-006-2-400 *Living and Controlled Radical Polymerization*	**Jenkins**, Bon, Fukuda, Gilbert, Heuts, Kratochvíl, Matyjaszewski, Moad, Monteiro, Ohno, Penczek, Quirk, Russell, Stepto, Vairon
2003-019-2-400 *Crystalline Polymers (revision)*	**Allegra**, Bassett, Blackwell, Geil, Hess, Hikosaka, Jin, Lotz, Meille, Mormann, Stepto, Work.
2003-060-2-400 *Polymer Chromatography*	Baron, Berek, **Chang**,Gilbert, Hess, Kitayama, Mori, Stepto, Vohlidal, Kratochvìl, Jandera, Dabankov.
INTERDIVISIONAL PROJECTS	
1999-051-1-800 *Modified Polymers*	Fradet, Hodge, Horie, Jones, Kahovec, **Kitayama**, Kubisa, Marèchal, Ober, Vohlidal, Vert, Wilks
2001-081-1-800 *Dendritic & Hyperbranched*	Baron, **Kahovec**, Metanomski, Fox, Horie, Kubisa, Mita, Stepto.
2001-082-1-800 *Cyclic Polymers*	Baron, Fox, Hellwich, Horie, Kahovec, Kitayama, Kubisa, Maréchal, Meisel, **Mormann**, Metanomski, Mita, Schultz, Stepto, Swift, Wilks.
2002-037-1-800 *Rotaxanes & Catenanes*	Kahovec, Kubisa, Marèchal, Metanomski, Stepto, **Wilks**
2003-042-1-800 *Source-based Nomenclature of Organic Homopolymers & Copolymers*	**Kitayama,** Fradet, Haddleton, Hess, Hodge, Horie, Jenkins, Kahovec, Kratochvil, Mita, Mormann, Ober, Penczek, Stepto, Thurlow, Vohlidal, Wilks
FEASIBILITY STUDIES	
F-6 *Thermal Properties*	**Hess** (acting task group leader), He, Horie, Metanomski, Moad, Stepto, Vert, Vohlidal.
F-18 *Ultimate Mechanical Properties*	**Hess**, He, Stepto, Work.
F-19 *Abbreviations*	Hess, **He**, Horie, Kahovec, Kitayama, Kratochvil, Meisel, Mita, Nakabayashi, Slomkowski, **Tabak**, Vert, Work,
F-20 *Multilingual Encyclopaedia*	**Hess**, Baron, Camino (Polytechnic of Turin), Chang, Fradet, He, Kitayama, Kubisa, Rinaudo
F-21 *Biobased & Biodegradable*	**Narayan**, Chiellini, Doi, Penczek, Schué, Vert.
F-23 *Biomedical Polymers*	**Vert**, Domb, Hess, Horie, Nakabayashi, Naryan, Penczek, Rinaudo, Schué.
PROPOSED FEASIBILITY STUDIES	
PFS-1	**WITHDRAWN**
PFS-2 *Macromolecules in Solution*	**Chang**
PFS-3 *Elastic Properties of Polymers*	**Hess & Stepto**

PFS-4 *Electric Field Responsive Polymers*	**Ober**, Jin, Jones, Hess, Horie, Schué, Vohlidal
PFS-5 *Self-Assembly and Aggregation in Polymers*	**Ober & Jones**, Chang, Hodge, Kratochvil, Moad, Vert.

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cont.

Appendix 4: Provisional Schedules for Division IV and SMT meetings in Beijing 2005

Meetings by Body

IUPAC General Assembly: 13-21 August 2005, Beijing, China

Div. IV: Macromolecular

Date Start Time Room Number/Name Capacity End Time Confirmed A/V Furniture

Division Committee

Saturday, August 13, 2005 9:00
Meeting Room
Room 10 30 Mobile OH 12:30 No
Saturday, August 13, 2005 14:00
Meeting Room
Room 10 30 Mobile OH 17:30 No
Sunday, August 14, 2005 9:00
Meeting Room
Room 10 30 Mobile OH 12:30 No
Sunday, August 14, 2005 14:00
Meeting Room
Room 10 30 Mobile OH 17:30 No

Meetings by Body

IUPAC General Assembly: 13-21 August 2005, Beijing, China

Div. IV: Subcommittee

Date Start Time Room Number/Name Capacity End Time Confirmed A/V Furniture

Macromolecular Terminology, Subcommittee on

Monday, August 15, 2005 9:00
Meeting Room
Room 12 30 Mobile OH 12:30 No
Monday, August 15, 2005 14:00
Meeting Room
Room 12 30 Mobile OH 17:30 No
Tuesday, August 16, 2005 9:00
Meeting Room
Room 12 30 Mobile OH 12:30 No
Tuesday, August 16, 2005 14:00
Meeting Room
Room 12 30 Mobile OH 17:30 No
Wednesday, August 17, 2005 9:00
Meeting Room
Room 12 30 Mobile OH 12:30 No
Wednesday, August 17, 2005 14:00
Meeting Room
Room 12 30 Mobile OH 17:30 No
Thursday, August 18, 2005 9:00
Meeting Room
Room 12 30 Mobile OH 12:30 No
Thursday, August 18, 2005 14:00