IUPAC Division of Chemistry and the Environment (DCE)
Minutes of Division Committee Meeting
9 - 11 June 2006, RIVM, Bilthoven, The Netherlands

Present: Ken Racke (President), Willie Peijnenburg (Secretary), Yong-Hwa Kim (NR, South Korea), Werner Kördel (AM), Nicola Senesi (AM), Ewa Cukrowska (NR, South Africa), Laura McConnell (TM), Leo Klasinc (NR, Croatia), Hemda Garelick (TM), Pan-Ming Huang (AM), Manos Dassenakis (NR, Greece), Elke Anklam (AM), Laurence D. Melton (TM), Ole Hertel (AM), Kevin Wilkinson (TM), Yehuda Shevah (AM).

Apologies: Walter Benson (AM; IOCD), Don Wauchope (TM), Yuanhang Zhang (NR, China), Petr Fedotov (AM), Muhammad Iqbal Bhanger (NR, Pakistan), Reto Battaglia (AM).

0. Executive Summary

Sixteen members of the IUPAC Division of Chemistry and the Environment participated in the 2006 meeting held at RIVM, Bilthoven, the Netherlands. Key objectives and resulting outcomes are summarized below:

1 – Review project progress and provide guidance on project execution. Twenty projects are in progress at the moment, one of which is in press, and 8 are to finish before the end of the year. One project was abandoned but the topic may be of future interest.

2 – Collect new project proposals. Five proposals were discussed, three of which were accepted and assigned funding from the new biennial budget. Two proposals were identified as requiring some modification. One of these latter projects was assigned to be brought forward for funding by the IUPAC Project Committee when available in revised form.

3 – Establish nominating committee for Division in the next biennium. Werner Klein and Laura McConnell were assigned this task, as well as the task of bringing forward a proposal for new leadership as the Division President's term will be completed at the end of 2007.

4 – Spend time on specific disciplines by means of break-out meetings of the four sub-committees.

Several new areas of project activities were discussed, including ambitious new book series on biophysico-chemical processes in environmental systems. Major conferences related to crop protection chemistry and food chemistry are planned for 2006 and 2007, respectively. The next face-to-face meeting of the Divisional Committee will be during the General Assembly 2007 in Torino, Italy.

1. Introduction and apologies

a. Introduction of attendees and apologies

Attendance was experienced as being very good: 16 out of the 22 Division members could be welcomed by the Division President.

b. Overview of the Division

Over the last years, IUPAC has changed from a static organization towards a smaller, more efficient, flexible, and productive organization. Most of the work was moved to projects, focusing on work to be carried out within project teams. More time is spent within Divisions on project proposals and most of the work is organized around small project teams. IUPAC is trying to get more scientists involved in the work.

Our Committee has moved into a supervising body, organizing and supervising work. The focus of the 2006 meeting will therefore not be on science. The objectives of the meeting are:

1 – To review progress of projects, especially for the projects going on for longer periods of time.

2 – Review and decide on new project proposals and proposed conference activities.

3 – Allow the four active sub-committees within our Division to meet and to get organized.

4 – Ensure continuity of our membership at the Division level and appoint a chair of a new nominating committee to support the elections during 2007.

2. Minutes of 2005 DCE and Bureau meetings in Beijing

a. Division Committee Meeting [meeting minutes]

Unfortunately, the name of Hemda Garelick was not included in the list of attendees. Various action points were identified and these will be reviewed during the various topics put on the agenda. The corrected version will be put on the IUPAC website (**Action: Division secretary**).

b. Bureau Meeting [meeting minutes]

Some of the highlights of this meeting were explained by the Division Chairman:
1 – Several new members of the Bureau were elected, including a new president-elect.
2 – A proposal was made to replace the bureau by a new body. A small party was formed to study a move from a two-level body to a single level organization.
3 – Budget was approved, including a small increase in national contributions.
4 – Some problems were encountered with some NAO not paying their dues. These countries were put on hold, but this will not affect our activities.
5 – Some new NAOs were recruited.
6 – The new editorial advisory board of PAC was approved.
7 – The 2009 General Assembly was decided to be organized in Glasgow, Scotland during 1-9 August.

Highlights of the meeting can be found on the IUPAC website.

3. Membership 2006-2007 and appointment of nominating committee

a. Review of 2006-2007 membership [membership listing]

The only problem encountered with the new membership was formalities with the appointment of National Representatives. They need to be appointed by their NAO. Thereupon there was a problem with duplication since there is a rule that NRs can only be appointed from countries not represented in the Division already. Nominations of three proposed NRs were therefore not accepted (Patrick Dysseler, Jörg Feldmann, Konstantin Terytze). An overview of the approved membership of Division VI is provided in Appendix I.

It was noted that within division we are not hierarchical, independent of being a TM/AM/NR everyone is fully part of all activities of the Division.

All members are invited to check their details on the IUPAC webpage to make sure that their contact details are correct.

b. New nominating committee [IUPAC Election Process] [DCE Election 2007]

Future membership needs:
1 – Most membership positions will basically expire at the end of 2007. We need to focus on three TM positions that need to be filled in by an open election process.
2 – A new president will be part of the election process with term to begin January 2008.
3 – The Division committee selects its AMs and NRs.
The election process: An overview of the timeline was provided in the documentation accompanying the agenda. It is important that balloting organized by the IUPAC Secretariat begin no later than April 2007 so that final results are available in time for the General Assembly. A nominating committee to develop the TM candidates for the ballot needs to be established including three "outsiders". Election is only for TMs; AMs/NRs will need to be selected and confirmed by the existing Division Committee at the 2007 General Assembly. This implies that a chair of the nominating committee for new TMs needs to be established during this 2006-meeting.
It was questioned why this procedure is repeated every two years and not just every 4 years, given the huge effort needed. DP will raise this at the Bureau meeting later this year as a possibility although it was recognized that for continuity TMs come in every two years (**Action DP**).
Laura McConnell is willing to serve on the nominating committee. Given her experience with IUPAC she will be proposed as the chairman. It was suggested to propose some of the members of the previous committee to serve again on the committee. Hemda Garelick has two persons in mind who could serve as well (**Action Hemda to propose**). Laura McConnell and Werner Klein will be considered as the insiders in the nomination committee (**Laura to establish a nominating committee**).

4. Review of current projects

a. Existing project review

Some projects are running for about 5/6 years and we want to especially review those. The purpose is to give guidance to projects regarding completion, need of a new leader, or any other business related to progress. For most projects there is a standardized progress report (distributed among Division members).

2005-024-2-600 Establishment of guidelines for the validation of qualitative and semi-quantitative (screening) methods by collaborative trial: a harmonized approach (Elke Anklam).

Elke Anklam is facing some difficulties in getting the project team members activated each time. A lot of positive responses were already received on the proposal for the project and a new member from Spain was brought on the project team. There is consensus on the topic and a first draft was prepared and discussed with one of the NOAC. Elke is now awaiting their contribution. A relatively small effort needs to be put in to finalize the draft report. This will be done during a second project team meeting. An extra amount of 2000 $ will be made available for this purpose by the Division from the new Division budget to double the relatively small budget initially set aside (**Action DP**).

This procedure serves as an example for a strategy for future projects: start with a relatively small amount, supplement with additional funds when there is sufficient progress and when it is likely that the project is on schedule for completion.

2004-015-1-600 Environmental colloids: behaviour, structure and characterization (Kevin Wilkinson).

This is the 10th book in the Wiley Series. One important chapter is to be completed, one chapter on fundamental aspects was added and there are now 13 chapters providing critical and good literature reviews. Galleys proofs are expected during the summer, the book should be out by the end of the year. The editors of the book will serve as guest editor of the journal "Environmental Chemistry".

Kevin Wilkinson is requested to initiate formal release of the book via the Division President by means of a formal letter and a CD containing the draft manuscript (**Action Kevin**).

2004-003-3-600 Biophysico-Chemical Processes of Heavy Metals and Metalloids in Soil Environments (Antonio Violante).

It was reported by Ming Huang that this book will be completed by the end of this year via the Division President. All manuscripts have been received, 10 of them are accepted and 6 are under second review after some fine-tuning. A symposium will be organized during the 2006 - IUSS symposium in Philadelphia as a showcase for the book and to expose it to an international audience.

2004-002-1-600 Glossary of terms related to pesticides (Gary Stephenson).

The project is close to completion, as the final report is about to be published in PAC.

A presentation will be made at the next pesticide conference in Kobe (Japan) and the document will be distributed at this conference. It is recognized by Division that it is a tough process to get consensus on terms.

2004-011-1-600 Simplified methods & tools for environmental assessment of pesticides (Ron Parker).

