

**IUPAC DIVISION VII  
Chemistry and Human Health**

**Minutes of Division Meeting August 25 & 26, 2018  
Boston**

**Location:**

Boston University  
Department of Chemistry  
Metcalf Center for Science and Engineering, Center for Integrated Life Sciences & Engineering  
(CILSE) 106C  
590 Commonwealth Ave  
Boston, MA 02215

## **DAY 1 (Saturday):**

### **1. Welcome and introductions (RC)**

Professor Mark Grinstaff, Boston University, College of Engineering and Dr. Fabienne Meyers who hosted our meeting welcomed the Division.

RC thanked their hosts for their hospitality, welcomed the special guest Richard Hartshorn, IUPAC Secretary General, and the Division VII members.

Each of the attendees introduced himself/herself.

*In attendance:* Richard Hartshorn (guest, IUPAC Secretary General), Rita Cornelis, Tom Perun, Helle Moller-Johannessen, Vladimir Gubala, Vincenzo Abbate, Adriano Andricopulo, Gerd Schnorrenberg, Geok Bee Teh, Balu Balasubramanian, Brandon C. Presley, Néstor Carballeira, Xiaohong Fang, Hassan Ibrahim, Chulbom Lee, John Duffus.

*On teleconference:* Mike Schwenk, Linda Johnston and Ganesan (partly)

### **2. Approval of Agenda**

The agenda was approved without dissenting vote.

### **3. Approval of Minutes of Previous Meeting (Sao Paulo)**

The minutes of the Division VII meeting, held during the General Assembly in Sao Paulo on July 8 & 9, 2017 were approved without dissenting vote.

### **4. Report of the Division President (RC)**

RC reported on the Bureau meeting held in Bratislava, 6-8 April 2018. She highlighted the accomplishments of the Division and the ongoing projects. She prompted all members to think about new projects: books, reports, glossaries, workshops, etc. RC also appealed to the attendees to spread the news about IUPAC and to recruit new IUPAC members.

The celebration of the 100-year anniversary of the founding of IUPAC in Paris in 1918 was briefly discussed. This encompasses between others the IUPAC Congress and General Assembly, Paris, 5-12 July 2019. More details are given on the site: <https://iupac.org/tag/iupac100/>.

All National Chemical Societies are expected to participate in the celebration.

The General Assembly in Paris should be the opportunity to initiate interdivisional projects.

### **5. Update on Division membership (RC)**

The front page of these minutes lists the Division VII members for the biennium 2018-2019. Urban Forsum resigned as AM. The Division honored his dedicated work within Division VII during the past decades.

Chulbom Lee, the NR from South Korea, remarked that his name is missing on the list of NRs on the webpage of Division VII. VG will ask Fabienne to correct this.

## **6. Finances of the Division (RC)**

RC gave detailed budget figures provided by Lynn Soby on July 31, 2018. The total budget of Division VII for the biennium 2018 & 2019 amounts to \$ 52.300.

70% are allocated for projects; any remaining funds i.e. not allocated during the ongoing biennium until the end of 2019, return to the IUPAC treasury.

30% are allocated for operations, i.e. the meeting of the Division in Boston in 2018.

The IUPAC Secretariat will pay for the participation of the Division at the General Assembly in Paris.

Lynn Soby sends an update of the actuals and the remaining balance at the end of each month.

Division VII has three subcommittees. Each is entitled to a third of the project money. However, when project money remains unclaimed by a subcommittee in the course of 2019, it will be attributed to interesting projects of any of the subcommittees.

The division discussed how to deal with projects that started for example in 2003 and are still not completed by 2018. The consensus was that projects that repeatedly exceed the self-imposed deadline and do not submit any report should cease. Glossaries, however, are given more flexibility as a consensus between project members and editors might be hard to achieve. All glossaries published in PAC are available online free of charge. Many organizations (e.g. lawyers, international associations, etc.) use them. Glossaries need, however, constant updating, which is a cumbersome task.

The Division evaluated all ongoing projects.

## **7. Structure and competency of the subcommittees, its chair and membership**

The subcommittees of Division VII are

- Drug Discovery and Development (DDD: Chair - Gerd Schnorrenberg)
- Toxicity and Risk Assessment (TRA: Chair – John Duffus)
- Nomenclature Properties and Units (NPU: Chair – Helle Johannessen).
- Public relations and Elections (PRE: Chair – Tom Perun)

John Duffus informed everyone that members are effectively self-elected. It is up to the chair to coordinate the membership.

