

**IUPAC**  
**Division on Chemistry and the Environment**  
**COMMISSION ON SOIL AND WATER CHEMISTRY (VI.3)**

**MINUTES OF COMMISSION MEETING**

TEL AVIV, ISRAEL, JUNE 3-5, 2000

**ATTENDANCE:**

- Dr. Y. Shevah	Chairman	Israel
- Dr. W. Peijnenburg	Secretary	Netherlands
- Dr. A. Sabljic	Titular Member	Croatia
- Dr. W. Kördel	Associate Member	Germany
- Dr. H. Egli	Associate Member	Switzerland
- Dr. H. Garelick	Associate Member	United Kingdom
- Dr. Mendelbaum	Associate Member	Israel
- Prof. Dr. W. Klein	Corresponding Member	Germany

**1. GENERAL**

In conjunction to this Commission meeting, an International Symposium on "Atmospheric Deposition and Impact on Ecosystem, with particular reference to the Mid-East" was organized. This was done jointly with the IUPAC Commission on Atmospheric Chemistry (VI.2). In addition to the regular Commission meeting, a joint meetings with representatives from Commissions VI. 2 was organized.

During the meeting, the emphasis was on the status of the projects that are currently on the agenda of the Commission. Thereupon, new initiatives were taken for future actions within the working field of soil and water chemistry. Once again the importance of finishing projects was stressed, as well as the necessity to anticipate in the new Project driven structure of IUPAC, and find ways of implementing new projects within this new structure. As all Commissions will be dissolved after 2001, and as limited funds will be available it is important to look for other types of cooperation.

Altogether, there are six on-going projects, whereas two potential projects were identified. Task groups were composed for each project, in line with the "Project Driven Structure" adopted by IUPAC. Three draft reports were discussed. Comments will be included in the draft and the reports will be offered for publication in 2000.

A special request was put forward by Prof. Klein, Chairman of the Division on Chemistry and the Environment: to consider the possibilities of joining the green chemistry activities within the Division of Organic Chemistry. Especially, the objectives listed should be checked to see where the Commission on Soil and Water Chemistry could be involved. Members are requested to, if possible, attend the conference and to submit abstracts.

**2. MINUTES OF THE LAST MEETING**

The minutes were endorsed. No comments received. All actions agreed upon will be discussed later on in the meeting. With regard to cooperation with Commission vi.1 on Quality standards (Dr. Shevah will represent the Soil and Water Chemistry Commission in this project), it was decided that Dr. Shevah will contact Dr. Turner (**Action: Dr. Shevah**).

**3. COMMISSION MEMBERSHIP**

Chairman:	Dr. Y. Shevah (Israel)
Secretary:	Dr. W. Peijnenburg (Netherlands)
Titular Member:	Dr. A. Sabljic (Croatia)
Associate Members:	Dr. W. Kördel (Germany)
	Dr. J. Lintelmann (Germany)
	Dr. H. Egli (Switzerland)

National Representatives: Dr. H. Garelich (United Kingdom)  
Dr. Dassenakis (Greece)  
Dr. B.M. Misra (India)  
Dr. A. Rodrigues de Aquino (Brazil)  
Dr. P. Schejbal (Czech Republic)  
Dr. G. Becher (Norway)

At present there is one vacancy for Titular Membership (period: 2000-2001) During the Commission Meeting it was decided that it will be proposed to the IUPAC Bureau to nominate Dr. H. Garelick as the new Titular Member (Note: By now, the Bureau has approved this nomination).

Active participation of all Commission members is essential to achieve optimal performance of the Commission. In view of this it was decided that those members that were not able to attend the Commission meeting will receive all necessary information on the activities of the Commission to enable them to get updated on the status of the projects.