No review report was received on this project. An oral report was presented by DP. Limited contribution was received from industry, which is remarkable since industry is active in this

area. The problem is that there is reluctance since industry is afraid of unwarranted decisions to be made once a chemical does not pass the screening approach: what is next in this case?

DP and **DS** to make sure that an update formal progress report is received.

2003-030-1-600 Glossary of terms for atmospheric chemistry (Cvitas).

No review report was received on this project. **DS** and **Leo Klasinc** to follow up and make sure that a report is being prepared. A decision on the future of the project (including the decision to extent the deadline for completion of the project) will be taken dependent on the progress reported.

2003-058-1 Air Pollution & Human Exposure Modeling (Hertel)

A little less than one third of the authors have not yet submitted their chapters. The available funds from IUPAC will be used for graphical support for the chapters. Receipt of additional one or two chapters is needed to get started with this. The project is behind schedule, but still proceeding. **Ole Hertel** will submit a progress report after the meeting.

2003-017-1 Valuation of arsenic Contamination in Water & Remediation Options (Garelick)

A written report was provided by the project leader. The pieces of the puzzle have been submitted, now it is time to bring everything together in the form of an IUPAC report that is to be peer-reviewed and could be published in a special issue of PAC. The topic of the project is recognized as a priority by the EU and has been identified as one of the key topics in the 6th EU Research Framework.

Possible follow-up activities will be identified by the project leader (**Action: Hemda Garelick**).

2003-014-2 Fractal Structures and Processes in the Environment (Senesi)

A progress report was submitted. The project was planned to be finished one week ago. The main difficulties encountered were the initial delay by some authors in submitting their Chapters and the late response by some external Reviewers. Late august/begin September an authors meeting will be organized. The project is rather ambitious since there is no similar book on the market. The title will be changed to include the words 'chemical' or 'chemistry'.

A rather large budget was assigned, amongst others to bring authors together. Everything is spent, it might be a good idea to bring the authors together once more related to other activities, and have a workshop in Chicago, Montreal (SETAC Conference), or Torino (GA – 2007).

Overall, the project is progressing well.

2003-013-1 Crop Protection Chemistry in Latin America: Harmonized

Approaches for Environmental Assessment and Regulation (Carazo)

A project report was submitted by the project leader. Three phases have been identified, amongst others the organization of workshops. The reports of these workshops have been published in Chemistry International. Progress has been made in various areas; ecological risk assessment is facing reluctance from industry and government to cooperate in this area. Two documents will be translated in Spanish following the recognition that no comprehensive (text)books are available in Spanish.

Thanks to various sponsors, more funds are currently available than provided by IUPAC at the start of the project, and these will allow completion of the final phase of the project.

2001-39-1 Pest management for small-acreage crops - a cooperative approach (Wauchope)

The project is scheduled for completion this year, funds have been spent, and additional efforts will be made to publish the project results.

2003-011-3 Compendium of pesticide data (Wauchope)

This is a shared project with the Analytical Chemistry Division. The project is in a little difficult position as there are not enough volunteers to contribute. It is proposed to cooperate with project 2001-022-1. It is not clear what makes sense for the next steps, especially since the Analytical Chemistry Division is also involved and we need their agreement on any steps taken. **Laura McConnell** and **DP** will meet with Don Wauchope in Kobe later this summer and then a decision will be taken on how to proceed with the project, as more detailed information will be available by then: September 2006.

2003-013-2 Determination of trace elements in oils and fats (Cantrill)

The study involves laboratory work and is nearing completion; early fall is foreseen as the completion period. No further information is available at this stage. A formal letter will be sent to the project leader to provide a formal progress report (**DS**/**DP**).

2001-026-1 Use of reference soils for testing fates & effects of chemicals (Kördel)

Progress report was submitted prior to the meeting. A two-days meeting was organized in October 2005. The project leader is preparing the final report; additional input is needed from the other members of the project team. Dependent on their response it will be decided whether or not an additional meeting is needed to finish the report. The project will be extended to other references materials apart from soil, and will be finished by the end of this year.

2001-024-2 Impact of transgenic crops on the environmental impact of agrochemicals (Kleter)

A proportion of the funds were provided by Division VI, and supplemented by other IUPAC bodies. A progress report was submitted, the project is planned to be completed by means of the final project team meeting in Kobe; a draft report is expected by September 2006. A follow-up by means of a proposal for a project on impacts on humans has been submitted by the project leader. **DP** will circulate interim reports on this project.

2001-023-1 Spray Drift Assessment and Mitigation (Felsot)

A draft report was prepared already in 2005 and discussed in the sub-committee. No final report has been brought forward. **DP/DS** will ask for a formal report and will communicate September 2006 as the date of completion.

2001-022-1-600 Global Availability of Information on Agrochemicals (Unsworth) This project has fostered cooperation with IAEA/FAO. The final outcome will not be a formal report but instead there will be sharing of information via a website. Later this summer a presentation will be held in at the IUPAC Pesticide conference in Kobe (Japan). It is requested to review the developed website by the Division before it is going on air: **DS/DP** to communicate this to the project leader. Some money is needed to support the contents on the website once it has been established. A maintenance plan for the website will be requested (**DS/DP**).

1999-041-1-600 Bioavailability of xenobiotics in the soil environment (Katayama) A progress report was obtained. The project has been activated again and completion is foreseen for August 2006. The real difficulty was language and work is needed to revise the manuscript. The recommendations are now being implemented. **DS/DP** will ask the project leader to make sure that the project is finished in August.

1999-014-2-600 Airborne & Remote Sensing of Water Quality (Dekker) No information was received on this project since the Beijing GA. It is decided to finish the project since there is no response from the project leader. **DS** will send a letter to the project leader to inform him of the decision made. The topic was flagged as being of importance to IUPAC.

630/24/95 Macropore flow (Kördel)

The project is finished: the manuscript is in press in PAC.

General issues related to project progress

1 - There is general agreement on project progress: **DP** and **DS** will consult the IUPAC secretariat and wherever appropriate and based on the project reports, get the planned end dates changed.

2 - A general issue identified is that whereas the focus of many of our projects is on publishing books that are often too expensive to purchase by libraries in developing countries, it was agreed that the issue of alternative publication media like websites will be brought forward by the **DP** to the IUPAC Secretariat / IUPAC Bureau.

3 – Overall: one project completed, one abandoned.

b. Interdivisional projects

Two projects are ongoing with support of our Division:

1 - Standardization of Analytical Approaches and Capacity Building in Africa (Benson)

The Analytical Chemistry Division is supporting this project on behalf of IUPAC, apart from substantial sponsoring from a number of international organizations. It seems like there was some problem in getting this project started. A project report was submitted by the project leader: 2 out of the 3 project phases foreseen were completed. A decision needs to be made in Torino on the added value of the project. **DP** will contact the analytical division, asking for a meeting on the project in Torino.

2 - 2004-022-1 Nomenclature on starch components (Fitzgerald)

Division on macromolecules is in the lead of this project. No progress report was received. An update on progress is requested via the Macromolecules Division.

5. Budget status for projects and 2006-2007 biennium

a. Project budget status [DCE budget status 01May2006]

1 – It was noted that it is of importance to realize that budget is assigned to projects for life.

2 – Remaining budget for each project was reviewed and spending was in all cases judged to be according to expectation.

3 – A copy of the project budget status as of 1 May 2006 is included in an appendix to this report.

b. Division budget status for 2006-2007 [Status 01 May 2006]

Division budget is the same this biennium as it was last time (68.000 $). It is the intention to spend as much as possible on projects. Last biennium about 75 % was spent on projects. We are in good shape on the administrative side, but need to consider what we can do to stretch funding. There are ways to stretch the budget; travel expenses for Torino are for instance covered for TMs and do not weigh on our budget, conferences are not paid for by IUPAC but there are funds available within IUPAC to provide support once a Division has approved a call for support, and we have a budget for book royalties that is in use to prepare new books.

A discussion was initiated on the aspect of the need of a new model for preparation of books, given the high prices (up till 300 $) and hence the limited audience (limited availability to students). It is important to keep the price down, and this can usually be achieved by limiting the number of pages. Also, there might be possibilities to put books published in electronic format. As a matter of course, negotiations on copyright need to be initiated for this purpose. Another option would be to publish new books electronically via the IUPAC website. PAC publications are already freely available as pdf. No decision was made at this stage on how to proceed; the topic is flagged for future discussion.