Richard Hartshorn (IUPAC secretary general) encouraged the Division to review its rules and operating procedures.

Tom Perun presented a summary of the Operating Plan of Division VII from the previous years. Members discussed the responsibilities of subcommittees and the division. The present

version is given in Addendum 1. **All members are requested to comment and review the operating procedures prior to December 1, 2018 and send their comments to RC, HMJ, TP and VG.**

## 8. Updates from Subcommittees

- A. Drug Discovery and Development (DDD) (GS)
- B. Nomenclature for Properties and Units (NPU) (HMJ)  
A report from the meetings in the Steering Committee on NPU
- C. Toxicology and Risk Assessment (TRA) (JD)
- D. Public Relations and Elections (PRE) (TP)

### A. Drug Discovery and Development (DDD)

Gerd Schnorrenberg provided a report on the status of the projects.

Vincenzo Abbate gave an update on project 2014-019-1-700 related to ‘the emerging problem of novel psychoactive substances’. VA mentioned that Brandon Presley and he were actively promoting their recent publications in PAC through social media and LinkedIn. In less than a month, they attracted a sizable attention of more than 500 views and 100 reads.

GS also provided an update on the progress of Janos Fischer’s books on drug discovery, which was very impressive! The division also discussed the IUPAC Richter Prize in Medicinal Chemistry, funded by the Gedeon Richter Company. The prize is \$10000. The selection committee, chaired by Janos Fischer, awarded the 2018 Richter Prize to Prof. Peter D. J. Grootenhuis in recognition of his outstanding creative contributions to the invention, discovery, and development of the medicine that transformed the treatment of cystic fibrosis.

### B. Nomenclature for Properties and Units (NPU)

Helle Johannessen provided her progress report. The subcommittee agreed on frequent online meetings. They want a new policy for proposing projects.

HMJ reported that projects 2004-023-1-700 and 2013-009-5-700 are finished.

Project 2010-035-2-700 will be finished by the end of 2018.

Project 2014-017-1-700 is very comprehensive and requires additional resources. Its membership needs new recruitments. The chair of the project is Daniel Karlsson and the original members Robert Flatman, Urban Forsum, Helle Møller Johannessen and Ulla Magdal Petersen. Urban Forsum resigned.

Project 2016-044-2-700 is under development – the content is finalized and the final draft is in the editing stage.

Membership of the SC-NPU: Helle provided a comprehensive overview of the turnover in membership. There was one vacancy in membership, which was supposed to be filled by IUPAC. Richard Hartshorn suggested that we should fill this vacancy – Helle should perhaps make a recommendation to the Bureau how this could be done. NPU agreed on a long-term

strategy at their latest face-to-face meeting in Athens in 2017. This is called the NPU Strategic Plan 2020. The new strategic plan will include a coordination between NPU and SNOMED CT.

### C. Subcommittee on Toxicology and Risk Assessment (TRA)

John Duffus updated on the progress of the TRA projects.

Project 2009-034-2-700: Risk Assessment of Effects of Cadmium on Human Health. was completed. The IUPAC Technical Report was published in PAC, vol 90, 2018.

Project 2013-006-1: "Preparation of a consolidated and extended IUPAC Glossary of Terms Used in Toxicology". was completed, the book (765 pages) 'Comprehensive Glossary of Terms Used in Toxicology' was published by the Royal Society of Chemistry in September 2017. Authors: Duffus, J., Templeton, Douglas M., and Schwenk, Michael,

Project 2013-007-1-700: Recent Advances in Nanoparticles and Colloidal Systems and their Impact on Human Health. Chair: Vladimir Gubala was successfully completed with the following publications.

Engineered nanomaterials and human health:

Part 1. Preparation, functionalization and characterization (IUPAC Technical Report). Vladimir Gubala, Linda J. Johnston, Ziwei Liu, Harald Krug, Colin J. Moore, Christopher K. Ober, Michael Schwenk, Michel Vert, Pure and Applied Chemistry, Published Online: DOI <https://doi.org/10.1515/pac-2017-0101>

Part 2. Applications and nanotoxicology (IUPAC Technical Report). Vladimir Gubala, Linda J. Johnston, Ziwei Liu, Harald Krug, Colin J. Moore, Christopher K. Ober, Michael Schwenk, Michel Vert, Published PAC Online: DOI <https://doi.org/10.1515/pac-2017-0102>

The Division criticized the lengthy process of PAC reviews. Richard Hartshorn pointed out that the fact that the process is so long and includes so many reviewers is positive. It makes the Technical Reports very reliable.