Members of the Commission are kindly requested to re-state their interest in the Commission work and their willingness to contribute from their own sphere to the new projects to be undertaken by Task Groups. **(Action: All members of the Commission)**

## 4. OVERVIEW OF ONGOING PROJECTS

### 4.1 Commission Projects

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Number: 630/24/95

Title: **Solute movement in soils with potential rapid by-pass movement**

Co-ordinator(s): Dr. Kördel, Dr. Egli

Objective: Preferential flow in silt sand clay containing soils can significantly contribute to groundwater contamination and pollution of surface waters by the effluent of draining systems. Although the importance of rapid by-pass movement has not been demonstrated, the prediction and modeling of this process is still not fully understood, in particular the dependence on soil type and climatic conditions. As several groups are working in this field a workshop will be organized to discuss the present knowledge. It will also be possible to provide some advice in monitoring and sampling water and soil to determine contamination movement in the environment.

Progress: Dr. Kördel and Dr. Egli have collected literature on this topic. This yielded 590 publications. After data reduction, a draft manuscript will be prepared, according to the original set-up of this project. The draft is foreseen to be ready in September/October 2000 **(Action: Dr. Kördel/Dr. Egli)**. In addition to preparing a report, it will be proposed to organize a session on the topic of preferential flow during the pesticide workshop 2002 (Basel). Dr. Egli will contact the chairman of the organization committee **(Action: Dr. Egli)**.

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Number: 630/25/95

Title: **Recommendations on modeling lifetime and degradability of organic compounds in soil and water systems**

Co-ordinator(s): Dr. A. Sabljic

Remarks: Joint project with the Commission on Atmospheric Chemistry (VI.2)  
Within the Commission on water Chemistry, Dr. Peijnenburg will provide additional assistance. Phase 2 of this project has started in 2000 and will finish in 2001. A draft report on phase 1 of the project was prepared by Dr. Sabljic. This is now being circulated among Commission members. Commission members are requested to send their comments on the draft directly to Dr. Sabljic before the end of August **(Action: all Commission members)**. Dr. Sabljic and Dr. Peijnenburg will incorporate all comments in the final document and will then submit this document to PAC **(Action: Dr. Sabljic, Dr. Peijnenburg)**.

In the second phase of the project, the emphasis will be on developing sub-models.

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**Code of Practice**

Number: 630/18/93

Title: **Minimal requirements for reporting Analytical Data for Environmental Samples**

Co-ordinator: Dr. H. Egli

Completion date: 2001

The objective of this project is to provide guidance as to the information that is to be incorporated when reporting analytical data, in order to be able to properly interpret the data reported.

A first project proposal has been prepared by Dr. Egli. This proposal was discussed during the meeting. The following recommendations were put forward:

- Include existing guidelines as recommendation.
- Propose that information on both negative and positive controls should be added.
- Also, information on the reference materials should be added.
- Change the title of the project into "Minimal requirements for reporting environmental data".
- Recommend that the same philosophy for sampling of all environmental compartments should be implemented.

On the basis of the discussion and the suggestions brought forward, Dr. Egli will prepare the formal project proposal (**Action: Dr. Egli**). Commission members who will contribute to the project will be identified and are requested to submit their contributions before the end of 2000 (**Action: Commission Members**).

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## 4.2 Task Groups

### Task Group on Endocrine Disruptors Compounds

Number: 660/26/97

Title: **Endocrine disruptors in the environment**

Co-ordinator of the Task Group (s): Dr. J. Lintelmann

Completion date: 2000

In accordance with the new IUAPC structure, a Task Group was formed in 1998 within the Commission headed by Dr. J. Lintelmann. The Task Group includes: Dr. A. Katayama and Dr. N. Kurihara (VI4), Dr. A. Wenzel (Fraunhofer Institute), Dr. Dobrobek, Novartis and Dr. Shore, Israel.

Objective: During the past years strong evidence has accumulated that humans and wildlife species have suffered adverse health consequences resulting from exposure to natural and anthropogenic substances called 'endocrine disruptors'. Besides compounds mimicking estrogens there are also substances exhibiting anti-estrogenic, androgenic or anti-androgenic characteristics. Exposition to this kind of substances has probably far-reaching consequences, which will strongly influence future generations. Thus, official authorities as well as public, industry and various research groups show increasing interest in endocrine disruptors.

