

**Division VI - Chemistry and the Environment (DCE)**  
**Annual Meeting**  
**Istanbul, Turkey, 9-10 August 2013**  
**Draft Minutes**

**August 9, 2013**

**1. Opening, welcome, members attending, apologies, introductions of observers**

Titular, Associate and National Representative Members Present:

Dr Laura McConnell (LM) - Division President and meeting chair

Prof Nicola Senesi (NS) - Past Division President

Prof Willie Peijnenburg (WP) – Division Secretary

Prof Nadia Kandile (NK), Prof Hemda Garelick (HG); Prof Petr Fedotov (PF); Prof Sirpa Herve (SH); Prof Manos Dassenakis (MD); Dr Christoph Von Holst (CV); Prof Ewa Cukrowska (EC); Dr. Soon Ting-Kueh (ST); Prof Leo Klasinc; Dr Stefka Tepavicharova.

Guests (including Young Observers):

Dr Bradley Miller; Dr Deborah Aruguete; Dr Kathryn Wills; Dr Paweena Kreunin; Prof Datin; Dr Zuriati Zukaria; Dr Elias Matos; Dr Ng Soo Boon; Dr Yeun-Mun Choo; Prof Rafael Luque; Dr Sherine Obare; Dr Lee Wan Lim; Dr Simon Lewis; Prof Keiji Tanaka; Dr Alina M. Balu; Dr Saleh Khamlich;

**The meeting was called to order at 9:15 AM and attendees made introductions. The agenda was approved as provided.**

**2. Approval of Minutes Division Meeting 25-26 May 2012, Berlin**

The draft minutes of the 2012 face-to-face Division meeting as well as the minutes of the telecall of December 2012 were approved without any objection.

**3. Overview of IUPAC, Division Status, Strategic Plan Goals and Plans for 2-Day Meeting**

A brief overview of IUPAC activities was presented by LM, including:

- Organisational scheme of IUPAC;
- IUPAC Standing Committees;
- Division Mission Statement: “The IUPAC Division of Chemistry and the Environment (DCE) is recognised as a leading organization on authoritative critical reviews, interactive workshops, and outreach to the scientific community and the public on emerging topics in environmental and food chemistry”;
- Division-sponsored Workshops;
- Division structure;
- Budget;
- Funding options – role of IUPAC Project Committee

The slides of the presentation are included as a separate file (**Appendix 1**).

**4. 2014-2015 Biennium Election Report**

- The procedure applied was explained by the chair of the election committee (NS);
- The new vice-president and president-elect for the next biennium will be Prof. Petr Fedotov;
- Prof. Hemda Garelick was elected as Division secretary;
- Seven Titular Members were elected;
- In addition, six new Associate Members were elected out of 12 candidates, as well as 10 National Representatives;
- The new composition of the Division is provided in **Appendix 2**.

**5. Brief Review of Current Project Status**

LM provided an overview of the current projects. The list is provided in **Appendix 3**.

**All project leaders, who did not do so, are requested to submit a progress report on their project.**

**Action: LM and WP will review the list to overview projects requiring reports to Fabienne Meyers.**

## **6. Subcommittee and committee representative reports**

### 6.1. Subcommittees

- a. Biophysical/chemical aspects of environmental processes – Senesi;  
A new series of books is under preparation: three volumes have been published, the fourth book is on nanoparticles. A proposal on the chemical aspects of pathogens in the environment is being prepared. Prof. Senesi will hand over the leadership of the subcommittee to Prof. Baoshan Xing (new Division Member as of 2014);
- b. Crop protection – McConnell  
This too is quite an active group. The next IUPAC congress on pesticide chemistry will be organised next year in San Francisco;
- c. Environmental compartments – Garelick  
The subcommittee focuses on soil, water and air, with emphasis on soil and water. A few projects are ongoing (see website for further details), and see below for new ideas to be developed within the subcommittee;
- d. Food Chemistry – von Holst. The subcommittee is looking for new projects and additional subcommittee members are needed. In addition, a proposal has been launched to create a new subcommittee on mycotoxins and phycotoxins

6.2. CCE – Garelick – This committee deals with educational chemistry, various activities were initiated within the framework of the International Year of Chemistry. Activities from within Belgium (Greenlights for girls) and Asia will be promoted within CCE (**Action: HG**). Manos Dassenakis will take over the role of Hemda as Div. VI representative. During a short meeting with representatives of CCE, **Nadia and Bradley** expressed their interest in participating in the CCE project on the design of international standards for chemical education (**Action: Hemda, Nadia, Bradley to follow up**).

