IUPAC POLYMER DIVISION MEETING
MINUTES

RIO DE JANEIRO, BRAZIL
15./16.07.2006

Berek, Dusan, (Slovakia), **Chang**, Taihyun, (Korea), **Chen**, Kann-Nan, (Taiwan), **De Souza-Gomez**, Ailton, (Brazil), **Fradet**, Alain (France), **He**, Jiasong (China), **Hess**, Michael (Germany), **Hodge**, Philip (UK), **Jin**, Jung-Il (Korea, President), **Jones**, Richard G. (UK), **Kim**, Sung-Chul (Korea), **Kitayama**, Tatsuki (Japan), **Kratochvil**, Pavel (Czech Republic), **Lovell**, Peter (UK), **Mormann**, Werner (Germany), **Mueller**, Alejandro (Venezuela-Observer), **Ober**, Christopher (USA, Vice-President), **Sanderson**, Ron (South Africa), **Sawamoto**, Mitsuo (Japan), **Smith**, Dennis (USA-Observer), **Steijskal**, Jaroslav (Czech Republic), **Stepto**, Bob (UK, Former President), **Tabak**, David (Brazil), **Vairon**, Jean-Pierre (France), **Vert**, Michel (France), **Vohlidal**, Jiri (Czech Republic).

1. **President's Introductory Remarks and Finalisation of the Agenda**
   1.1 There were no additions to the Agenda and Prof. Jin welcomed everyone to Rio. For the Agenda see APPENDIX 1.

2. **Apologies for Absence**
   2.1 Prof. Jin reported that Prof. Pasch, Prof. Penczek and Prof. Kubisa would not be able to come, Prof. Buback and Dr. Work had intended to come but were hindered at the very last moment. Prof. Hess volunteered to take care of the minutes.

3. **Approval of the Minutes of the Division Committee Meeting, Beijing, August 2005**
   3.1 The minutes were approved without any change. Apologies of Dr. Work for the delay were accepted.

4. **Matters arising**
   4.1 Prof. Jin reported that the present Vice-President of IUPAC, Prof. Matsumoto-Japan – had resigned for personal reasons. There will be the election of the IUPAC President and the Vice-President on the next General Assembly in Torino, 2007.
   4.2 The discussions to improve the efficiency of the IUPAC bodies still continue and a task group has been implemented to develop new strategies. Presently, there are no results.
   4.3 The 2005 volume of the IUPAC Handbook was the last one issued in printed form. In future there will be only on-line versions. This news was not welcomed by the Division Committee and it was suggested to protest against this decision. Also, the question of the up-dating process was raised but had to be left unanswered at the present time.

5. **Report on Terminology and Nomenclature Projects** (**Jones**/Hess)
   Prof. Jones reported that after a corresponding message by John Jost the name of the Subcommittee on Polymer Terminology and Nomenclature (SPTN) had to be changed since all activities concerning nomenclature are in the first place covered by Div. VIII. It now reads Subcommittee on Polymer Terminology (SPT).
   SPT is currently working on 16 projects, 5 of which are interdivisional projects. Since the Beijing 2005-Meeting significant progress was made. At the present time there is one project close to finalization, another one is being discussed by the ICTNS and open to public review, a third one is being submitted. There are 3 new projects that

have been accepted during the last year and 3 new project proposals will be submitted in the near future. One application is presently being reviewed.
Prof. Sawamoto addressed the well-known problem of the use of IUPAC-based terminology since these only have the character of recommendations and its use in publications depends strongly on individual journals. He recommended finding contact persons in major chemical organizations, such as for example the American Chemical Society, to enforce the impact of our recommendations on publications and make them more popular. Prof. Ober will use his contact with ACS and all members of the Division are asked for corresponding actions in their region.

6. Report on Structure-Properties Projects (**Bailey/Kim**)

The subcommittee continues to operate from 2 geographical centres of gravity: Eastern hemisphere (Sung-Chul Kim, Korea) and Western hemisphere (Rob S. Bailey, UK).
The Working Party currently has 67 members from 14 countries: 34 scientists from industry, 33 from academia / research institutions.
The subcommittee website is developing in such a way as to allow each member to have the ability to maintain and update the content that is relevant to their own interests.
Projects and publications
There are currently 7 full projects with over 6 feasibility studies. A pool of new projects is under consideration. There have been 4 papers published with 5 more being submitted or in manuscript form.
There are two types of annual meetings in the two geographical areas: Subcommittee Meetings and Scientific Meetings, these were during the last 12 months:

Research Meeting	October 10, 2006	Busan, Korea
Subcommittee Meeting	January 23/25, 2006	Leverkusen, Germany
Research Meeting	August 12, 2005	Beijing, China
Subcommittee Meeting	February 21/23, 2005	Zurich, Switzerland

The next one is planned:

Subcommittee Meeting	May 9/11, 2007	Budapest, Hungary

The great number of industrial participants is worth mentioning. One of the difficulties encountered during working on the projects is that it is sometimes difficult to get samples or information about commodity polymers.