Progress: A second draft report was circulated prior to the meeting. All members are requested to send their comments on the report directly to Dr. Lintelmann before the end of July (**Action: All members**). During the meeting it was discussed that at present the report lacks an evaluation, references should be rearranged, introduction should be focussed and the title needs to be changed. It was agreed that Dr. Peijnenburg will send the a draft version to the editor of PAC, to ask for his advice on how to proceed with the manuscript (**Action: Dr. Peijnenburg**). If the editor of PAC advises that PAC is not the best suited journal for this document, then "Environmental Toxicological Reviews" might be a good alternative.

### New Task Groups

The following task groups were established:

1. **In-situ treatment of polluted soil and water with emphasis on the use of genetically engineered microorganisms.** This task group has been approved by IUPAC. The project leader, Dr. R. Mendelbaum, gave a presentation on the task group during the Commission meeting. Amongst others, the focus will be on molecular aspects of pesticide degradation. Dr. Mendelbaum will prepare a project plan for the task group (**Action: Dr. Mendelbaum**). It

was also agreed upon during that in a later stage of the project, a connection with the IUPAC Commission on Biotechnology will be established. Commission vi.4 will contribute, and has agreed to assign a scientist.

- 2. Airborne and Remote Monitoring of Water Quality: Evaluation of remote sensing techniques for real time control of water quality in surface water bodies.** Proposed project leader: Dr. A. Dekker. This Task Group has also received approval of IUPAC. Dr. Shevah will contact Dr. Dekker, asking for the commitment of Dr. Dekker to this Task Group (**Action: Dr. Shevah**).

In addition to these Task Groups, a proposal was put forward for establishing a Task Group on the following topic:

**Biosensors for the monitoring Environmental Pollutants: Evaluation of newly developed biosensors for monitoring the soil and water environment.**

No approval has yet been obtained for this Task Group.

#### **4.3 COOPERATION WITH OTHER COMMISSIONS**

During the Commission meeting, a joint meeting with representatives of the Commission on Atmospheric Chemistry was held. The following items were discussed:

- 1 - International Symposium on Atmospheric deposition and impact on Ecosystems, with particular reference to the Med-East. This symposium is organized jointly with the Commission meeting. It was decided that Dr. Shevah and Dr. Tavares will prepare a report on the workshop. The report will be offered for publication in Chemistry International.
- 2 - In addition, possible participation of the Soil and Water Chemistry in future Symposia of the Atmospheric Chemistry Commission, was discussed. Further information will be provided by the Atmospheric Chemistry Commission, after which the Soil and Water Chemistry Commission will decide on active involvement. Proposed themes of the symposia: "Atmospheric particles affecting human health" (South Africa, 2002), "Impact of different fuel types on urban air quality (Brazil, 2003).

#### **5. NEWLY IDENTIFIED PROJECTS**

**Soil Quality and Soil Conservation.** The rationale behind methods used in deriving soil quality criteria, and definition of contaminated soils is to be studied. A project proposal was prepared by Dr. Kördel. Given the present work load of the Commission it was decided that Dr. Kördel will prepare an extensive outline by the end of October. The outline will be sent to Commission members, asking for inclusion of new ideas. Commission members will be asked to respond before the end of November (**Action: Dr. Kördel, Commission members**).

**Reference soils.** A similar procedure as agreed upon for the previous project, will be followed for this proposal (**Action: Dr. Kördel, Commission members**).

**Quality of Chemical Data in Databases.** This topic has a potential interest within a broader context. Dr. Peijnenburg will prepare a proposal for a Task Group on this topic and will initiate interdivisional co-operation including contributions from Commissions vi.1 and vi.2 (**Action: Dr. Peijnenburg**).