6.3. COCI – Committee on Chemical Industry. At the moment, Division VI is not represented. **Hemda will represent Div. VI.**

6.4. ICTNS – Fedotov. Unfortunately, no close cooperation was established between the standing committee and the Division. No response was received from ICTNS following a few requests from Dr. Fedotov. The committee reviews only contributions to PAC. However, when nomenclature and terms as used in reports need to be reviewed, the draft report can be sent to Dr. Fedotov for initial review (**Action: WP to send a message to project leaders informing them of this opportunity**). **Update: PF has contacted ICTNS and they have agreed to review drafts of Division VI publications prior to submission.**

6.5. Pure and Applied Chemistry – Wine. Paul will not be a TM anymore, so a new representative is needed. **Heinz Rüdél will be asked to take over as an editorial board member on behalf of Div. VI (Action: LM).**

6.6. CHEMRAWN – Kandile. Three proposals for conference have been brought forward: green catalysis in industrial use, solid waste management, water (Chemistry in waste treatment). The water conference was planned to be organised in the Middle East, but will be shifted to another region. **Action: Nadia will circulate the proposals to the division members.** Nadia will continue as the Div. VI representative in the new biennium.

6.7. New UNESCO-PhosAGRO-IUPAC Project – Garelick. Project needs approval of bureau before it will start. Basically, IUPAC is requested to review proposals. The overall aim is to facilitate chemistry more broadly.

6.8. Committee on Chemistry Research Funding – McConnell. The aim is on developing a new generation of catalysts in which rare earths are substituted by earth abundant elements. Also, there is an environmental component.

## **7. Partially Funded Proposals**

2011-060-1 (Rüdél) - Appropriate consideration of bioavailability of metals/metal compounds in the aquatic environment.

This project was listed as being in review by Fabienne Meyer, despite the fact that we funded this project. The project was granted \$ 4,850. The project leader has indicated that no additional funding is needed. It was decided not to change the budget granted. **Action: LM will inform Fabienne – Complete 8/21/13.**

### **8. Proposals awaiting final decision from PC – Review of Proposal Rankings from Division members**

2013-019-2 (Unsworth) - World Crop Protection Chemistry Institute: Developing Global Leaders for Research, Regulation and Stewardship in the 21st Century.

A request for funding of \$ 11,000 was obtained. All external reviews were positive. It was decided to fund the project with a budget of \$ 4,000.

2013-023-1 (Temple) - Toxicology in the Classroom – II.

CCE is willing to assist on this project. This is a continuation of an earlier project. The main comment received was that the project description is too vague. It was decided not to fund the project.

2013-024-1 (Molyneux) - Unequivocal Identification of Compounds with Biological Activity of Significance in Food Chemistry.

This might be a suited project for the Project Committee as the topic is cross-divisional; it is recommended to include representatives of the Divisions on Chemistry and Human Health and Analytical Chemistry in the project team. Requested funding is \$ 5,000. The proposal was highly ranked, it was decided to fund the project with \$ 4,000 **provided that members from other divisions are added to the project team.**

2013-029-1 (Kleter) – Inventory of developments in the field of RNAi-based pesticides and potential needs for international harmonization of regulatory safety requirements.

It was recommended to include additional expertise in the international project team (like molecular biology). External and internal reviews were positive. It was decided that revision of the proposal is required. It was further decided to fund the project, **provided a revision is prepared.** The budget request is \$ 6,000, it was decided to earmark \$ 4,000.

2013-033-1 (Letcher) - Chemical Processes for a Sustainable Future.

It was remarked that the title is very general and the project proposed is very ambitious. The project should be shared with other Divisions, as well as CHERMRAWN and COCI (COCI will provide \$ 1,000). Budget requested is \$ 6,500.

No external reviews were received. Internal reviewers were mixed: some reviewers found the proposal very/too ambitious; on the other hand, it was found that Dr. Letcher is highly effective. Another issue brought forward is that a large fraction of the authors proposed is from the UK (12 out of 26) and more international input was judged to be needed. It was decided not to fund the project at this stage and a revision will be requested.

**Action: LM and WP to finalize comments on each proposal to submit to Fabienne Meyers**

### **9. New or Draft Proposals for Discussion**

New proposals prepared, include:

1 – Chemical speciation of anthropogenic nanomaterials. Issues of interest are environmental fate and effects of nanomaterials. The draft proposal will be modified, amongst others to include other Divisions/Committees (especially inorganic and CCE).

2 – Investigation of the effect of climate change on eutrophication in the marine environment (Dr. Manos Dassenakis). The proposal is in preparation and is expected to be submitted in 2014.