6. Review of subcommittee reports

a. Biophysico-chemical processes in environmental systems

An overview of the status of the subcommittee and membership was provided by Nicola Senesi. The report is attached as Appendix II to the minutes of the Bilthoven meeting. On top of the activities described in this report, new areas of interest were identified during the meeting: a glossary on speciation nomenclature, and teaching volumes on environmental concepts for graduate courses (low cost, no critical review). It was agreed that this latter topic is an area of importance for IUPAC and that there is a clear need for good teaching books

within environmental chemistry. **DS** will provide Kevin Wilkinson with tips on preparation of glossaries (via the IUPAC website or the IUPAC Office). The report on the outcome of the discussions during the Bilthoven meeting is added as Appendix III.

b. Crop protection chemistry

The report of the subcommittee is attached as Appendix IV.

c. Chemistry of environmental compartments

Yehuda Shevah will provide a report on current activities of the subcommittee. Four projects are being processed currently, the results of one of them is about to be published in PAC. A proposal will be submitted for a follow-up project on arsenic.

A proposal will be submitted by the chairman of the subcommittee for at least 6 presentations during the Torino GA (**Action: Yehuda Shevah)**.

d. Food chemistry

General comments

1 – The area of food chemistry has withered away in the Division as continuity was lost due to various restructuring actions. The area is now being re-established and in the new nomination process we need to pay attention to this area, including new leadership.

2 – Important topics of attention were: a - Nutrigenomics / anti-oxidants were identified as new areas of interest, b - links with the group on mycotoxins / phycotoxins need to be strengthened.

3 – Specific project proposal: dietary fibers. The proposal will be submitted by Laurie Melton, and will start in August 2006. Meetings of the project team are foreseen in March 2007 and during the IUPAC GA 2007 in Torino. The main objective is to put order in the many definitions of dietary fibers in chemical terms; fibers are defined according to the chemical properties of the molecules. The project leader is confident that the existing knowledge is enough to define fibers in a chemical sense. Division VI is supportive of the proposal; the proposal is provisionally approved provided a round of consultation (email) among Division members after formal submission of the proposal and consultation of the proposed project team members.

7. New projects and future conferences for DCE sponsorship

a. Project proposals

- **Project 2005-048-2 Letcher. Solubility and Thermodynamic properties related to environmental issues**

The lead Division is the Physical and Biophysical Division. Comments were provided by various Division VI members and were in general of a positive nature. The proposal was revised and Division VI committed 1250 $. **DP** will check whether the royalties of the book will go to IUPAC. Nicola Senesi mentioned that the book does not have a strong backbone and the chapters seem to be drawn from the proceedings of a conference.

- **Project 2006-011 McConnell. Critical review of available methods to predict VOC emission potentials for pesticide formulations**

This is an area that is developing and now is a good moment to provide an overview of methods available, some of the regulatory assumptions in VOC emission are invalid and this project will provide more accurate methods for distinguishing effects (like ozone depletion: not all VOCs emitted are equally active, as currently assumed). The outcome will be a technical review.

The review reports were positive, although more non-US scientists are needed in the project team. **Dr. Kim** will propose a Chinese expert. A modest budget is requested. It was questioned what the impact is of publications in PAC. **DP/DS** will investigate the impact of PAC publications. There is always the possibility of publishing papers both in PAC and a peer-reviewed journal (this is IUPAC policy). The decision was taken to approve this project and assign it a budget of 2500 $. **Laura McConnell** will expand the project team and prepare a modified proposal in this respect.

- **Project 2006-014 Senesi. Biophysical processes involving natural nonliving organic matter in environmental systems**

Information on this proposed project was distributed. The aim of the book is to have a different approach from the classical way of describing interactions in the various compartments. Two parts are foreseen: one on description of the fundamentals and one part on analytical aspects. Overall the comments are positive, a couple of reviewers question the need to publish the book, and reviewer 1 gives a detailed overview of books within the area of the book proposed. Travel expenses are questioned by some of the reviewers, a two-day meeting is judged by the proposed project leader to be much better than extensive email exchange of information.

General discussion

During the last meeting it was decided that Division VI will evaluate each proposal for new books for its merit. The general content is that we want to continue with the series of reviews. It was questioned whether Nicola Senesi can complete two projects at the same time. However, since the fractal book is in its last stage of preparation, no problem is foreseen in this respect.

The total budget requested is 8.500 $. The authors meeting will be combined with a conference. It was decided to approve the proposal, to assign a budget of 1.800 $ that are currently available from the Wiley fund, and to assign an additional budget of 4.000 $ from Division. Eventually the project may require more budget as the project advances; if needed this should be requested for consideration in future.

- **Project 2006-015 Kleter. Implications of altered residues of pesticides applied on transgenic crops for food and feed safety**

Proposal submitted, reviews received. A budget of 10.000 $ is requested, the project is foreseen to last for three years. Some questions were raised by the reviewers, amongst others on budget, on the results of the previous project.

Additional views

- It is considered unusual to ask for a budget for three persons for three years. The idea is to fly task group members to meetings where most of the task group members are already present, so from this perspective the approach might make sense.
- It is proposed to split the budget and to start with a lower budget and decide on the remaining budget once progress is shown.
- It is not clear how the work will develop as only a few lines on the contents are present in the proposal. A more detailed description is considered essential before a final decision can be taken. The underlying ideas are good, but the proposal needs further detailing. **DP** and

Laura McConell will meet Dr. Kleter in August 2006 and will then discuss the modifications needed. If the revision is in time, then we can decide later this year during a phone conference on the proposals. Decision made: Division VI recognizes this as a topic of interest. The proposed project leader is asked to revise the proposal, focusing on budget and contents details.

- **Project 2006-017 Racke. Crop Protection Chemistry in Asia: Harmonized Approaches for Safety Evaluation, Regulation, and Protection of Trade**

  A three-stage approach is proposed: evaluate current state, organize a workshop, and prepare a set of recommendations. The focus will be on China. Support is asked for the international speakers, no support is requested for local participants: 9.000 $. As much as possible, participants are selected that can fund their own expenses. There seems to be much interest in the region.

  Discussion

  1 – How will this project affect practices in other Asian countries (like India with different practices from China) since the focus is on China? Contributors from other countries will be invited, but countries like India are not in the focus of this project and would require an additional activity. In inviting lecturers, funds will be made available to get speakers from various regions. This will be made clear from the start with the other contributing organizations.

  2 – Will the project be brought forward without the support of other organizations? No: additional funds are needed. What is important is to get momentum by means of a limited budget.

  3 – Are there any potential agricultural societies or other organizations that might contribute? IUPAC is needed in the lead; several other organizations were identified and will be brought on board once the key organizations decide to contribute.

It was decided to provide 3.000 $ as seed money. Once progress is shown, additional funds can be requested for either from the Division allocation of the IUPAC Project Committee. The initial allocation is sufficient to help the project started and attract additional funds from project co-sponsors.

- **Project proposal by Dr. Petr Fedotov. Extraction and Fractionation Methods for Risk Assessment Related to Trace Metals, Metalloids and Hazardous Organic Compounds in Terrestrial Environments**

  This is a pre-submission. Ewa Cukrowska gave a short explanation on the project, highlighting the most important features as described in the proposal. The outcome of the project is a contribution to PAC. One question raised is what the difference is with the contribution of Dr. Fedotov to the book of Prof. Violante. There is also a lot of work ongoing in the area of standardization of leaching methods and bioavailability and there might be overlapping there as well. Dr. Werner Kördel is proposed as a potential contributor and it is requested that the latest version of the contribution of Dr. Fedotov to the Violante project is sent to all Division members (**Action: Dr. Fedotov**).

  Decision: Dr. Fedotov is encouraged to submit the somewhat revised proposal and to show where it deviates from previous contributions and from other international activities in this area. Furthermore it is proposed to add Dr. Kördel to the project team. After that, the

Division members can take comment on the proposal. The topic is identified as being of interest to Division. A decision is foreseen in August/September, including a decision on the budget requested.

b. Conferences organized by the Division

- **IUPAC Crop Protection Chemistry, Japan, 2006 [AIS/fund petition]**

A flyer was circulated and a request was put in by the organizers for Divisional support to allow scientist from developing countries to attend. As a token that this Division approves the congress, and continues to support this conference it was decided that 4.000 $ will be donated, earmarked for scientists from developing countries. We want to know who were supported. (**DP to notify the organizers**)

- **IUPAC Mycotoxins/Phytotoxins, Turkey, 2007 [AIS/fund petition]**

This is the 12th conference in a series. The proposal for making this an IUPAC conference was accepted two years ago: funding was not the issue then. Late last year IUPAC funds were requested and 4.000 $ were granted from the IUPAC fund for conferences in scientifically emerging regions. Elke Anklam will give a welcome address and other ways of publicizing the work of IUPAC will be investigated (**DP/DS/Elke Anklam/Pat Holland**). A flyer of the conference will be circulated among Division members (**Action: DS**).

c. Other conferences for IUPAC sponsorship

- **ISMOM [ASI]**

A proposal was submitted and distributed among Division members. Two decisions need to be taken: is this a conference that IUPAC wants to be affiliated with (answer: yes, this can be confirmed with the IUPAC secretariat – **DS/DP**), and would we like to support according to the petition that was received. The funds have been requested by the organizers from the IUPAC fund for conferences in scientifically emerging regions. It appears reasonable to support expenses for participants from Central and South America, but the Committee felt it important for these participants to have their registration fees waived by the organizers. It was decided that the Division will support the request for funds from the centralized IUPAC fund and a letter will be written to the IUPAC Secretariat to endorse qualification of the conference for funding under the scientifically emerging regions program.