#### **Divisional and Interdivisional Cooperation**

Interdivisional cooperation will be sought for two projects:

1. Quality Chemical Data and Reporting Practices (**Action: Dr. Peijnenburg**).
2. Biosensors (**Action: Dr. Shevah**).

#### **7. PUBLICATIONS**

Grebenyuk, V.D., Linkov, N.A. and V.M. Linkov (1998). Removal of Ni and Cu ions from aqueous solutions by means of a hybrid electrosorption/electrodialysis process. Water SA, 24, 123-127.

Sabljić, A. and Peijnenburg WJM (Eds) (1998). Proceedings of the Environmental Degradation Processes, PAC, July, 1998.

Sabljić, A. and WJM. Peijnenburg (1998). Environmental Degradation Processes. Some Reflections. In Proceedings, Pellston Conference on Environmental Persistence. SETAC, Fairmont Hot Springs, Canada.

Shevah, Y, & M. Waldman (1998). Bioremediation Research in Israel. In Sikdar, S.K. & Irvine, R. L. (Eds). Bioremediation Technologies. Techtonic Pub. Co., Basel.

M. Dassenakis, M. (1999). National environmental issues. Chemistry International

Misra, B.M. (1999). National environmental issues. Chemistry International

Sabljić, A. and Peijnenburg WJM (Eds) (1999). Proceedings of the Environmental Degradation Processes. Chemosphere, Special Edition, January, 1999.

Shevah, Y, & M. Waldman (1999). Research and Development for Wastewater reuse. In Juanico & Dor (Eds). Reservoirs for Wastewater Storage and Reuse. Springer -Verlag, Berlin, Heidelberg.

Waldman, M. & Y Shevah, (2000). Biological Diversity, An Overview. Kluwer academic publishers. In Press.

Shevah, Y, & R. Van Grieken (2000). International Symposium on Atmospheric Deposition and impacts on ecosystems, with particular reference to the Mid-East" Tel Aviv, June 4-5, 2000. Chemistry International (In Press).

Sabljić, A. and WJM. Peijnenburg (Eds) (2000). Environmental Degradation Processes, Highlights and Recommendations (in preparation).

Shevah, Y, & R. Van Grieken(Eds) (2000). Proceedings of the International Symposium on Atmospheric Deposition and impacts on ecosystems, with particular reference to the Mid-East" Tel Aviv, June 4-5, 2000. (in preparation).

## **8. ANY OTHER BUSINESS**

### **Position paper "Soil and Water Chemistry: Environmental Issues and Research Needs".**

Dr. Shevah prepared this paper. The paper is intended to provide justification for future activities of the Soil and Water Chemistry Commission. All members are requested to submit their comments and add information as the soil part is not yet covered, before the end of July 2000 (**Action: All members**).

### **Green Chemistry.**

A symposium will be organized in January 2001 in New Delhi – India. Members are requested to put forward suggestions for involvement of the Soil and Water Chemistry Commission in the symposium (**Action: All members**).

**Preparation and Submission of Projects Progress Reports.** As already agreed during former meetings of the Commission, all project co-ordinators are requested to send in quarterly reports on the progress of projects. Please use email and ask for confirmation of receipt. (**Action: all members whenever appropriate**).

**WEB site.** Information on the Commission activities can be found at the IUPAC Web Site ([www.iupac.org](http://www.iupac.org)), including the current projects that have to be up-dated. Team leaders are requested to check the web site and submit information to update of the Commission Web-site (**Action: Team Leaders**).

## **9. NEXT MEETING - Brisbane, June 29 – July 4, 2001**

The next meeting of the Soil and Water Chemistry Commission will be held during the next General Assembly of IUPAC: June/July 2001, Brisbane – Australia.

Commission members are requested to submit additional ideas for the discussion in the next meeting (**Action: all members**).

Dr.Ir. W. Peijnenburg  
Secretary IUPAC Commission on Soil and Water Chemistry