7. Report on Molecular Characterizations Projects (**Chang**/Pasch)

There are currently 4 active projects, namely:

- 2003-023-2-400
  Data treatment in size exclusion chromatography of polymers
  Task group chair: Gregorio Meira
  Planned end date: Jan 1, 2007
- 2005-009-3-400
  Efficiency and reproducibility of temperature rising elution fractionation (TREF)
  Task group chair: Robert Brüll
  Planned end date: Jul 1, 2008
- 2005-011-3-400

Repeatability and reproducibility of sample preparation and analysis in high-temperature SEC
Task group chair: Valerie Grumel
Planned end date: Dec 31, 2008

- 2005-021-3-400
  Accuracy and reproducibility of functionality type analysis of poly(ethylene oxide) homo and copolymers by LCCC
  Task group chair: Frank Rittig
  Planned end date: Dec 31, 2007

There are several new projects being considered, such as:

- Mass spectrometry analysis on synthetic polymers
- Repeatability in interaction chromatography
- Analysis of polymer molecular weight and composition analysis

Prof. Sanderson addressed the chromatography of water-soluble and partially soluble polymers as an area that demands particular attention.
Prof. Stepto asked if this is now the new Subcommittee formed at the Beijing meeting. The answer was yes and it was stressed that many people from industry are actively participating in the projects of the Subcommittee.

8. **Report on Polymerization Projects** (**Buback**/Hutchinson/Russell/Beuermann, presented by Ober)
   This Subcommittee, guided by people with industrial experience, studies modelling of polymer kinetics and processes. There are 32 (2 from industry) participants from 11 countries working on problems important for the polymer community. The number of reports and the quantity of citation might serve as an indicator of the importance of the projects of this Subcommittee that are extremely relevant for industry.
   There was 1 publication in the year 2005, in 2006 there is one in press (***Mechanism and Kinetics of Dithiobenzoate-Mediated RAFT Polymerization, 1: The Current Situation***) and a second one (***Critically evaluated rate coefficients for free-radical polymerization 6:Propagation rate coefficient of methacrylic acid in aqueous solution***) is presently in the reviewing process.
   New project ideas are:
   - Critically evaluated rate coefficients for ionic polymerizations
   - Survey of reliable initiator decomposition and initiator efficiency data
   - Critically evaluated chain-transfer rate coefficients and chain-transfer constants
   - Termination rate coefficients for radical polymerization in aqueous solution

9. **Developing Polymer Systems** (**Ober**/Stejskal/Work)
   This Subcommittee was formed in Beijing 2005 and comprises 33 members (2 from industry) from 14 countries. The scope of this Subcommittee is to focus on new or developing areas in polymers with a goal of cultivating projects at the forefront of scientific and technological developments in polymer science and technology. The mission is to stimulate projects for the Polymer division in new areas. Projects can include terminology, experimental collaborative projects and educational projects. Projects can be either for the sub-committee or when more appropriate, directed to another sub-committee.
   - Definitions of Terms Relevant to Biorelated Polymer Science and Applications
     → Project of the Subcommittee on Polymer Terminology
   - Terminology for Self-assembly and Aggregation of Polymers
     → Project of the Subcommittee on Polymer Terminology

Submitted proposal:

- Terminology for conducting, electroactive and field-responsive polymers (Ober, Vohlidal)
- Infrared spectroscopy of conducting polymer nanotubes (Trchova, Stejskal)

Feasibility studies:

- Polymer nanopatterning (Ober)
- Preparation and structure/properties relation in stimuli responsive composites and nanocomposites (Costa, Ciardelli)

The Subcommittee will observe the developments in new polymers, either by fostering new projects for this sub-committee or suggesting formation of new working committees. So, it seems to be likely that in future the foundation of a Subcommittee dealing with the bio-related aspect of polymer science will be advised.
Prof. Sawamoto raised the question as to how far it will be possible to cover terminology and structural properties under one Subcommittee. Prof. Ober observed that there are rather no boundaries concerning any type of cooperation with other groups. The Subcommittee on Developing Polymers Systems is supposed to act as a catalyst in the truest sense. Prof. Sawamoto saw discrepancies among the different Divisions (=areas in Chemistry) and expressed his opinion that IUPAC can play an important role in decreasing the friction between the different areas.
Prof. Kim asked about the (field) responsive materials concerning the type of materials. The answer was that at the present time the focus shall be on all kinds of polymeric materials showing response to electrical field stimulations but that not only terminology but characterization of these materials and effects shall be considered. For example, there is also the project of Trchova & Steijskal concerning the infrared-spectroscopic characterization of conducting nanotubes–polyaniline composites where spectra of the materials shall be collected and consistent interpretations of the effects have to be elaborated. It was suggested to consider Prof. McDiarmid or someone with equal expertise as a consultant.
It was noted that at last year's meeting (GA Beijing) that two proposals concerning nanofabrication (nano-structured hybrid coatings and screening properties of nano/micro mixing) had been presented. The projects would focus on the materials aspects of polymers. A Materials Subcommittee already exists in IUPAC and it was suggested that the Polymer Division should consider greater involvement in that Subcommittee by sharing our initiatives with them. It was also suggested in Beijing that both nanofabrication and biomimetics could be part of a joint program. No progress was reported.