We are recommending two scientists from scientifically emerging regions at PhD level and two IUPAC lecturers. **Ming Huang** will help **DS/DP** to prepare a letter.

Overall status of budget

If we add everything up, we end up with a total commitment of 16.750 $ (excluding the proposal of Kleter and Fedotov which have not been formally accepted). This leaves room for new initiatives and allows approving the proposals discussed during the meeting, as indicated above. In the future months, new calls for proposals can be accommodated.

9. Other business

- **Publications, PAC Editorial Board**

A short report on the PAC Editorial Board will be requested by **DS** from Ole Hertel.

With regard to publishing, Wiley will be asked for information on the status of electronic availability and copyright (copyright belongs to Wiley), especially with regard to the "old" series (**Action: Nicola Senesi**). **DS/DP** will explore what the opinion of IUPAC is with regard to electronic publishing; pdf-distribution, web-supported printing, electronic request for reprints, etc.

- **IUPAC Committees, ICTNS, COCI**
  - Yehuda Shevah is our representative at ICTNS. Yehuda gave a brief report on the activities within this committee.
  - Keiji Tanaka is the representative at COCI. No detailed information is available on this activity. **DS/DP** will solicit a report of Keiji.
  - Don Wauchope is member of the education committee of IUPAC. No detailed information is available on this activity. **DS/DP** will solicit a report of Don.
  - Nicola Senesi is member of the Green Chemistry Committee. A conference will be organized in Leipzig later this year, promoted by Prof. Tundo.

- **Communication.**

This topic was brought up by Laura McConnell: what she experienced was that new project leaders who are unknown with the IUPAC system, need information on expectations, requirements, procedures, etc. This information is currently insufficiently provided. **DS/DP** will solicit information on procedures with regard to this issue.

- **Next meetings, planning for 2007 GA in Torino, Italy.**

DP will attend the Bureau Meeting in Madrid, later this year. All attention items from the Bilthoven meeting will be brought up at this meeting.

The 2007 General Assembly and the IUPAC Chemistry Congress will be organized 4-11 August 2007, Torino, Italy. Usually, the Division meetings are at the beginning of the GA. **DP** will circulate the GA information and request joint meetings.

Meeting in 2008 is up to the Division Committee with regard to location. A decision will be made during the 2007 GA.

2006/2006 Phone Conference – to be organized by DP and DS for late 2006 and/or during the first half of 2007. Especially the new project proposals need discussion, both with regard to content and funding.

General discussion on concept of the Division meeting

Areas of improvement:

1. Documents need to be distributed earlier.
2. A projector would be handy.
3. It is proposed to organize the subcommittee earlier during the Division meeting in order to avoid repetition, and to keep the subcommittee meetings limited in length.

4. The meeting could be more condensed in moving along the topics, but it is good that everyone gets a good chance to give their input. Repetition should be avoided more.
5. It is for some members difficult to decide to which subcommittee they best belong and these members would like to be involved in the meeting of more than one subcommittee. At the next meeting we need to discuss merging the subcommittees on Environmental compartments and Biophysico-Chemical Processes in Environmental Systems.

It was widely stated that the meeting was well-organized, and appreciation was offered to Willie Peijnenburg and RIVM for serving as host.

Appendix I

Division of Chemistry and the Environment (VI)
Confirmed Division Committee Members, Term, NAO

Titular Members (10)

Dr. Hemda Garelick	2006-2009	UK
Dr. Ole Hertel	2006-2009	Denmark
Prof. Pan Ming Huang	2006-2009	Canada
Prof. Yong-Hwa Kim	2006-2009	Korea
Dr. Laura McConnell	2004-2007	USA
Prof. Laurence D. Melton	2006-2009	New Zealand
Dr. Willie J.G.M. Peijnenberg (DS)	2006-2009	Netherlands
Dr. Kenneth D. Racke (DP)	2004-2007	USA
Dr. R. Donald Wauchope	2004-2007	USA
Prof. Kevin J. Wilkinson	2006-2009	Canada

Associate Members (7)

Dr. Elke Anklam	2006-2007	Belgium
Dr. Reto Battaglia	2006-2007	Switzerland
Dr. Walter R. Benson	2006-2007	USA
Dr. Petr S. Fedotov	2006-2007	Russia
Dr. Werner Kördel	2006-2007	Germany
Prof. Nicola Senesi	2006-2007	Italy
Dr. Yehuda Shevah	2006-2007	Israel

National Representatives (7)

Prof. Muhammad Iqbal Bhanger	2006-2007	Pakistan
Prof. Ewa Cukrowska	2006-2007	South Africa
Prof. Manos Dassenakis	2006-2007	Greece
Dr. Melissa Fitzgerald	2006-2007	Australia
Prof. Leo Klasinc	2006-2007	Croatia
Dr. Keiji Tanaka	2006-2007	Japan
Prof. Yuanhang Zhang	2006-2007	China

Appendix II

Subcommittee "Biophysico-Chemical Processes in Environmental Systems"

Progress Report June 2004-May 2006

1. 2006-2007 Membership

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2. Activities by SubCommittee Members

2.1. The Chairman, Prof. Nicola Senesi was appointed as official IUPAC Lecturer and IUPAC Representative and participated at the IUPAC-sponsored International Symposium "Environmental Significance of Mineral Organic Component-Microorganisms Interactions in Terrestrial Systems", ISMOM 2004, held in WUHAN, China, Sept. 20-23, 2004.
The Symposium was the 4th International Symposium organized by the Working Group Interactions of Soil Minerals with Organic Components and Microorganisms (ISMOM) of the International Union of Soil Sciences (IUSS) and co-sponsored by IUPAC, the Chinese Academy of Sciences, the National Natural Science Foundation of China, and the Soil Science Society of China. It addressed timely topics covering dynamics and trasformations of nutrients and pollutants in soils and the impact on environmental quality in the terrestrial ecosystem. It served as a forum for interactions of scientists of pertinent disciplines from developing and developed countries worldwide. There were plenary lectures and keynote lectures in six sections: (1) transformations and dynamics of pollutants in soil environments; (2) chemical, biological and biochemical processes in the rhizosphere; (3) bioavailability of metals and xenobiotics immobilized on soil components; (4) distribution and activity of biomolecules in terrestrial ecosystems; (5) interactions between soil microbial biomass and organic matter/nutrient transformation; and (6) impact of interactions among soil mineral colloids, organic matter and biota on risk assessment and restoration of terrestrial ecosystems.
Prof. Senesi gave a presentation about IUPAC during the Opening Ceremony, and the title of his lecture was "Metal-Humic Substance Complexes in Soil". He encouraged symposium participants to join IUPAC activities and to facilitate communication and strengthen the ties between IUPAC and IUSS to develop new projects which could lead to further advancement on frontiers of knowledge on chemistry and the environment and the impact of human welfare. China and neghbouring developing countries would especially benefit from this activity in advancing fundamental understandings of transformations of metals, metalloids, and organic

pollutants, and devolping innovative management strategies to enhance environmental quality and restore ecosystem health.
Prof. Senesi also gave a lecture at the College of Resource and the Environment, Zhejiang University, Hangzhou, China.

2.2. Prof. P. M. Huang was appointed as the IUPAC Representative to the International Union of Soil Sciences (IUSS) for the promotion and establishment of long-term official linkages between IUPAC and IUSS. This action is considered vital in promoting and facilitating the communication and interactions of pure and applied chemists with soil scientists in ensuring food security and safety, and protecting the environment and ecosystem health, including human health, on the global scale.
Prof. Huang has asked IUPAC Secretariat to disseminate to IUSS Headquarters, c/o Dr. Stephen Nortcliff, IUSS Secretary General, the updated pertinent information of IUPAC's work (e.g., international nomenclature, symbols, units, standard of purity, analytical methods, biennial IUPAC congresses, symposia, workshops, book series, journals, and bulletin publications). Furthermore, he has asked IUSS Headquarters to disseminate the pertinent information of IUSS's work to IUPAC Secretariat.