There were two more successfully completed projects:

Workshop organized by Vladimir Gubala and Serge Mignani in Canterbury, UK, 2014

Project 2014-013-1-700: "Nanomaterials in Human Health: Trends and Future".

A report of the workshop was published in Chemistry International and online :

Nanomaterials and Human Health: The Trends and Future, Vladimir Gubala

DOI <https://doi.org/10.1515/ci-2015-0125>, or

<https://www.degruyter.com/view/j/ci.2015.37.issue-1/ci-2015-0125/ci-2015-0125.xml>

Project 2014-019-1-700 "The emerging problem of Novel Psychoactive Substances, Chair: Vincenzo Abbate

This project has been partially completed and resulted in one article (article 1) that has already been published in PAC. Article 2, on synthetic cathinones, has just begun as part II project, therefore the project has been extended until end of 2019. The published paper is available on the internet.

The Ongoing Challenge of Novel Psychoactive Drugs of Abuse. Part I. Synthetic Cannabinoids (IUPAC Technical Report) V. Abbate, M. Schwenk, B. C. Presley, and N. Uchiyama  
DOI <https://www.degruyter.com/downloadpdf/j/pac.ahead-of-print/pac-2017-0605/pac-2017-0605.pdf>

Further on there is the ongoing Project 2017-012-1-700: “Glossary of terms in molecular toxicology”. Chair: Douglas Templeton. This project is well on its way. The members now have a full list of terms, have drafted definitions and Doug is currently editing them. They have scheduled a meeting in Tübingen over the first week of November to go through the list and revise definitions that need clarification or other amendment. Thereafter, they shall each check the glossary independently and, following agreement by email, shall finalize it for submission to PAC. Once approved for publication in PAC, they shall start work on adding the new glossary to the “Comprehensive Glossary” while also updating its current contents. They shall propose to RSC that they might issue the newly completed list for publication as a second edition of the 2017 “Comprehensive Glossary”

Doug Templeton and John Duffus reported to be involved in another glossary project (molecular terms in toxicology), which is currently on track and it will be completed in the near future.

#### D. Subcommittee on Public relations and Election (TP)

Tom Perun reported on Public Relations and Elections subcommittee. The Nominating Committee for the election occurring in 2019 needs to be established now. Tom is the Chair of this committee and asked one volunteer from the Division Committee to be on this committee with him. He said he would need at least three other people from outside the DC. Richard Hartshorn added that one of the roles of the Nominating Committee was to review the nominated candidates from NAOs. Therefore, the Division’s Nominating Committee will have to provide a description of the skills required from the NAO candidates. In addition, Richard said that IUPAC was looking for wider demographic diversity and young talents. Richard also noted that all TM positions are available for election, not just the TM positions that are finishing their 2+2-year cycle. Even TMs that have served 2 years will be placed on the ballot and they will have to be voted to remain for the additional 2 years.

**Additional details about the activities of the Subcommittees, as given by their Chairs, are given on the site:**

[https://www.dropbox.com/sh/ew1rvooy3am1oxt/AABEbyR93M\\_YzThy4O\\_JiyGia?dl=0](https://www.dropbox.com/sh/ew1rvooy3am1oxt/AABEbyR93M_YzThy4O_JiyGia?dl=0)

## 9. New Projects

### Approved

Several new projects have been approved.

Project 2018-003-1-FSC, co-sponsored by Division VII. Néstor Carballeira updated the audience on the workshop ‘2nd International Conference in Global Challenges in Neglected Tropical Diseases’ that was held in San Juan, Puerto Rico. (see below at agenda point 11 for details).

Project 2018-006-1-700, Medicinal Chemistry in Drug Discovery and Development, Chair Balu Balasubramanian: more details on the program are available on <http://mcaddi.com>

Project 2017-035-2-600, Human health risk consideration of nano-enabled pesticides for industry and regulators, Chair: Linda Johnston and Rai Kookana, joint project of Division VII and IV (Environmental division). The overall objective of this project is to assist industry, contract research organizations (CROs) and regulators in determining an acceptable and practicable approach for generating the data relevant to human health risk assessment required for the registration of nano-enabled pesticide formulations.