10. Reports on Educational Projects (Vairon, Sanderson, Ober)

The list of members has been identified and presently consists of the following persons:

List of members - 2006

Kan-Nan CHEN,	Taiwan	knchen@mail.tku.edu.tw
Giovanna COSTA	Italy	costa@ge.ismac.cnr.it
Gérard FROYER	France	Gerard.Froyer@cnrs-imn.fr
Michael HESS	Germany	michael.hess@uni-duisburg-essen.de

Jung-Il JIN	Korea	jijin@korea.ac.kr	
Richard JONES	UK	dick@rgjones.freeserve.co.uk	
Pavel KRATOCHVIL	Czech Rep.	krat@imc.cas.cz	
Tatsuki KITAYAMA	Japan	kitayama@chem.es.osaka-u.ac.jp	
Werner MORMANN	Germany	mormann@chemie.uni-siegen.de	
Maria NOWAKOWSKA	Poland		
Chris OBER	USA	cober@ccmr.cornell.edu	
Greg RUSSELL	New Zealand	greg.russell@canterbury.ac.nz	
Ron SANDERSON	South-Afr.	rds@sun.ac.za	
Ailton de SOUZA GOMES	Brazil	asgomes@ima.ufrj.br	
San THANG	Australia		
Jean-Pierre VAIRON	France	vairon@ccr.jussieu.fr	*Chair*
Jiri VOHLIDAL	Czech Rep.	vohlidal@natur.cuni.cz	
Dhanjay JHURRY	Mauritius	djhurry@uom.ac.mu	

CCE Representatives :

Peter MAHAFFY	Canada	peter.mahaffy@kingsu.ca	*Current CCE Chair*
Choon DO	Korea	choondo@sunchon.ac.kr	

The following working areas are defined and active:

Workpackage 1 (**WP1**) ***Educational Courses, Workshops and Conferences***

10th UNESCO/IUPAC Postgraduate Course in Polymer Science

Task Group Leader: ***P. Kratochvíl***

The post-graduate course in polymer science for young scientists from economically disadvantaged regions was again very successfully with numerous participants from developing countries. They receive intensive training (50 hrs) in modern polymer science using up-to-date equipment that is not available in their home laboratories. The course also contains work on research projects supervised by experienced scientists and has proven to be of great importance for the further career of the participants, in particular in graduation (PhD). In many cases co-operation continued in joined projects. Since the start of this sequence of courses 10 runs have been completed with 80 graduates from 11 countries. The success was manifested by many publications (89 in well-reputed journals, *e.g.* Macromolecules, since the first course) and goes far beyond just education. The project was officially awarded by the Samsung Fund at the GA 2005 in Beijing.

9th Annual UNESCO School/IUPAC Conference on Polymer Properties

Task Group Leader ***: R. Sanderson***

The UNESCO School took place on two days of the weekend before the conference and enjoyed different courses given by distinguished specialists in their very field of expertise. The course was accepted by 75 students from 19 African Countries and in particular from

the nearer regions. This condensed course has proved again to be of significant value for the students of the region who usually do not have the chance to go to conferences away from their area in disadvantaged regions.

2006 -14th Short Course in Polymer Characterization (POLYCHAR)

*Task Group Leader **: M. Matsuo/M. Hess***

The Short Course took place on April 16th the day before the Conference (17.-21.04.) held at Women's University in Nara, Japan. Again it turned out to be a great advantage to benefit from the presence of distinguished specialists on behalf of the following conference. There were six different lectures (Tribology, Dynamic-mechanical properties, Dielectric Properties, Liquid Chromatography, Electron Microscopy, and Scattering Techniques) attended mostly by Japanese students (about 30 participants) new in the field of polymer science. Due to IPAC support participation was free for students. A booklet with the text of the lectures (not just a copy of the transparencies) was free for students, and the lecturers were available for the students during the entire POLYCHAR 14 Conference.

During the conference the IUPAC Poster Award was presented to two Japanese and one British student who had been selected by an international jury. A detailed report about the conference will be published in Chemistry International.

WP2 : *Design of Polymer Education Material for French Speaking Countries*

Project in conj. with CCE *Task Group Leader: **G. Froyer***

Establishment of an on-line communication network for French-speaking countries (focus on African countries) is desired.

WP3 : *Elaboration of an IUPAC sponsored CD on Polymer Education*

(based on R. Stein's data base) *Task Group Leader: **C. Ober***

It was agreed in Beijing to use Dick Stein's CD provided by the National Plastics Institute as basis material and to convert in particular the videos of polymer materials and their processing to an IUPAC Division IV Educational web site. Prof. Ober showed the new site. Handling the site is very simple. Updating the content is more difficult. The present status is that the content of the CD is locked in a Macromedia Director file. There is a significant amount of editorial work to be done since parts of the content appear to be oversimplified. However, this is presently not possible. Any changes require transcription of content to a new file format while videos can be reused. The video sequences are separately available. The CD contains packages for both Mac and PC. Next steps have to be to develop links to other sites so that interest in the Polymer Division web site is enhanced and the hit-rate of searching engines rises ("google-up"). The goal is that the IUPAC Division IV Education web site becomes the principle address for polymer education. The web site will for the moment be maintained by Cornell University.

WP4 : *Implementation of a Division IV - Polymer Education Web Site*

Task Group Leader: C. Ober

See above

WP5 : *Polymer Teaching video clips data base*

Preparation of a project envisaged *Task Group Leader**: W. Mormann***

The idea is to compile a video clip data base easy to handle for free education in Polymer Engineering and Science, liable to pay costs, however, for other users. The data base might

be hosted by the Cornell University. The present main problem is to find which video material is available, however, it is assumed that there should be many material available in the web and in industrial advertisements or application material that might be granted for the purpose of this data base. Detail-problems of down-load and handle a collection of videos have to be solved. The project shows good progress.

WP6: ***«Boosting the Polymer Education in Africa»***

Preparation of a project envisaged *Task Group Leader**: R. Sanderson***

There are now groups in Polymer Science in Morocco, Libya, Egypt, Ethiopia, Kenya, and Zimbabwe cooperating with South Africa in the exchange of staff and students. He UNESCO Centre at Stellenbosch, South Africa, houses presently 44 African students from Libya, Zimbabwe, Zambia, Uganda, Namibia, Lesotho, Eritrea and Gabon out of 89 post graduate students in Polymer Science. Three of these countries have bilateral educational agreements (often arranged by UNESCO).