2.3. Prof. A. Violante and Prof. P. M. Huang are organizing a Symposium for IUSS Commission 2.5 at the 18th IUSS World Congress that will be held in Philadelphia (USA) on July 9-15, 2006. The Symposium is entitled "Soil Physicochemical-Biological Interfacial Interactions: Impact on Transformations and Bioavailability of Metals and Metalloids", and this will be the showcase of the IUPAC book they are editing (see below).
The Symposium will consist of an Oral Session which will be held on July 10, 2006 (Dr. K. Kemner has been invited to have a keynote lecture), a Poster Theater Session held on July 11, 2006 where selected posters (12) will be presented in a special oral session, and a Poster Session where more than one hundred scientific contributions will be presented (July 9-15, 2006).
More than 200 participants are expected to attend the Symposium.

3. Projects approved and in development

3.1. Project number: 2004-015-1-600
Project Title: Environmental Colloids: Behaviour, Structure and Characterisation
Task Group Leader: Kevin J. Wilkinson
A book edited by J. R. Lead and K. J. Wilkinson will be the main output from this project.
The Table of Contents of the book is:

Chapter	**Authors**
1. The characterisation of environmental colloids: what information is (still) required ?	**J.R. Lead, K.J. Wilkinson**
2. Properties of environmental particles	**M. Filella**
3. Colloid-trace element interactions in aquatic systems	**F. Doucet, P. Santschi, J.R. Lead**
4. Ultrafiltration technique and its application to sampling aquatic colloids	**L. Guo, P. Santschi**
5. Environmental applications of Field-flow fractionation and SPLITT	**M. Hasselhov, F. von der Kammer and R. Beckett**
6. Modern electrophoretic techniques for the characterization of organic environmental colloids	**P. Schmitt-Kopplin, J. Junkers**

7. Electrophoresis of soft colloids: basic principles and applications	**J. Duval**
8. Strategies and advances in the characterization of aquatic colloids by electron microscopy	**D. Mavrocordatos, D. Perret, G.G. Leppard**
9. Force microscopy and force measurements of environmental colloids	**E. Balnois, G. Papastavrou, K.J. Wilkinson**
10. Laser scanning microscopy of environmental particles	**J. Lawrence, T. Neu**
11. Study of environmental systems by fluorescence correlation spectroscopy	**N. Fatin-Rouge, J. Buffle**
12. Laser induced breakdown detection of environmental colloids	**J.-I. Kim, C. Walther**
13. Probing environmental particles with x-rays	**J.F. Gaillard**

Although the project was delayed several months with respect to the initial milestones due to two problem chapters, all chapters have been submitted to Wiley and the book is now in press. The project should be completed by the end of the year. All chapters are available, upon request (kj.wilkinson@umontreal.ca), to IUPAC DCE members.

3.2. Project number: 2003-014-2

Project Title: Fractal Structures and Processes in the Environment
Task Group Leader: Nicola Senesi
A book edited by N. Senesi and K. J. Wilkinson will be the main output from this project. The Table of Contents of the book is:

1. N. Senesi and K.J. Wilkinson. Setting the Stage: Fractals in the Environment.
2. Ph. Baveye and Ch. W. Boast. Introduction to Fractal Geometry, Fragmentation Processes and Multifractal Measures. Theory and Operational Aspects of Their Application to Natural Systems.
3. G. Bushell. Methods and Techniques for Fractal Analysis of Environmental Systems
4. S. Stoll and S. Diez. Fractal Structures and Processes of Aquatic Particles/Colloids
5. J.Y. Bottero; A. Masion, J. Rose and S. Moustier. Fractal Mechanisms in Coagulation / Flocculation Processes in Environmental Systems.
6. H. Van Damme. Scaling Concepts in Environmental Clay Physics. Flocs, Muds, Sediments and Soils
7. J. A. Rice. Applications of Fractals in the Study of Humic Materials
8. L. Boddy and D. P. Donnelly. Fractal Geometry and Microorganisms in the Environment
9. Z. Sokolowska and S. Sokolowski. Fractal Approach to Adsorption/Desorption Processes on Environmental Surfaces
10. I. Colbeck. Fractal Determinations of Atmospheric Particles

Although the project was delayed several months with respect to the initial milestones due to late submission of some chapters and/or late response from Referees, all planned chapters, except one, have been reviewed, and are now in the rerevision phase by the authors. The planned discussion meeting of senior chapter authors and the Editors will be held at the end of the rerevising process, possibly during or soon after Summer 2006, to make agreements on final revision needed by each chapter. The finally revised chapters will then be submitted to DCE, IUPAC and the Series Editors for final approval early next Fall 2006. The submission of

the entire work to the Publisher Wiley is expected by November 2006 with publication of the Book and completion of the Project in late Winter or early Spring 2007.

3.3. Project number: 2004-003-3-600.

Project Title: Biophysico-Chemical Processes of Heavy Metals and Metalloids in Soil Environments
Task Group Leader: Antonio Violante
A book edited by A. Violante, P. M. Huang, and G. Gadd will be the main output from this project.
The Table of Contents of the book is:

A. Fundamentals on Biotic and Abiotic Interactions of Trace Metals and Metalloids with Soil Components.
A.1. P.M. Huang. Impacts of Soil Physicochemical-Biological Interactions on Metals and Metalloids Transformations: An Overview.
A.2. M.J. Borda and D.L. Sparks. Kinetics and Mechanisms of Sorption/Desorption in Soils: A Multi-Scale Assessment.
A.3. N. Senesi and E. Loffredo. Spectroscopic Techniques for Studying Metal-Humic Substance Complexes in Soil: An Overview.
A.4. A.Violante, G.S.R. Krishnamurti and M. Pigna Factors affecting the Sorption-Desorption of Trace Elements in Soil Environments.
A.5. S. Goldberg and L. J. Criscenti. Modeling Adsorption of Heavy Metals and Metalloids by Soil Components.

B. Transformations and Dynamics of Metals and Metalloids as Influenced by Soil-Root-Microbe Interactions.

B.1. G.M. Gadd. Transformation and Mobilization of Metals by Microorganisms**.**
B.2. S. Fendorf, M. Herbell, K. J. Tufano, B. Kocar. Biogeochemical Processes Controlling the Cycling of Arsenic in Soils and Sediments.
B.3**.** S. C. Neubauer, D. Emerson, and J. P. Megonigal. Microbial Oxidation and Reduction of Iron in the Root Zone and Mobility of Heavy Metals.
B.4. F. Hinsinger and F. Courchesne Mobility and Bioavailability of Heavy Metals and Metalloids at the Soil-Root Interface.
B.5.M.E. Essington. The Complexity of Aqueous Complexation: In the Case of Aluminum- and Iron(III)-Citrate.
C. Speciation, Mobility and Bioavailability of Trace Metals and Metalloids in Soil Environments
C.1. G.S.R. Krishnamurti and R. Naidu. Chemical Speciation and Bioavailability.
C.3. P. S. Fedotov and M. Mir?. Fractionation and Mobility of Trace Elements in Soils and Sediments.
C.4. S. Staunton, C-S. A. Haudin, G. Wang and G. Shaw. Source and Mobility of Metallic Radionuclides in Soil Systems.
C.5. P.M. Bertsch and B. Jackson. Biogeochemistry of Uranium and other Actinides in Contaminated Soils and Sediments.
D. Chemical and Biological Remediation of Soils Contaminated with Metals and Metalloids.
D.1 . M. Grafe and R. Naidu. Remediation of Metal Contaminated Soils: An Overview.
D.2. L. Diels and K. Vanbroekhoven. Remediation of Metal and Metalloid Contaminated Groundwater.
D.3. R. Melamed and L.Q. Ma. Phosphate-Induced Pb Immobilization in Contaminated Soils: Mechanisms, Assessment and Field Application.

Preparation of the book is going very well. All the chapters were duly received and sent to external referees for revision. Ten chapters have been already accepted, and another six are under second revision. It is expected the complete book manuscript will be ready to be sent to the President of the IUPAC Division of Chemistry & the Environment for final review and approval by December 31, 2006. The Editors have planned to submit to the Publisher the complete final manuscript of the work between February and March, 2007.
A Round Table was organized in Seattle (USA) during the ASA-CSSA-SSSA Meetings on November 2nd, 2004.
A Meeting among the Editors of the above cited project has been held in Salt-Lake City (USA) during the ASA-CSSA-SSSA Meetings in November 6-10, 2005.