### **10. Brainstorm on New Project Ideas**

An extensive brainstorm was organised to solicit new ideas for future projects and to subsequently assign volunteers to transform the ideas into project proposals. Ideas brought forward include:

Topic	Champion	Interested Members
Threats to micro-environments, with micro-environment being sensitive but very important environment that are under heavy stress, including biogeochemical	Manos Dassenakis	Stefka Tepavicharova

aspects and impacts of loss of micro-environments.		
Application of geochemistry to the design of practical technologies”, like MnO <sub>2</sub> in water oxidation, zeolites. Also the interactions between the Division and toxicologists are of future interest. Reaction systems without any solvents (mechanochemistry)	Deborah Aruguete	Sherine O’Bare, Ewa Cukrowska, Leo Klasinc, Alina Balu, Rafa Luque
Development of Novel Passive Samplers for Contaminant Exposure for Organic and Inorganics	Sirpa Herve	Ewa Cukrowska, Laura McConnell, Nadia Kandile, Lee Wah Lim
Environmental Impacts of Mining Operations; Human exposure of dust from mining tailings – via food; Risk assessment of indoor and outdoor dust – submicron particles	Ewa Cukrowska	Petr Fedotov, Elias Matos, Manos Dassenakis
Critical review of analytical aspects related to the measurement of indoor and outdoor dust in the assessment of exposure to contaminants: submicron- and nanoparticles. (Potential inter-divisional project)	Petr Fedotov	Hemda Garelick, Laura McConnell, Leo Klasinc, Ewa Cukrowska
Side-effects/pitfalls of the geo-engineering approaches to address climate change. Needs to be narrowed	Bradley Miller or Deborah Aruguete	
Environmental impacts of food waste reduction and recycling – food security.	Rafa Luque	Nadia Kandile, Hemda Garelick, Alina Balu, Christoph von Holst, Petr Fedotov
Emerging Contaminants, Environmental Contaminant Database, Long-term environmental effects of the replacement of CFCs.	Kathryn Wills	Laura McConnell, Hemda Garelick, Sherine O’Bare, Nadia Kandile, Keiji Tanaka, Willie Peijnenburg, Heinz Ruedel
Contamination due to demolishing non-functioning pc-components in developing countries	Hemda Garelick	Deborah Aruguete, Rafa Luque, Bradley Miller
Novel environmental applications of Graphene. Potential applications for water purification	Saleh Khamlich	
Chemical speciation of anthropogenic nanomaterials. Potential Inter-divisional project with CCE. Draft proposal in hand.	Sherine O’Bare	Rafa Luque
The influence of the global warming effect in the increasing development of coastal eutrophication events	Manos Dassenakis	Fani Sakellariadou
Chemical Speciation in Fresh, Saline and Hyper-Saline waters. Inter-divisional project with Analytical	Stefka Tepavicharova	Manos Dassenakis

### 11. Annual Meeting Discussion

It is attempted to combine the 2014-meeting with a conference in order to save on expenses. Possibilities include: Basel (SETAC), Lausanne (Environmental analytical chemistry and food safety), Valladolid (Renewable Resources and Biorefineries), San Francisco (ACS conference), Istanbul (EUChems). The various

pro's en con's were discussed and based on the discussions it was decided to select San Francisco as the 1<sup>st</sup> option (following the ACS-meeting: 10-14 august 2014).

**12. Interdivisional meetings – Div. 7 (human health) and Div. 3 (organic chemistry)**

1. Human health division – Toxicology subcommittee

- It was agreed to share ideas and exchange information on current projects and project proposals, proposals will be shared ahead of time in order to allow for mutual involvement.
- The toxicology subcommittee wants to contribute to the Molyneux project that is funded by Division VI.
- A food chemistry initiative will be initiated with Div. III and Div. VII. The possibility of establishing an inter-divisional subcommittee on food chemistry was discussed and will be further investigated **(Action: LM to follow-up with Division presidents)**.

It was discussed afterwards that inter-divisional projects might be the most suited way forward, at least for the short term.

2. Division 3 (organic chemistry)

- Various possible cooperation were discussed. A request was brought forward to further discuss the topic of green chemistry between 3 members of Div. 3 and Div. 6, and Div. VI is requested to exchange ideas on green chemistry.

Divisional meeting was closed at 5.30 PM, all Division Member present as well as the guests that could be welcomed, were gratefully thanked for their contributions to this successful meeting.

**Minutes submitted by Willie Peijnenburg, Secretary Division VI**

## **Appendices**

### **Appendix 1**

Copy of introductory slides presented by Division President Laura McConnell (separate file).

### **Appendix 2**

Composition of the IUPAC Division on Chemistry and the Environment in the biennium 2014-2015.