Funds could be raised from several governmental and non-governmental organizations such as the Third World Academy, FORD Foundation, Welcome Trust, Kellogg Foundation, Common Wealth Fund, Government Ministers of Science and Technology (South Africa), Science Foundations and Councils.

Jaco de Kock, MSc Polymer Education (UNESCO Centre) is in charge of the new Polymer Science Introduction into the Grade 12 curriculum for schools in the Western Cape Province of South Africa.

The new national curricula for Physical Sciences began implementation Grade 10 in 2006, Grade 11 in 2007 and Grade 12 in 2008. These are start dates. In 2008, course in Plastics are part of Physical Science Program in Grade 12 with 18 to 20 hours (3 week program) of course instruction and practica. Course notes are made available in English and Afrikaans, teachers notes also provided as well as a practical kit. This evaluation based outcome course has to be chosen as one of 6 out of 8 choices. This course starts at 351 schools in the Western Cape in all 7 regions and all teachers have already been introduced during the June/July recess period to the course syllabus and structure. It grew out of a specialized course in polymers presented by De Kock to more than 14 schools per year and was received with great enthusiasm. This program is going online web based for general access as part of the entire course that will eventually go the same way.

We already have an outline as we have a University Third Year as well as a University Fourth Year Course available at our University on WEBCT for internal use forming the basis of a Textbook where we are asking the world's experts to help organize certain chapters. Presently this is a UNESCO effort which may become an IUPAC project.

A PowerPoint based course material on a private basis has already been supplied to three African Universities and have been successful in creating a course and practical kit for schools which will now be modified to fit the official government school curriculum for physical science.

A start has been made on a web based textbook of Polymer Science in PDF format bringing the newest teaching material to anyone interested in using the course notes and (teacher version) transparencies to set up polymer courses

Course Material for Universities and Physical Science Schools in South Africa, Uganda, Gold Coast and Botswana is provided.

Prof. Sanderson gave further detailed information about the UNESCO activities and Centres.

WP7: ***Investigation/Balance of the Teaching Materials available for Polymer Education in Asia/Pacific, Europe, America(s) areas.***

Preparation of a project envisaged

Task Group Leaders: ***2*** *for Asia/Pacif.* ***2*** *for Europe* ***2*** *for America(s)*
Suggestions: G. Russell(NZ) G. Froyer (F) C. Ober (USA)
N. N. W. Mormann (D) N. N.

WP8: ***Implementation of the* "Samsung Young Polymer Scientist Award"** ***and of the* "Samsung subsidiaries for Students"*, *at the IUPAC Macro 2006 Congress – Rio de Janeiro***

Task Group Leader: ***Ailton Gomes***

Prof. Vairon suggested changing the name of the Subcommittee on Educational Projects to "Div IV Sub-committee for International Cooperation in Polymer Education and Research ". Prof. Stepto acknowledged the good representation of structure and projects of the new Subcommittee. The new name was discussed and accepted without dissenting vote acknowledging the importance of the support of international cooperation and courses. The decision about a new name, however, was left to the meeting of the Subcommittee later this week. Prof. Ober observed that there are ACS-sessions on international cooperations and the same is planned at the biennial MACRO for which IUPAC acknowledgement is very important.

11. New Project Areas (Sawamoto)

The following new project areas were identified:

- Safety and Risk
- Nano-particulate Materials

12. Monitoring of Projects (Jin)

Prof. Jin stated that the number of projects that have been put forward since the last Division meeting impressively displays the activity of the Polymer Division. He stressed that status reports on a regular basis (formalized in the since recently practised way) have proven to be effective tools for monitoring and hence driving projects more efficiently.

13. Reports on Division- sponsored Conferences (Penczek, Kubisa)

Since Profs. Penczek and Kubisa were unable to attend the meeting, their report was presented by Prof. Ober. A list of the recent conferences is provided as APPENDIX 2.

Prof. Kan-Nan Chen reported about the progress of the preparations for MACRO 2008, Taipeh (Taiwan), 29.06.-04.07.2008. Organization and progress are impressive and were acknowledged by the Division members. The next circular will be ready by the GA in Torino. It was suggested that the list of plenary speakers should be revised in close contact with the Scientific Committee and Division IV. It was suggested that a significant number of foreign co-chairs of the sessions should be considered. For information the website: http://www.pst.org.tw/macro2008 can be consulted.

Prof. Lovell, representing the Macro Group UK as its chairman, gave an update of the progress of the preparations for MACRO 2010 in Glasgow (11.07-16.07), just one year after the next but one GA that is supposed to take place at the same venue.

A tentative proposal for the MACRO 2012 Conference is as follows:

- Tentative Conference Timing: mid-June 2012
- Location: Washington, DC area (Alexandria, VA or Annapolis, MD)
- Estimated Attendance: 1800 approximately
- Administrative Support: ACS Division of Polymer Chemistry (POLY) and Polymeric Materials Science and Engineering (PMSE) Business Offices

- Co-organizers: Virginia Tech Macromolecules and Interfaces Institute (MII)
- Lead contact: Prof. Tim Long, Virginia Tech

14. Recruitment of New Members

The recruitment of new members, in particular from industry remains a continuing demand. The new members Claudio dos Santos, Brazil (Terminology) and Zi-Chen Li, (China, NR), Valdo Meille, Italy (Terminology) and Dhanjay Jhurry, Mauritius (Education) were welcome. Prof. Ober believes that it is important to increase the number of members from industry. Increasing the number of publishers interested in the Division's activities will also be important, see also item 19. In contrast to the Division there is no limit for the number of members in Subcommittees.