3.4. The New IUPAC-Sponsored Wiley Series edited by P.M. Huang and N. Senesi.
John Wiley & Sons, the Publisher, has agreed to publish the IUPAC-sponsored Wiley Series in *Biophysico-Chemical Processes in Environmental Systems.*
-Volume I of the New IUPAC-Sponsored Wiley Series, edited by A. Violante, P.M.Huang, and G. Gadd, *Biophysico-Chemical Processes of Heavy Metals and Metalloids in Soil Environments* (see above).
-Volume II of the New IUPAC-Sponsored Wiley Series, to be edited by N. Senesi, B. Xing, and P.M. Huang, *Biophysico-Chemical Processes Involving Natural Nonliving Organic Matter in Environmental Systems*. The Project has been submitted for approval to IUPAC.
-Other Volumes of this Series Being Planned are:
Volume III,Biophysico-Chemical Processes Involving Anthropogenic Organic Compounds in Environmental Systems: Lead Editor: N. Senesi, Professor, University of Bari, Italy.
Volume IV,Biophysico-Chemical Processes in the Environment: Impacts on Activity and transport of Pathogens. Lead Editor: Jacque Berthelin, Director of Research, Centre National de la Recherche Scientifique, Nancy, France.
Volume V,Biophysico-Chemical Processes in the Environment: Enzymatic Activity and Pollutant Transformation. Lead editor: Richard Burns, Professor of Environmental Microbiology, University of Queensland, Brisbane, Australia.
Volume VI,Biophysico-Chemical Processes and Nanoparticles in the Environment. Lead Editor: J.F. Banfield, Professor of Environmental Geochemistry, University of California, Berkeley, USA.
Volume VII,Biophysico-Chemical Processes in the Environment: Biogeochemical Ion Cycling and Global Change. Lead editor: W.H. Schlesinger, Professor of Environmental Biogeochemistry, Duke University, USA.
Volume VIII,Biophysico-Chemical Processes in the Environment: Biomineralization and the Impact on Ecosystem Restoration. Lead editor: T.J. Beveridge, Professor of Environmental Microbiology, University of Guelph, Guelph, Canada.

4. Other Activities
Applications by Prof. P. M. Huang for IUPAC Sponsorship and Financial Support for the IUSS 5th International Symposium of Interactions of Soil Minerals with Organic Components and Microorganisms (ISMOM 5), "Soil-Root-Microbe Interactions and the Impact on the Transformation and Fate of Nutrients and Pollutants in the Ecosystem", to be held in **Pucon, Chile, November 26-30, 2008.**
The objective of this symposium is to provide a forum for the interactions of environmental chemists and mineralogists, environmental microbiologists, ecologists, toxicologists and soil scientists to address the current state-of-the-art and identify gaps in knowledge on physicochemical and biological interfacial interactions at the molecular level at the soil-root interface (the rhizosphere) pertaining to the dynamics, transformations, bioavailability, and

toxicity of metals, metalloids, anthropogenic organics, and vital elements. This activity should lead to the advancement of frontiers of knowledge on environmental chemistry on soil interfacial reactions in the rhizosphere and the subsequent development of innovative management strategies to sustain environmental quality, ensure food security and safety, and ecosystem health on a global scale.

Appendix III

Minutes of Subcommittee on Biophysicochemical processes in Environmental processes
June 10, 2006

1. **Introduction of members/ Members' list**
   a. The list of current members was discussed. Several sub-committee members will be contacted to encourage them to propose projects.
   b. Two addresses should be changed :

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2. **Communications**

a. Activities by Sub Committee Members (see subcommittee report for further details)

- **Prof. Nicola Senesi** was appointed as official IUPAC Lecturer and IUPAC Representative and participated at the IUPAC-sponsored International Symposium "Environmental Significance of Mineral Organic Component-Microorganisms Interactions in Terrestrial Systems", ISMOM 2004, held in WUHAN, China, Sept. 20-23, 2004.

- **Prof. P. M. Huang** was appointed as the IUPAC Representative to the International Union of Soil Sciences (IUSS) for the promotion and establishment of long-term official linkages between IUPAC and IUSS.

- **Prof. A. Violante and Prof. P. M. Huang** are organizing a Symposium for IUSS Commission 2.5 at the 18th IUSS World Congress that will be held in Philadelphia (USA) on July 9-15, 2006.

3. **Projects** (approved and in development). See report for further details.

a. In summary, all projects appear to be well underway.

- Project number: 2004-015-1-600. Environmental Colloids: Behaviour, Structure and Characterisation

- Project number: 2003-014-2. Fractal Structures and Processes in the Environment

- Project number: 2004-003-3-600. Biophysico-Chemical Processes of Heavy Metals and Metalloids in Soil Environments

b. Possible new projects were discussed.

- Glossary on terms used in environmental chemistry. We will encourage the European Speciation Institute to submit a project on this subject.

- New Wiley series (Series editors Huang and Senesi) will go through Wiley in New Jersey. Each new book will require separate approval. Volume II (Senesi) has now been approved for production. The subcommittee recommends that all advances and royalties go to the Division VI royalty fund to be earmarked for the book activities of the subcommission. A potential series III aimed at graduate students was briefly discussed. Wilkinson will contact van Leeuwen to encourage him to submit his ideas on the new book series (Series III) to the Division for approval.

Applications by Professor Mora Gil Maria De-La-Luz for IUPAC Sponsorship and Financial Support for the IUSS 5th International Symposium of Interactions of Soil Minerals with Organic Components and Microorganisms (ISMOM 5), "Soil-Root-Microbe Interactions and the Impact on the Transformation and Fate of Nutrients and Pollutants in the Ecosystem", to be held in Pucon, Chile, November 26-30, 2008 **is unanimously recommended by the subcommittee.**

Appendix IV

Subcommittee on Crop protection chemistry - Report of activities and future plans

TERMS OF REFERENCE
Through its internationally recognised membership, the Committee provides unbiased and authoritative views regarding environmental and human health aspects of crop protection chemistry. Through its timely projects, publications, and outreach activities the Committee seeks to advance research understanding and promote environmental stewardship

MEMBERSHIP
The Committee is currently comprised of 22 members from both developed (17) and developing (5) countries. All members are actively involved in one or more ongoing IUPAC projects, and are drawn from government, academia, and industry to ensure that an adequate and unbiased balance of perspectives and approaches are considered.

OPERATION
The Committee meets formally once each year, generally in association with an IUPAC-sponsored Congress or regional workshop. Committee meetings are generally conducted as a series of concurrent working sessions of the various project teams during a 3-day period. This annual meeting format facilitates economy of effort and funding by allowing project participants to travel once to contribute for multiple projects. The Committee as a whole meets in plenary session to discuss stimulation of new project ideas, peer review and approve crop protection-related IUPAC project recommendations, and plan future technology transfer activities such as international congresses and regional workshops. The most recent meeting occurred in San Jose, Costa Rica during Feb-2005, and the next meeting is planned for Aug-2006 in Kobe, Japan.

ONGOING PROJECTS

Project Name (No.)	***Project Leader***	***Status***
Bioavailability of Xenobiotics in Soil (1999-041-1-600)	Katayama	Nearing finalization. Report and recommendations approved; in final editing. Finalization by Aug-2006.
Impact of Transgenic Crops on the Use and Environmental Impact of Agrochemicals (2001-024-2-600)	Kleter	Nearing finalization. Report and recommendations under discussion. Finalization by Aug-2006.
Spray Drift Assessment and Mitigation (2001-023-1-600)	Felsot	Nearing finalization. Near-final report under discussion. Recommendations approved. Finalization by Aug-2006.
Methods for Setting Interim MRLs for Minor-Consumption Crops (2001-039-1-600)	Wauchope	In progress. First draft report discussed Oct-2003. Revised draft discussed Feb-2005. Finalization targeted by Aug-2006.
Global Availability of Information on Pesticides (2001-022-1-600)	Unsworth	In progress. New project leader has implemented action plan and established coordination with FAO/IAEA-INFOCRIS. Web-based application for launch by Aug-2006.

ONGOING PROJECTS (con.)

Project Name (No.)	*Project Leader*	*Status*
A Critical Compendium of Pesticide Physical-Chemical Data (2003-011-3-600) (Joint project with ACD)	Wauchope Shaw	Running into difficulties identifying appropriate number of volunteers, and has proposed merger effort with project 2001-022-1-600 (Agro Info).
Crop Protection Chemistry in Latin America: Harmonized Approaches (2003-013-1)	Carazo	In progress. Successful workshop of ~250 attendees held in San Jose, Costa Rica during Feb-2005. Several follow-up activities are in progress including i) a follow-up training for gov't regulators on product chemistry and specification, ii) translation of a key textbook into Spanish (nearing completion), and iii) translation of the IUPAC pesticide glossary into Spanish (pending project 2004-002-1).
Glossary of Terms Related to Pesticides (2004-002-1)	Stephenson	In progress as a revision of 1996 1st edition. Targeted for publication by Aug-2006. Has established cooperation with FAO-IAEA, WHO and OECD for mutual recognition.
Simplified methods & tools for env. risk assessment of pesticides (2004-011-1)	Parker	In progress. First draft working model evaluated by project team Feb-2005. Draft report by Dec-2006.