Project 2017-040-1 ‘Chemistry in the classroom’: Vladimir Gubala gave us an update on this recent project. The first, pilot interactive videos should be available by the time of the GA in Paris in 2019.

### **Potential Submissions**

Gerd Schnorrenberg mentioned two additional projects. Both will be submitted in due course.

## **10. Social Media + Updates for IUPAC Division Website (VG)**

**Objective:** Using Social Media to raise awareness of Division VII projects/work/outputs  
Updates on IUPAC webpage – information from members

The IUPAC webpage improved substantially a few years ago. There are, however, still shortcomings, especially in the field of ‘education’. There is a complete lack of videos that might be used by young people to understand various concepts in chemistry. These are due to be a reliable source of information (endorsed by IUPAC).

Richard Hartshorn advised Vladimir Gubala to request Lynn Soby, prior to the Paris 2019 GA, the necessary training to allow him to update the IUPAC webpage of Division VII.

At the GA in Paris, July 2019, the Division Members should be able to identify areas in Chemistry and Human Health that would be interesting for the public. The main objective would be to communicate some of the achievements of Division VII through social media streaming to the Layman. Richard Hartshorn was supportive of this idea, as it would provide good public visibility to the Division and to IUPAC.

### **DAY 2 (Sunday):**

## **11. Meetings attended by members**

Report on the Bureau meeting 2018 in Bratislava (RH & RC)

- IUPAC 100 (RC)
- IYPT (International Year Periodic Table) (RC)
- Meetings attended by VG

Richard Hartshorn provided a report on the bureau meeting in Bratislava in 2018. He reminded everyone that 2019 is the year of IUPAC 100. The IUPAC Congress in Paris (5 – 12 July 2019) is likely be the biggest ever. All members were encouraged to promote it to their colleagues. The scientific program is available on the site [IUPAC.org/event/iupac-2019-paris-france](http://IUPAC.org/event/iupac-2019-paris-france). Evenings are dedicated to IUPAC 100 celebrations, such as the Young Scientist event, Gala, Reception in City Hall. There is a probability that the French president E. Macron might attend one of the events. There is a good support from the industry.

Richard Hartshorn provided a detailed report on how the Council envisages recalculating the National Subscriptions according to a new model called 'SAMSI'. All details are available in the shared folder.

[https://www.dropbox.com/sh/ew1rvooy3am1oxt/AABEbyR93M\\_YzThy4O\\_JiyGia?dl=0](https://www.dropbox.com/sh/ew1rvooy3am1oxt/AABEbyR93M_YzThy4O_JiyGia?dl=0)

IUPAC needs more interactions with industry - Richard Hartshorn appealed on Div VII members to engage with small and with big multinational companies to contribute to IUPAC.

Richard Hartshorn also presented a slide about the prospects of IUPAC throughout its second Century (available through the shared folder): IUPAC has to be Findable, Accessible, Interoperable and Reusable – four cornerstones how IUPAC must operate with the data it generates. IUPAC also needs to build relationships with other unions

From Canada, through the teleconference facility, Linda Johnston updated the audience in Boston on her cooperation with the project 2017-005-3-500 'Analytical Chemistry of nanomaterials – critical evaluation, chaired by Jan Labuda of Division V.

Rita Cornelis provided additional information about IUPAC100. IUPAC started in Paris in 1919, which is why the centennial will be in Paris.

IUPAC, UNESCO and numerous sponsors celebrate in 2019 The International Year of Periodic Table (IYPT). VISIT [www.iypt2019.org](http://www.iypt2019.org)

Anyone can follow IUPAC100 through Instagram and Twitter. IUPAC has started some 'Global Activities' (see link given at the end)

Néstor Carballeira reported on the conference 'Global Challenges in Neglected Tropical Diseases in San Juan, Puerto Rico. The program included twenty-nine oral presentations and twenty-three posters. Additional funding by Amgen allowed several young students to be present.

IUPAC (Division VII and CHEMRAWN) also provided funds to award three outstanding young scientists from developing countries. The meeting attracted quite a lot of attention from the media. Néstor Carballeira gave several speeches and interviews for radio, TV and other media. A special issue for Pure and Applied Chemistry (PAC), based on the meeting, is in preparation.

## 12. Interdivisional Activities

- CCE (John Duffus)
- COCI (Janos Fisher/not present in Boston)
- ICTNS (Rita Cornelis)
- PAC (Rita Cornelis)
- ISMC (Vladimir Gubala)

CCE – Sharon Bee Teh reported that she was invited to CCE because CCE is planning a conference in Malaysia and it is expected that Sharon will be involved in the meeting.