15. Report on Division Web Page and Electronic Publications (**Jones**, Work)

Prof. Jones asked to the audience to check the Division's website for correctness and asked for proposals concerning up-dates, modifications, and links to be incorporated, *etc.*. In particular Prof. Jones asked for the complete data of the chairpersons of the Subcommittee Characterization and to provide him with the complete list of publications of the Division, also when they have been output of joined projects. A draft of the minutes of this Division meeting will be published on the Division's website as soon as possible.

16. Strategy, Communication, Polymer Summit (Horie, **Sawamoto**, **Ober**)

Prof. Sawamoto addressed the following activities:

- Strategic Polymer Conferences-Polymer Summit: there was the first in Kyoto, 2002, the next one will be in 2007 held in New York, see below and also APPENDIX 2.
- Collaboration in Polymer Science and Technology: 232rd ACS-Meeting, San Francisco, September 2006, which is a ACS Presidential Symposium
- The compilation of the World Polymer Societies. The directory was up-dated and comprises now about 40 Societies worldwide.

Further activities to be discussed at the next regular meeting are a symposium workshop, "hot topics", and miscellaneous such as development of the intra – and interdivisional strategy and international cooperation, the position of chemistry and physics *vs.* materials and functions, improvement of the communication with the society to improve the general understanding of the role of Chemistry in the society and its contribution to human life such as education, environment, health, materials, quality of life *etc.* A report on the corresponding project 2002-057-1-400 also covering future aspects will be provided after the project is now finished. It was stated that closer bonds between IUPAC and national organisations are desired, and that a starting point could be the setting of links on the IUPAC website and correspondingly on the websites of the national organisations.

The first Strategic Conference, held in 2002 in Kyoto Japan, entitled "Mission and Challenges of Polymer Science and Technology" is to be followed by the second Strategic Conference is entitled: "Macromolecules for Sustainable, Safe and Healthy World" to be held at the Mariott Hotel Brooklyn, New York, 10.06.-14.06. 2007. The Scientific organization is headed by Kalle Levon (Chairman) with his Co-Chairman Christopher Ober. The program summarizes under the main topics: **Health and National Security** (2 parallel Sessions: *Polymeric drugs, polyvalency, drug delivery systems, responsive gels, macromolecular functional surfaces, self assembly, scaffolds* and *Biosensors and Sensor Networks*), **Sustainable Energy and Environment** (***Macromolecular impact on energy consumption and production with parallel environmental performance: Fuel cell, Solar energy***), **Industrial Design, Manufacturing and Applications** (*Future design concepts,*

manufacturing improvements and potential applications). The ACS Polymer Division is expected to help with meeting organization.

17. Budget, Projects and Division Structure (**Jin, Ober**)

The current projects (by June 2006) are listed in APPENDIX 3. in the last biennium it was possible to increase the budget by approximately USD 5,000. Usually at least 60% of a biannual budget of the Division went into projects. Division VIII handles all nomenclature projects and supports our corresponding projects, see APPENDIX 4. The Division Reserve Money is no longer freely available for the Division. It goes to a general Strategic Reserve Budget so that in the future it will be more difficult for the Division to get project money from the reserve.

The general biennial budget situation is summarized in APPENDIX 5. The Division Reserve can only be touched after the whole Division's budget has been spent. The strategic budget comprises of money that has not been spent within the period it had been assigned to.

18. Division Elections 2007 (**Jin**)

There are currently 10 Division TMs and 6 Division AMs. According to the boundary conditions of the Bureau there are only 10 NRs. A detailed list of the Division Officers and their service time is given with APPENDIX 6. The service time of some of the members expires by the end of 2007 so that a few new elections are required at the GA in Torino next August. An external election committee has to be formed.

19. Vice- President's Topics (**Ober**)

Prof. Ober wants to improve connections with the scientific community and in particular with industry. Therefore, he is eager to

- grow participation by scientists interested in:
  - Polymer education
  - Industrial scientists
- strengthen education since there is potential for the division to influence the growth of polymer science in developing countries.
- increase industrial participation since polymer industry is changing rapidly and industrial participation in division will be very critical

He intends to use his good connections in the US to improve the division's internet presence and both PMSE and POLY have already agreed informally to post IUPAC Polymer Division meeting links.

In addition, he has communicated that members of the ACS Polymer Division are interested in hosting the World Polymer Conference 2012. He also plans to work with the PMSE Division of the ACS and other polymer related organizations, see also item 13.

20. Any Other Business

20.1 Prof. Jin reported about a request from DSM Innovation Centre that proposes a DSM performance to be held as a special Symposium (proposed name DSM Performance Materials Award) within the IUPAC MACRO WORLD POLYMER CONGRESS and donate a grant of $ 50,000 for this. It should honour excellence in research of high performance materials. Discussion of this item revealed the opinion that:

- Any award granted during such a special symposium should bear "IUPAC" as part of its name (*e.g.*: DSM-IUPAC Award(s) for…).
- The Division should be involved in structure and decisions about the award.
- The application cannot be established for the MACRO 2006.
- The Division should be involved in the organization of this special symposium.

- There needs to be a clear agreement about the distribution and use of the grant mentioned above and all general modalities of the grant.