TECHNOLOGY TRANSFER ACTIVITES

- "**IUPAC-CICA-MAG International Workshop on Crop Protection Chemistry in Latin America"**, San Jose, Costa Rica, 14-17 February 2005. *This workshop was organized around the theme "Harmonized Approaches for Environmental Assessment and Regulation", and was co-organized with the University of Costa Rica, the Costa Rica Ministry of Agriculture, and CropLife Latin America. Around 250 participants attended, and a number of IUPAC projects, lecturers, posters, and session chairs were involved including DCE DC members McConnell, Racke, Senesi, and Wauchope. Major topics at the meeting included environmental fate, analysis and monitoring, food residues and international trade, and regulation of pesticides. Based on priorities established at the workshop, several follow-up activities are being undertaken.*
- "**11th IUPAC International Congress of Pesticide Chemistry**", Kobe, Japan, 6-11 August 2006. *Co-organized by the Pesticide Science Society of Japan. More than 1200 scientists and regulatory officials are anticipated to attend this Congress, which is held every 4 years. In addition to an estimated 600 posters, a number of plenary sessions and workshops will also be organized. The 3rd Circular and final program details may be found on the Congress web site at: http://www.iupac2006.jtbcom.co.jp/*
- **"12th IUPAC International Congress of Pesticide Chemistry"**, Melbourne, Australia, 4-8 July 2010. *Co-organized by the Royal Australian Chemical Institute. Decided during December 2005 based on selection as a preferred option versus a USA location proposed by the American Chemical Society. 1st Circular to be distributed at the August 2006 Congress in Kobe, Japan.*

- "**IUPAC-ICAMA International Workshop on Crop Protection Chemistry in Asia"**, Beijing, China, October or November, 2007. *This workshop is planned to occur as part of proposed project 2006-017-2. Co-organization has been agreed with the Institute for the Control of Agrochemicals – Ministry of Agriculture (IACAMA). Additional co-sponsors are currently being sought including the China Agricultural University and CropLife China. Would be organized around the theme "Harmonized Approaches for Safety Evaluation, Regulation, and Protection of Trade".*

Respectfully submitted,

Ken Racke, Chairman

Appendix V

IUPAC
Environmental Chemistry Division
Chemistry of Environmental Compartments Sub-Committee

Status Report and Minutes of the Sub-Committee Meeting
June, 2006

Partipants: H. Garelick, L. McConnell, O. Hertel, L. Klasinc, W. Kördel, M. Dassenakis, W. Peijnenburg and Y. Shevah.

Summary. The Sub-committee promotes projects on the chemistry of atmosphere, soil and water and maintains links with the industry and other international bodies. Members of the sub-committee coordinate projects and represent the Division in interdivisional committees and other organizations. In line with the "Project Driven System" adopted by IUPAC, ongoing activity includes degradation, bio-availability and accumulation of chemicals, remote monitoring, codes of practice, modeling of processes and preparation of glossaries. In total, members of the sub-committee direct and coordinate 4 projects and contribute to other projects promoted by DCE and other divisions. Publications in press in PAC and elsewhere amount to eight publications (2003 – 2006).

1. Work Plan

List of Ongoing Projects 2006

1	2	3	4	5	6	7
	DCE No.	**Area**	**Project Title**	**Project Leader**	**Sub-Committee Coordinator**	**Status Aug 2006**
	2001-026-1-600 1	Soil	Use of reference soils for testing fates & effects of chemicals	W. Kördel	Kördel	Ongoing, to be completed in 2nd half of 2006
	20031-017-1-600 3	Water	Valuation of arsenic Contamination in Water & Remediation Options	H. Garelik	Shevah	Ongoing, due for expansion as IUPAC-Scope Project, 2007
	2003-030-1-600 4	Atm.	Glossary of Terms on Atmospheric Chemistry (revision)	T. Cvitas	Klasinc	Ongoing, due for completion 2007
	2003-058-1-600 5	Atm	Air Pollution & Human Exposure Modelling	O. Hertel	Klasinc	Ongoing, due for completion 2007

Contribution to other Divisional and Interdivisional Projects

DCE No.	**Area**	**Project Title**	**Project Leader**	**Sub-Committee Contributor**	**Status Aug 2005**

1999-041-1-600 1	Soil	Bio-availability of xenobiotics in soil	N. Katayama	Peijnen-burg	Final Version, ready for publication
2001-024-2-600 2	Env.	Impact of transgenic crops on the environmental impact of agrochemicals	Kleter	Shevah	Ongoing, papers presented in W/S in Seoul, 2004 & Costa Rica, 2005, Japan 2006
2004-017-1-500 3	Env	Standardization of Analytical Approaches and Analytical Capacity-Building in Africa	Benson	Shevah	Ongoing

New Projects Under consideration

DCE No.	Area	Project Title	Project Leader	Sub-Committee Contgributorr	Status Aug 2005
2006-011 1	Env	Critical review of Available Methods to Predict VOC Emission Potentials for Pesticide Formulation.	McConnel	McConnel	Approved by DCE June 2006
2006-015 2	Env.	Implications of altered residues of pesticides applied on transgenic crops for Food and Food safety	Kleter	Shevah	Under review
3	Water	Coasta Waters monitoring by Remote Sensing Techniques	Dassenakis	Dassena-kis	In preparation
4	Env	Preparation of a workshops, Int. Congress in Torino 2007	Project Leaders	Shevah	In preparation

2. On-going Projects

2001-026-1-600. Use of reference soils for testing fates and effects of chemicals *(Project Leader: W. Kördel).* The project focuses on the selection of reference soils which could serve to harmonize the testing of the fate and effects of chemicals by OECD, ASTM, ISO, EU and others. Six German soils were characterized and reported. The report includes:

- Selection criteria for reference matrices
  Examples for selection and handling (e.g. the German RefeSol project)
- Definitions/terminology
- Quality assurance/ quality control
- Outlook and perspectives

The findings were discussed in a two days meeting that was held in ISPRA/Italy in October 2005 and a draft report is being prepared for review by the task group members.

The Final Report will be ready for publication in PAC by the end of 2006. A poster will be presented at the IUPAC International Congress of Pesticide Chemistry, Kobe, Japan and a special session is planned, as part of the IUPAC Congress in Torino, 2007.

2003-017-2-600. Remediation Technologies for Removal of Arsenic from Water and Wastewater (Project leaders H. Garelick). The project addresses the problem of naturally and anthropogenic occurrence of arsenic in drinking water, affecting the health of millions of people in the developed and third world countries, alike, and the removal effectiveness of available industrial and home made technologies, used for routine treatment of large water works and water points for isolated homestead. The project is conducted in collaboration with CHEMRAWN and WHO and other agencies, involving a large number of experts from the various continents. The first Working Group meeting was held in Bath, UK in Oct. 2004 and a poster was presented in Beijing, August 2005, while particular contributions were presented in December 2005 at the International Workshop on Arsenic Contamination and Safe Water, Dhaka Bangladesh. The various contributions, in a draft form, are being circulated and are available on the Middlesex University website, http://www.mdx.ac.uk/www/sprc/handbooks/HG/IUPAC.htm**.** A special session for discussion and dissemination of results is planned as part of the IUPAC Congress in Torino, 2007.

The possibility of expanding the scope of work in collaboration with SCOPE is being explored to include:

- Option for the field analysis of arsenic
- The interface between geology and biota- food intake
- Health Risk assessment
- Low cost remediation technologies.

2003-030-1-600. ***Glossary of Atmospheric Chemistry*** (Project Leader, T. Cvitas). *A* Glossary of atmospheric chemistry definitions is being prepared, classified into: 1. Physical quantities and units, 2. Measurements, analytical methods and abatement strategies, 3. Chemical and physical constituents in atmospheric processes, 4. Theoretical aspects and 5. Instrumentation in atmospheric chemistry. The Glossary follows the guidelines the Meteorological and Geophysical Society and ICTNS and coordinated with Gold Book project. The glossary is still under preparation and a meeting of the contributors is scheduled in 2006 - 2007, to coincide with the completion of the first draft of the Glossary.