COCI – Tom Perun suggested that Gerd Schnorrenberg or Balu Balasubramanian could become members of COCI.

ICTNS – Rita Cornelis suggested that she could participate in this interdivisional activity on condition to be invited.

PAC – Rita Cornelis reported that she was never invited to their meetings but that she is a regular reviewer of PAC articles.

ISMC – Vladimir Gubala reported that he became the chair of ISMC as of January 2018 and that he is in the process of preparing several projects for submission. The next planned ISMC meeting is October 3, 2018

Vincenzo Abbate commented that perhaps we could include interactions with other divisions, such as Environment, Education, Organic etc.

### **13. Cooperation with Other Organizations**

This list needs to be updated to reflect the current members of Division VII

- ACS (Tom Perun)
- AFMC (previously Reuben Jih-Ru Hwu)
- EFMC (Janos Fisher/not present in Boston )
- ICSU (previously Anders Kallner)
- IFCC (Helle Moller-Johannessen)
- IUTOX (John Duffus)
- NIH (John Duffus)
- RSC (Joh Duffus)
- SOT (John Duffus)
- USNC (Tom Perun)
- WHO, WHO-IPCS (John Duffus)
- OPCW (Mike Schwenk)
- WADA (Vincenzo Abbate)

ACS – Tom Perun reported on his interaction with the Medicinal Division of ACS.

Richard Hartshorn mentioned that the Chinese Chemical Society (CCS) is a very large organization, with which we should try to establish closer links. Xiaohong Fang intends to engage with CCS. CCS is associated to Chinese Academy of Sciences, which offices are very close to that of Xiaohong. The relationship between ACS and CCS is very close.

AFMC, EFMC and ICSU are to be removed from this list. Previous members who are no longer part of Division VII represented these organizations.

IFCC has a good interaction with our divisions through Helle Moller-Johannessen.

IUTOX, NIH, RSC, SOT – John Duffus reported that he had limited interaction with those organizations. The reason was that all organizations are undergoing structural changes and financial reorganizations. Xiaohong suggested that she might contact her friend at IUTOX.

USNC – sponsoring organization for IUPAC. Tom Perun has been appointed a member of USNC. Meetings are scheduled twice a year during the ACS meetings. Richard Hartshorn was speaking at the USNC assembly in 2018.

WHO, WHO-IPCS – no report this time.

OPCW- Mike Schwenk, who has a close cooperation with OPCW, will represent our Division VII at the meeting in The Hague from 21 – 23 November 2018. He will also attend the IUPAC-OPCW side function on 21 November and join the Science Advisory Board that will be holding a Science for Diplomats briefing on 23 November.

WADA (World Anti-doping Agency): Vincenzo Abbate suggested a cooperation between WADA and our Division. Contacts will be made in due course.

#### **14. Conferences of Interest for IUPAC Sponsorship; Application for IUPAC Endorsement**

Sharon (Geok Bee Teh) has distributed leaflets about ACCC7, for which she will be requesting IUPAC endorsement. Logos will be on the website; Sharon reserved seven places for Division VII delegates. Registration will be waived for members of Division VII if they will be presenting their work. There is a need for a ‘nanotoxicity’ related talk at the conference.

#### **15. Any additional business**

Chemistry International (CI) used to be sent to TMs as a hard copy. CI ceased its printed edition and is now in digital form. Members were invited to become electronic subscribers. Any member that has not received such an invitation should contact Fabienne Meyers to become a subscriber.

Tom Perun mentioned that at the Medicinal Chemistry meeting of the ACS, there were new elections to the ‘Hall of Fame’. Tom obtained the nomination and election of Paul Erhardt and Yvonne C. Martin, two former members from our Division.

#### **16. Next Division meeting**

General Assembly, 5 - 12 July 2019, Paris, France

The Division VII meeting will take place on the 6th and 7th of July, which is Saturday and Sunday just before the start of the IUPAC Chemistry Congress. Details about the room, agenda and timetable will be available in the early months of 2019.

Additional information of this Division VII meeting, including pictures, can be read on [https://www.dropbox.com/sh/ew1rvooy3am1oxt/AABEbyR93M\\_YzThy4O\\_JiyGia?dl=0](https://www.dropbox.com/sh/ew1rvooy3am1oxt/AABEbyR93M_YzThy4O_JiyGia?dl=0)