There was a generally positive response from the audience. It was, however, in particular stressed that the Division needs to be involved in the organization and that the name IUPAC has to appear in the context of the symposium and the award. A meeting of the Division President with Jos Put, a DSM representative at the MACRO 2006 in Rio was envisaged for further discussion of the subject.

20.2 Since parallel with the next General Assembly (GA), see item 21, there will be a Symposium entitled "Chemistry as a Safeguard of Environment, Cultural Heritage, and Health" held in Torino 05.08.-11.08.2007 it was suggested that the links of the Division and the Conference should be strengthened, probably by organising a satellite meeting. Giovanni Camino and Giuseppe de la Gatta (see below) were mentioned as local organizers to be contacted. It was proposed that the Division should contribute in fields like recycling, biomedical and fire retardant materials.

- Prof. Jin will serve as Co-Chairman of the Polymer session
- Contact is with Prof. Giovanni CAMINO, member of the local advising Scientific Committee for Polymer Materials
- Symposia are envisaged in line with the themes of the Conference:
  - Chemistry as a Safeguard for the Environment
  - Cultural Heritage
  - Health
- Topics may include, for example, Recycling, Biomedical Polymers, Fire Retardant Polymers.
- Discussions of a satellite meeting are being held (Prof. Giuseppe Della Gatta tel +39 011 670 7571)

  Input from the Subcommittees is very welcome.

20.3 There were strong arguments against the Bureau's rule of maximal ten NRs. There was the general view that there should be no limitation for the number of NRs of a Division. Each Division should be free to accept a NR from an adhering National organization as long as there is no corresponding TM or AM in the Division. It was unanimously proposed to go for a resolution during the Bureau meeting in October 2006 to cancel this limiting condition.

20.4 Prof. Vairon observed that a strategic subcommittee should bundle <u>all</u> strategic activities. Prof. Stepto saw problems in a practical approach to this since the strategic approaches in the individual areas are too different.

20.5 Prof. Berek mentioned that meeting information (Subcommittees, Division) should be announced well in advance.

20.6 Prof. Tabak proposed to put information about current activities on the web with frequent up-dates. He mentioned the Organic Division with news letters on a regular basis. The Subcommittee for Polymer Terminology already publishes annually a report in e-polymers.

21. Date of Next Meeting

While the next General Assembly is scheduled for 2007, August 04.-12., and the parallel Conference for August 05.-11., the Division meeting is scheduled for Saturday, August 03. and Sunday, August 04.

The GA 2009 will be held in Glasgow, UK

M.H., 12 September 2006

APPENDIX 1

Agenda
IUPAC POLYMER DIVISION MEETING
Royalty Hotel, Rio de Janeiro, Brazil
9.00- 12.30 & 14.00- 17.30, 15 & 16 July 2006

1. President's Introductory Remarks and Finalization of the Agenda
2. Apologies for Absence
3. Approval of the Minutes of the Division Committee Meeting, Beijing, August 2005
4. Matters arising
5. Report on Terminology and Nomenclature Projects (Jones, Hess)
6. Report on Structure- Property Projects (Bailey, Kim)
7. Report on Molecular Characterization Projects (Pasch and Chang)
8. Report on Polymerization Projects (Buback)
9. Reports on Developing Polymer Materials Systems (Ober, Vohlidal, Work)
10. Reports on Education Projects and Activities (Vairon, Sanderson, Ober)
11. New Project Areas
12. Monitoring of Projects (Jin)
13. Reports on Division- sponsored Conferences (Penczek, Kubisa), Rio (Ailton de Souza Gomes) and forthcoming World Polymer Congress (Taiwan; U.K.;…..)
14. Recruitment to the Division
15. Report on Division Web Page and Electronic Publications (Jones, Work)
16. Strategy, Communication, Polymer Summit (Horie, Sawamoto, Ober)
17. Budget, Projects and Division Structure (Jin, Ober)
18. Division Elections 2005 (Jin)
19. Vice- President's Topics (Ober)
20. Any Other Business
21. Date of Next Meeting

APPENDIX 2, IUPAC-SPONSORED CONFERENCES 2005/2006 (since Beijing)

July 26-29	Fukuoka, Japan	8th SPSJ International Polymer Conference (IPC 2005)	**M. Sawamoto**
Sept. 13-16	Budapest, Hungary	8th International Symposium: Polymers for Advanced Technology	**G. Marosi**
Sept. 18-22	Tirrenia, Italy	11th International Symposium on Macromolecule-Metal Complexes	**F. Ciardelli**
Oct. 17-20	Shanghai, China	15th International Symposium on Fine Chemistry and Functional Polymers (FCFP-XV)	**Y. Wu**
Oct. 23-28	Goa, India	International Symposium on Ionic Polymerisations and Related Processes	**S. Sivaram**

15-16, July, 2006, Rio

2006			
April 17-21	Nara City, Japan	14th World Forum on Advanced Materials (POLYCHAR-14)	**M. Matsuo**
May 28 - June 1	Tokyo, Japan	3rd International Symposium on Macro- and Supramolecular Architectures and Materials (MAM-06)	**K. Geckeler, H. Nishide**
July 2-7	Okazaki, Japan	12 International Conference on Polymers and Organic Chemistry (POC'06).	**Y. Uozumi, S. Itsuno**
July 9-13	Prague, Czech Rep.	Structure and Dynamics of Self-organized Macromolecular Systems	**P. Stepanek**
July 16-21	Rio de Janeiro, Brazil	World Polymer Congress MACRO 2006 41st Int. Symposium on Macromolecules	**A. de Souza Gomes**
Sept. 3-7	Sheffield, UK	Polymer Networks 2006	**J. L. Stanford**
Oct. 11-12	Busan, Korea	Advanced Polymers for Emerging Technologies	**S.C. Kim**
Nov. 20-23	Stellenbosch, South Africa	9th Annual UNESCO/IUPAC Conference on Macromolecules: Polymers for Advanced Applications	**R. D. Sanderson**