2003-058-1-600. ***Air pollution models in environmental management and assessment*** (Project Leader, O. Hertel). The aim of the project, co funded by a private foundation in Denmark and the Danish NERI, is a critical review of available models and their suitability for research and environmental management, assessing their applicability and the relevance of the input data. The project is to be published by Kluwer/Springer Press, in 2007. To date, a revision of chapters and contributors is underway and templates for the setup of the chapters have been distributed among the authors. The draft will be ready by the end of 2006 for external review in 2007.

3. Joint Projects

1999-041-1-600. Bio-Availability Project. (Project Leader Dr. Arata, Crop Protection Sub-committee***).*** The bio-availability of chemicals in soil environment, as a result of dissolution, diffusion, dispersion, convection and uptake is being reviewed, in order to assess the

efficacy/toxicity of chemicals. The review is almost completed and the manuscript will be ready for external review latter in 1006. The results will be presented in at the IUPAC International Congress of Pesticide Chemistry, Kobe, Japan, 2006.

2001-024-2-600. Impact of transgenic crops on the use of agrochemicals and the environment (Project leader Kleter**,** Crop Protection Sub-committee***).*** The project was initiated in 2002 to assess the environmental impact of cultivation of transgenic crops, covering a broad range of environmental issues, such as water pollution by pesticides and preservation of biodiversity and contributing to public perception issues surrounding the controversial use of genetically modified crops. Progress made was summarized in papers presented in Workshops in Korea and Costa Rica and a special session will be held at the IUPAC International Congress of Pesticide Chemistry, Kobe, Japan, 2006.

2004-017-1-500. ***Standardization of Analytical Approaches and Analytical Capacity-Building in Africa*** (Project Leader, Benson). An Inter Divisional project in cooperation with the Analytical Chemistry Division, the International Organization for Chemical Sciences in Development (IOCD) and US National Academy of Science. The project aims to build regional analytical laboratory capabilities in relation to monitoring and enforcement of international trade standards. A fact finding mission visited Uganda in October 2005 to assess the Uganda laboratories capability in performing analytical tests, as required for export products and the findings were presented to IOCD Executive Committee in April 2006. The Team is collaborating with the Ugandan Government and expect to extend it activity ti Kenya.

Extraction and Fractionation Methods for Risk Assessment Related to Trace Metals, Metalloids and Hazardous Organic Compounds in Terrestrial Environments. Fedotov.
The aim of this proposal is to review the progress made by different authors and institutions (e.g. in the framework of EC Standards, Measurement and Testing Programme) and provide recommendations on the use of batch and flow-through leaching/extraction methods for appropriate risk assessment of organic pollutants in soils, sediments, and sludges of different type and origin. Specific objectives will include:

- critical evaluation of recent developments in the field of harmonization of leaching tests;
- assessing bioavailability of hazardous organic compounds in contaminated soils, sediments, and sludges;
- evaluation of the performance of flow-through leaching methods

Recommendations for accurate and comprehensive studies on the current or potential mobility/ bioavailability of hazardous compounds in solid phase–soil solution systems.
The project is under review.

4. Proposed Projects

Airborne and Remote Monitoring of the Enviroment. Remote sensing techniques for real time control of water, soil and air. This topic was covered by Project No. 1999/142/660/00 **(**Dekker et al.). After a good start and the organisation of a session, as part of the Alliance for Marine Remote Sensing Workshop on Freshwater and Near-Shore Remote Sensing, Nova Scotia October 2001, the project was suspended. The topic is of importance and relevant and a new project is proposed focusing on the monitoring of coastal water of the Mediterranean Sea.

In-situ treatment of polluted soil and water with emphasis on the use of genetically engineered microorganisms. The project was included in 2001 – 2003 work plan, highlighted

in Chemistry International as one of the innovative projects, but the project has not advanced beyond the initial stages. The topic is important and relevant and therefore further attempts are being made to initiate the project.

Additional Topics:

- Waste incineration versus land and water disposal
- Tropical forest and animal emissions
- Antibiotics discharge in water, soil and air
- Atmospheric Ammonium Nitrogen
- Environmental consequences of stabilized waste residues for fertilizer

5. Other Activities

Interdivisional Committee on Nomenclature and Symbols ICTNS. The Division is presented in this committee by Y. Shevah. Summary of ICTNS activity is appended.

6. Reports and Publications (2003 – 2006)

1. Egli, H., Manos Dassenakis, Hemda Garelick, René van Grieken, WJGM Peijnenburg, Leo Klasinc, Werner Kördel, Nick Priest & Tanja Tavares (2003). Minimum requirements for reporting analytical data for environmental samples.
2. Lintelmann, J, L. Shore, A. Wenzel, F. Dorobek, A. Katayama and N. Kurihara (2003) Oestrogenic Chemicals in the Environment. PAC
3. Van Grieken, R. & Shevah, Y. (2003). Proceedings of the International Symposium on Atmospheric Deposition and impacts on ecosystems, with particular reference to the Mid-East" Tel Aviv. Univ. of Antwerpen Publication.
4. Shevah Y. 2004. Wastewater Treatment and Reuse for Irrigation. In Encyclopedia of Life Support Systems (EOLSS), Developed under the auspices of the UNESCO, EOLSS Publishers, Oxford, UK, [http://www.eolss.net].
5. Slanina, S.; Zhang, Y. 2004. "Aerosols: Connection between Regional Climate Change and Air Quality." *Pure Appl. Chem.* 76:1241-1253.
6. Zhang, Y.; Zhu, X.; Slanina, S.; Shao, M.; Zeng, L.; Hu, M.; Bergin, M.; Salmon, L (2004). "Aerosol Pollution in Some Chinese Cities." *Pure Appl. Chem.* 76:1227-1239.
7. Werner Kördel and Michael Klein 2006. Prediction of Leaching and Groundwater Contamination by Pesticides. *Pure Appl. Chem.* 78:1081-1090.
8. Werner Kördel et al. 2006. Solute movement in Soils. *Pure Appl. Chem.* In press.

7. Sub-committee Members:

Yehuda Shevah (Chair, AM), Willie Peijnenburg (TM, Division Secretary), Hemda Garelick (TM), Laura McConnell (TM), Ole Hertel (TM), Werner Koerdel (AM), Leo Klasinc (NR), Tania Tavares (NR), M. Dassenakis (NR), Alexander Sabljic, Yuanhang Zhang (NR)

Members and supporters are requested to approach colleagues, working group members and others, to join the sub-committee.

Appendix VI

Status of Project Expenses vs. Approved Budget as of 28 April 2006
(Expressed in USD)

Through 28 April 2006	Actual	Budget	Over/ (Budget)	% of Budget Spent	Planned End Date*
600-Environmental		-			
**Wiley-Div VI Senesi/VanLeeuwen	-	1,826	(1,826)	0%	Not applicable
1999-014-2-600 Dekker	5,124	5,000	124	102%	31-Dec-2003
1999-041-1-600 Katayama	4,408	5,500	(1,092)	80%	31-Dec-2003
2001-022-1-600 Unsworth	2,969	6,000	(3,031)	49%	1-Apr-2004
2001-023-1-600 Felsot	4,634	6,000	(1,366)	77%	1-Apr-2004
2001-024-2-600 Kleter	13,332	20,000	(6,668)	67%	1-Jul-2005
2001-026-1-600 Koerdel	3,490	6,000	(2,510)	58%	1-Sep-2004
2001-039-1-600 Wauchope	9,989	10,000	(11)	100%	1-Apr-2004
2002-013-2-600 Cantrill	-	5,000	(5,000)	0%	31-Dec-2004
2003-011-3-600 Wauchope	5,639	15,000	(9,361)	38%	31-Dec-2006
2003-013-1-600 Carazo	18,200	29,000	(10,800)	63%	30-Jun-2006
2003-014-2-600 Senesi	-	14,900	(14,900)	0%	1-Jun-2006
2003-017-2-600 Garelick	9,997	10,000	(3)	100%	1-Jun-2006
2003-030-1-600 Cvitas	570	5,000	(4,430)	11%	1-Feb-2005
2003-058-1-600 Hertel	-	5,000	(5,000)	0%	31-Dec-2006
2004-002-1-600 Stephenson	1,584	4,000	(2,416)	40%	31-Dec-2006
2004-003-3-600 Violante	5,850	6,500	(650)	90%	31-Dec-2006
2004-011-1-600 Parker	1,536	5,000	(3,464)	31%	1-Jun-2007
2004-015-1-600 Wilkinson	11,000	11,000	-	100%	1-Jun-2006
2005-024-2-600 Anklam	1,520	2,000	(480)	76%	31-Dec-2006

*Note: These dates were arbitrarily assigned by the IUPAC Secretariat based on the original proposal and need to be corrected in the IUPAC system to reflect the most recent estimates.

**These are royalties from sales of the Wiley book series available for assignment to new book projects with Wiley by the Division Committee.