### **Appendix 3**

List of current division VI-project

**Appendix 1**

Copy of introductory slides presented by Division President Laura McConnell.

This appendix is available as a separate pdf.

**Appendix 2**

Composition of the IUPAC Division on Chemistry and the Environment in the biennium 2014-2015.

<b>Name</b>	<b>Proposed Status</b>	<b>Proposed Term</b>	<b>NAO</b>
Dr. Laura McConnell	TM – President	2012-2015	United States
Dr. Petr Fedotov	TM – Vice President	2014-2015	Russia
Prof. Hemda Garelick	TM – Secretary	2014-2017	United Kingdom
Prof. Manos Dassenakis	TM	2014-2015	Greece
Dr. Philippe Garrigues	TM	2014-2015	France
Prof. Guiban Jiang	TM	2014-2015	China/Beijing
Prof. Rai Kookana	TM	2014-2015	Australia
Dr. Heinz Rüdell	TM	2014-2015	Germany
Prof. John B. Unsworth	TM	2014-2015	United Kingdom
Prof. Baoshan Xing	TM	2014-2015	United States
Prof. María J. Gonzalez Carlos	AM	2014-2015	Spain
Prof. Sirpa H. Herve	AM	2014-2015	Finland
Prof. Nadia G. Kandile	AM	2014-2015	Egypt
Dr. Gijs A. Kleter	AM	2014-2015	Netherlands
Dr. Nelly Mañay	AM	2014-2015	Uruguay
Prof. Roberto Terzano	AM	2014-2015	Italy
Prof. Jasim Uddin Ahmad	NR	2014-2015	Bangladesh
Dr. Stefka Tepavitcharova	NR	2014-2015	Bulgaria
Dr. Chris Swyngedouw	NR	2014-2015	Canada
Prof. Yong-Chien Ling	NR	2014-2015	China/Taipei
Dr. Pradeep Kumar	NR	2014-2015	India
Prof. Vlasta Piližota	NR	2014-2015	Croatia
Prof. Doo Soo Chung	NR	2014-2015	Korea



<b>Name</b>	<b>Proposed Status</b>	<b>Proposed Term</b>	<b>NAO</b>
Prof. Zuriati Zakaria	NR	2014-2015	Malaysia
Prof. Ana Aguiar-Ricardo	NR	2014-2015	Portugal
Dr. Supawan Tantayanon	NR	2014-2015	Thailand
	10 TMs, 6 AMs, 10 NRs		

AM = Associate Member

NR = National Representative

TM = Titular Member

### Appendix 3 - Current Division VI Projects

2005-024- 2-600 (von Holst)	Establishment of guidelines for validation of qualitative and semi-quantitative (screening) methods by collaborative trial: a harmonized protocol	<b>Project Completed:</b> Macarthur R., von Holst C.: A protocol for the validation of qualitative methods of detection. <i>Anal. Methods</i> , 2012, 4, 2744-2754. Article planned for CI.
2006-015- 3-600 (Kleter)	Evaluation of food and feed safety implications of (altered) residues of pesticides applied on transgenic (GM) crops	<b>Project Completed.</b> Paper published: Kleter, G.A., Unsworth, J.B. and Harris C.A.(2011) The impact of altered herbicide residues in transgenic herbicide-resistant crops on standard setting for herbicide residues, <i>Pest Management Science</i> 67 1193 – 1210. See also Kleter, G.A., Unsworth, J.B. and Harris C.A.(2012), <i>New Food Magazine</i> 15 19-22.
2008-003- 3-600 (Shevah)	Regional Drinking Water Quality Assessment in the Near East (Palestinian Authority, Jordan, and Israel) An Overview and Perspective	<b>Project On-Going</b> The Environment Workshop and the IUPAC Project Session were held as part of the Malta Conferences Foundation: UNESCO HQ in Paris, France: Dec 4 - 9, 2011. Presentation of the project at IUPAC World Chemistry Congress, Puerto Rico, 30/7 - 7/8, 2011. Presentation of the project at the 9th "EUROPE- INTERNATIONAL NETWORK OF BASIN ORGANIZATIONS (INBO) 2011" international conference and General Assembly of the Mediterranean Network of Basin Organizations (MENBO), OPORTO (PORTUGAL), 27 - 30 SEPTEMBER 2011. Circulation of the Draft Final Report to the Working Group members, September 3, 2011). Working Group meeting and discussion at UNESCO, Paris, December 4-9, 2011. Finalization of the Project Final Report, in progress. Preparation for the Final workshop (initial steps). Initiation of downstream projects attracting additional funding (initial steps). An Article for publication in CI: submitted January, 28, 2012. A Chapter to be published in a book entitled "Comprehensive Water Quality and Purification" Elsevier, 2012. Final workshop planned November 2013 in Malta.
2008-011- 2-600 (Parker)	Development of a Pesticide Ecological Risk Assessment and Training Module	<b>Project Completed.</b> Continuation of earlier project (2004-011-1) to advance a training initiative with national regulatory authorities for the IUPAC project-related materials that have been developed. Project completed. Article submitted to <i>Chemistry International</i> for publication.
2008-041- 1-600 (Unsworth)	Global Availability of Information on Agrochemicals	<b>Projected completed.</b> Continuation of earlier project (2001-022-1) to provide for website maintenance and expansion. The website is up and running ( <a href="http://pesticides.iupac.org">http://pesticides.iupac.org</a> ) some problems were experienced with attacks on the website but these have been overcome. It is now necessary to maintain and add to the website to keep it up to date.
2009-048- 1-600 (Koerdel)	Guidance for substance-related environmental monitoring strategies regarding soil and surface water	<b>Project completed:</b> Kördel, W. Garelick, H., Gawlik, B.M., Kandile, N.G., Peijnenburg, Rüdél, H. Substance-related environmental monitoring strategies regarding soil, ground-water and subsurface water – an overview. <i>Environmental Science and Pollution Research</i> , 2013, 20, 2810-2827
2010-018- 2-600 (Chen)	Quantitative Review and Analysis of Pesticide Sorption and Its Effect on Degradation in Relation to Soil and Climate	Initialized Jan 2011 – <b>Project ongoing.</b> This project evolved from Quantitative Review of Pesticide Environmental Fate Parameters and (2010-018-1-600) following comments from the DCE. Task group has been formed, 1 <sup>st</sup> task group