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PLANNED IN THE FOLLOWING YEARS

2007			
June 17-22	New York City, USA	IUPAC Polymer Conference on the Mission and Challenges of Polymer Science and Technology II	**K. Levon, C. K. Ober**
July 8-12	Krakow, Poland	International Conference on Frontiers of Polymers and Advanced Materials	**K. Pielichowski**
Sept. 2-7	Bayreuth, Germany	International Symposium on Ionic Polymerisation	**Axel Müller**
Oct. 21-25	Shanghai, China	International Symposium on Novel materials and their Synthesis (NMS-III)	**Yuping Wu**
2008	Taipei, Taiwan	World Polymer Congress MACRO 2008: 42nd IUPAC Int. Symposium on Macromolecules	
2010	UK	World Polymer Congress MACRO 2010: 43rd IUPAC Int. Symposium on Macromolecules	

APPENDIX 3 Division Projects and Budget by June 2006

Title	Project Number	Task Grp. Chairman	Budget	Actual	Over/ (Under) Budget	% of Budget	Planned End Date
Samsung Fund Income			7,000	10,036	(3,036)	70	
Wiley Royalties				995	(995)		
Recommendations for data presentation and storage applicable to mechanical and rheological measurements of polymers	2003-009-1-400	**Wassner**	3,000	?	(3,000)	0%	1-Apr-2006
Definitions of terms relating to crystalline polymers - revision of IUPAC Recommendations 1988	2003-019-2-400	**Allegra**	5,000	1,035	(3,965)	21%	30-Sep-2008
Data treatment in size exclusion chromatography of polymers	2003-023-2-400	**Meria**	3,500	2,660	(840)	76%	1-Jan-2007
Structure and properties of linear and crosslinked structural PVC foams	2003-038-4-400	**Alstaedt**	3,000	?	(3,000)	0%	1-Jul-2008
Postgraduate course in polymer science	2003-041-1-400	**Kratochvil**		5,000	5,000	?	1-Dec-2005
Structure and properties of polymer/clay nano-composite materials	2003-051-1-400	**Kim**	6,000	2,418	(3,582)	40%	31-Dec-2006
Terminology on separation of macromolecules	2003-060-2-400	**Chang**	6,500	4,210	(2,290)	65%	31-Dec-2007

Title	Project Number	Task Grp. Chairman	Budget	Actual	Over/ (Under) Budget	% of Budget	Planned End Date
Guideline for rheological characterization of polyamide melts	2004-009-1-400	**Dijkstra**	3,000	?	(3,000)	0%	30-Apr-2007
Terminology and measurement techniques of starch components	2004-022-3-400	**Fitzgerald**	7,000	?	(7,000)	0%	30-Apr-2007
Critically evaluated propagation rate coefficients for free-radical polymerization of water-soluble monomers polymerized in the aqueous phase	2004-034-1-400	**Lacik**	3,000	2,500	(500)	83%	1-Dec-2007
Design of polymer education material for French speaking countries	2004-037-1-400	**Froyer**	5,000	?	(5,000)	0%	31-Mar-2008
Towards a holistic mechanistic model for reversible addition fragmentation chain transfer (RAFT) polymerizations:Dithiobenz-oates as mediating agents	2004-040-1-400	**Vana**	3,500	2,000	(1,500)	57%	1-Sep-2007
Terminology for biomedical (therapeutic) polymers	2004-043-1-400	**Vert**	4,000	2,130	(1,870)	53%	1-Mar-2007

Title	Project Number	Task Grp. Chairman	Budget	Actual	Over/ (Under) Budget	% of Budget	Planned End Date
Microstructure and properties of thermotropic liquid crystalline polymer blends and composites	2004-044-2-400	**He**	6,000	?	(6,000)	0%	1-Nov-2008
Definitions of terms relating to individual macromolecules, their assemblies, and dilute polymer solutions	2005-005-2-400	**Chang**	6,000	2,045	(3,955)	34%	31-Dec-2008
Guide to macromolecular terminology and nomenclature	2005-007-1-400	**Wilks**	?	?	?	0%	31-Dec-2005
Efficiency and reproducibility of temperature rising elution fractionation (TREF)	2005-009-3-400	**Brüll**	4,000	?	(4,000)	0%	1-Jul-2008
Repeatability and reproducibility of sample preparation and analysis in high-temperature SEC	2005-011-3-400	**Grumel**	5,000	?	(5,000)	0%	31-Dec-2008

Title	Project Number	Task Grp. Chairman	Budget	Actual	Over/ (Under) Budget	% of Budget	Planned End Date
Accuracy and reproducibility of functionality type analysis of Poly (ethylene oxide) homo and copolymers by LC-CC	2005- 021-3-400	**Ritting**	5,000	?	(5,000)	0%	31-Dec-2007
Micro-Structural, melt processing and mechanical properties of compatibilised PA 6/ABS blends	2005-023-2-400	**Steininger**	3,000	?	(3,000)	0%	31-Dec-2008
Terminology for self-assembly and aggregation of polymers	2005-043-2-400	**Ober and Jones**	6,000	?	(6,000)	0%	1-Apr-2009
Extension of 2002-006-2-400	2006-002-1-400	**Jenkins and Moad**	4,000	?	(4,000)	0%	31-Dec-2007
Short Course in Polymer Characterization associated with POLYCHAR-14	2006-003-1-400	**Matsuo**	4,000	?	(4,000)	0%	30-Jun-2006

Title	Project Number	Task Grp. Chairman	Budget	Actual	Over/ (Under) Budget	% of Budget	Planned End Date
Recommendations on the abbreviated terms of polymers	2006-004-1-400	**He**	6,000	?	(6,000)	0%	1-May-2009
Extension of 2002-014-1-400- Glossary of class names of polymers based on their chemical structure and molecular architecture	2006-005-1-400	**Vohlidal**	1,200	?	(1,200)	0%	30-Jun-2007
Extension of 1999-051-1-800 nomenclature for chemically modified polymers	2006-006-1-400	**Kitayama**	4,500	?	(4,500)	0%	30-Jun-2009
Extension of 2003-019-2-400- Definitions of terms relating to crystalline polymers revision of IUPAC Recommendations 1988	2006-007-1-400	**Allegra**	2,000	?	(2,000)	0%	30-Sep-2008

APPENDIX 4

Projects in Cooperation with Division VIII

Project Number	Task Group Chairman	Budget actual	Budget	Over/ (Under) Budget	%of budget	Planned End Date
1999-051-1-800	Wilks	7,470	12,000	(4,530)	62%	30-Jun-2009
2000-037-1-800	Wilks	6,030	6,000	30	101%	31-Dec-2004
2001-081-1-800	Kahovec	4,045	4,000	45	101%	31-Dec-2002
2001-082-1-800	Mormann	10,000	10,000	-	100%	31-Dec-2006
2003-042-1-800	Kitayama	1,144	6,300	(5,156)	18%	1-Dec-2006

APPENDIX 5

DIVISION BUDGET (biennial)

items	**USD**	**comments**
Basic Division Budget	52,000	75% goes into projects
Samsung Fund	12,000	
Wiley Macromolecular Symposia	4,000	expected
Division Reserve (Executive Committee)	(4,000)	2004-2005
Project Committee (Interdivisional)	(25,500)	2004-2005
	68,500	

APPENDIX 6: Structure of the Division

TITULAR MEMBERS

Robert F. T. Stepto	(Past President, 2006-2007)
Jung-Il Jin	(President, 2006-2009)
Christopher K. Ober	(Vice President, 2006-2009)
William J. Work†	(Secretary, 1998-2007)
Michael Buback	(Polymerization, 2000-2007)
Sung Chul Kim	(Structure & Properties, 2004-2007)
Ronald D. Sanderson	(Education, 2004-2007)
Michael Hess	(Terminology, 2006-2009)
Stanislaw Penczek	(Conference, 2006-2009)
Taihyun Chang	(Mol. Characterization, 2006-2009)

ASSOCIATE MEMBERS

Richard G. Jones ‡	(Terminology, 2006-2007)
Rob. S. Bailey	(Structure & Properties, 2006-2007)
Przemyslaw Kubisa	(Conference, 2006-2007)
Jean-Pierre Vairon*	(Education, 2006-2007)
Jaroslav Stejskal	(Developing Polym., 2006-2007)
Mitsuo Sawamoto	(Strategy and New Members, 2006-2007)

* Divisional liaison to CCE(AM)
† Electronics Publication & Developing Polymers.
‡ Division Web Page and Electronic Publication

NATIONAL REPRESENTATIVES 2006-2007

NAME	**NATIONALITY**	**PRESENT STATUS**
Dusan Berek	Slovakia	
Joannis K. Kallitsis	Greece	
Alexei R. Khokhlov	Russia	NR (’04-’05)
M. Angeles Monge Bravo	Spain	
Bo Nyström	Norway	NR (’04-’05)
Gregory T. Russell	New Zealand	
Muhammad Ilyas Sarwar	Pakistan	
Ailton de Souza Gomes	Brazil	WPC-2006
Zi-Chen Li	China-Beijing	Beijing Univ.
Andrew K. Whittaker	Australia	NR (’04-’05)

SUBCOMMITTEES

1. Polymer Terminology

Chairman	Richard G. Jones
Secretary	Michael Hess

2. Structure and Properties of Commercial Polymers

Co-chairman	Rob S. Bailey
	Sung Chul Kim
Co-secretary	Dirk Dijkstra
	Doo Sung Lee

3. Modelling of Polymerisation, Kinetics, and Processes

Chairman	Michael Buback
Vice-Chairman	Gregory T. Russell
Co-Chairman	Robin Hutchinson
Secretary	Sabine Beuermann

4. Molecular Characterisation of Polymers

Chairman	Taihyun Chang
Co-Chairman	Harald Pasch

5. Developing Polymer Materials Systems

Chairman	Jaroslaw Stejskal
Co-Chairman	Christopher K. Ober

6. Polymer Education

Chairman	Jean-Pierre Vairon
Secretary	G. Froyer

REPRESENTATION ON OTHER COMMITTEES

CHEMRAWN	To be decided
COCI	William J. Work
CCE	Jean-Pierre Vairon
ICTNS	Jaroslav Kahovec
Div. VIII	Richard G. Jones

SPECIAL RESPONSIBILITIES

Conference

Prezemyslaw Kubisa (AM)
Stanislaw Penczek (TM)

Strategy & New Members

Mitsuo Sawamoto (AM)
Christopher K. Ober (VP)

Div. Web Page & Electronic Publication

Richard G. Jones (AM)
William J. Work (Secretary)