		meeting held in August 2011. Publication in development.
2010-028-3-600 (Sakellar)	Management of maritime pollutants in shipping and commercial European ports based on relevant physical and biogeochemical environmental parameter	Initialized Sept 2011 <b>Project On-going</b> – Initial workshop was held in Barcelona Spain in February 2013.
2010-056-1-600: (Unsworth)	Global Framework for Implementing Consistent Ecological Risk Assessment of Pesticides for Sustainable Agriculture	Initialized Sept 2011 – <b>Largely Completed</b> - Final workshop publications have been developed and will be distributed.
2010-060-1-600: (Unsworth)	Maintaining and Ensuring the Pesticides Properties Database (PPDB)	<b>Project On-going</b> - New Task Group Chairman appointed. Project has been re-directed to support the maintenance of Agrochemicals website. With IUPAC Server coming on line. We will have better control over this website. .
2011-019-1-600: (Xing)	Engineered Nanoparticles and the Environment: Physicochemical Processes and Biototoxicity	<b>Project On-going</b> Book Publication planned for late 2014-early 2015.
2011-023-2-600 (Harris)	Critical review of approaches to dietary risk assessment for pesticide	<b>Somewhat stalled</b> - Initialized January 2012 – Task group members identified.
2011-061-1-600 (Chen)	Advancement in Product Development, Safety Evaluation and Risk-Based Regulation of Crop Protection Chemistry in the Asian Pacific region	<b>Completed</b> : Workshop conducted in September 2012, Beijing China.
2012-002-1-600 (Ruedel)	Appropriate consideration of bioavailability of metals/metal compounds in the aquatic environment	<b>Project On-going</b> - Initialized January 2012 – Review comments relayed to Project task chair.
2012-017-1-600 (Dallos)	Latin American Pesticide Residue Workshop Food And Environment	<b>Project Completed</b> – Conference was held this year and workshop was conducted.
2012-018-5-600 Parker	Development of IUPAC Good Modeling Practice (GMP) Guidelines for Pesticide Aquatic Ecological Exposure Assessment and Risk Management	<b>Project just funded.</b>
2012-019-1-600 Unsworth	The Importance of Chemistry in Maintaining a Secure Food Supply	<b>Project On-going</b>
2012-020-3-600 Kookana	Guiding principles to facilitate a harmonized ecological risk assessment framework for nano-pesticides in the environment	<b>Project On-Going</b> – Initial workshop held in York, UK
2012-028-2-600 Klasinc	Bibliometric Analysis of Research on Secondary Organic Aerosols (SOA) in Atmospheric and Environmental Journal	<b>Project Completed</b> – Paper Published
2012-034-1-600 Garelick	Environmental Chemistry, Green and Sustainable Chemistry	<b>Project On-going</b>
2012-049-1-600 Taft	Clean Energy through Chemistry	