



International Union of Pure and Applied Chemistry

A member of the International Council of Scientific Unions

Analytical Chemistry Division: Commission on Radiochemistry and Nuclear Techniques
(V.7)

Meeting of members of IUPAC Commission
V.7 during the IUPAC General Assembly in
Berlin, August 8-10, 1999

MINUTES OF THE MEETING

Attendance (9 persons): V. Kolotov (Chairman), P. Benes (Secretary), J.V. Kratz, H. Nakahara, Carol H. Collins, P. Vitorge, A.R. Ware, N.E. Holden, B.F. Myasoedov

Excuses: H.W. Gaggeler, Chifang Chai, S.N. Yates, E. Steinnes

Absent: A. Vertes, In Soon Chan, J.M. Peixoto de Cabral, A. Plonka, A.V.R. Reddy, J.R. Gancedo Ruiz, C. Testa

1. The meeting was opened on August 8 at 9 a.m. by the Chairman of the Commission, V. Kolotov, who welcomed present members and expressed his regret that many members could not participate at the meeting.
2. Commission discussed the agenda of the meeting whose proposal had been distributed prior to and at the beginning of the meeting. After several amendments had been proposed, the following agenda was accepted:

A g e n d a

1. Approval of the last meeting minutes
2. Coming changes in IUPAC policy, preservation of radiochemistry and nuclear techniques in Division V
3. Analysis of the Commission activity for the recent years
4. Discussion with Prof. F. Ingmann, President of Analytical Chemistry Division
5. Review of the current status of the running projects
6. Initiation of new projects
7. Information on the Working Party in Nuclear and Radiochemistry
8. „Hot spots“ in the field of radiochemistry and nuclear techniques, discussion of the main directions of the Commission activity for the coming two years
9. Recommendations to Division for potential needed activities in the field of radiochemistry and nuclear techniques
10. Commission membership
11. Even year meeting

3. Approval of the last meeting minutes

Minutes of the meeting of members of Commission V.7 in Marianske Lazne (Czech Republic, April 18, 1998) were approved in the form presented at the Commission web site <http://www.geokhi.ru/~iupacV7>.

4. Report of the Chairman on coming changes in IUPAC policy, with special reference to the preservation of Radiochemistry and Nuclear Techniques within IUPAC

The discussion was introduced by V. Kolotov and P. Benes, who recalled for the participants the discussions in IUPAC and to the documents/information issued by IUPAC on these topics:

- Report to the Executive Committee by the Strategy Development and Implementation Committee (SDIC) + Attachments
- Report of the IUPAC Analytical Chemistry Division President, Secretary, and Commission Chairs from their meeting in Idstein, Germany, 17-18 January, 1998
- Summary of Actions Taken on the Report by the SDIC - IUPAC Executive Committee, 4 April, 1998
- IUPAC, 125 Meeting of Executive Committee, Research Triangle Park, 4-6 April, 1998, Minutes
- Texts explaining the coming changes in Chemistry International, 1998, issue 6
- IUPAC, 126 Meeting of Executive Committee Tokyo, Japan, 24-26 April, 1999, Minutes (Contains chapter on restructuring, new project approval system etc.)
- Briefing Paper to Divisions from Secretary General, Organisation and Management of IUPAC's Scientific Work, 1 August, 1999

An information was also given on the recent discussion of Analytical Chemistry Committee (meeting on 7 August, 1999) where it was stated that only two bodies of the Division are assumed to continue their work after 2001: the Interdivisional Working Party of Quality Assurance Schemes for Analytical Laboratories (QAWP) and Commission on Solubility Data V.8. The other commissions are expected to propose how to continue activities in their own fields.

The ensuing discussion of this topic in the Commission V.7 can be briefly summarized as follows:

Several participants expressed doubts about the suitability of the planned restructuring of IUPAC work. Individual projects will probably not have the same quality as now, when commissions serve as filter for the projects (Kratz). The problems with inefficiency of work in certain fields and commissions or with the publication of IUPAC papers could be solved in another way (Collins, Ware). It is necessary to keep the commissions dealing with nomenclature. The change in the financing of future work may bring lack of travel money for meetings which are necessary for exchange of ideas (Collins).

Vigorous discussion evolved around the future position of radiochemistry and nuclear techniques in IUPAC. On one side, it is felt that radiochemistry is no more considered as "fashionable" (or new) discipline and some radiochemical projects (for instance those dealing with the speciation and behaviour of radionuclides in the environment) have close analogy in non-radioactive topics (Vitorge). On the other side, the role of our Commission in nuclear and radiochemical nomenclature, in the critical evaluation of radiochemical methods and data and of nuclear techniques is irreplaceable (Kolotov, Holden). Education in nuclear- and radiochemistry in the world has a downward trend, university positions for radiochemistry are not renewed (Collins, Vitorge, Ware). This requires a counteraction (supported by a reputable international organisation such as IUPAC) to prevent loss of knowledge and development in this field. It was agreed that

because the nuclear- and radiochemistry has interdisciplinary character our Commission should be considered as interdivisional, although we should stick to Analytical Chemistry Division (Benes, Collins, Nakahara). A good basis for our reasoning in this respect are the Recommendations to ACD from the Commission V.7 submitted to ACD (Kolotov). Radiochemistry should also be represented in QA working party of ACD and a first steps toward this goal has already been done in the discussion with the chairman of the QAWP.

5. Analysis of the Commission activity for the recent years

Apart from the Commission regular projects, two other activities were discussed at the meeting.

- a) Kolotov reported about the Commission web site which he established in 1998 and developed in 1999. The home page contains basic documents issued by the Commission and also links to important radiochemical institutes. Commission members are asked to complement and support the list of links.
- b) Benes and Myasoedov have been nominated (in 1998) as representatives of IUPAC to RADSITE project discussed at our previous meeting. Myasoedov participated at the meeting of RADSITE in Brussels in November, 1998. He informed the Commission about the scope and purpose of the project and answered several questions of Commission members. The ensuing discussion concerned possible formulation of IUPAC project related to RADSITE (Collins, Ware), and use of methods discussed in the Nakahara's project for RADSITE (Nakahara). Benes suggested that authors of IUPAC projects should themselves propose what could be used in RADSITE from their projects. Holden commented that an article on environmental migration of Pu was recently published in Nature.

6. Discussion with Prof. F. Ingmann, President of Analytical Chemistry Division

Prof. Ingmann visited the meeting of Commission V.7 to explain and discuss the future changes in the work of ACD. He briefly outlined namely the changes in financing projects. ACD will finance from the divisional budget only small projects (2-3000 USD), whose evaluation will be carried out by the Division with the help of outside referees. Bigger projects (≤ 20000 USD) will be interdivisional and will be funded by the central Project Commission (after passing through evaluation by the Division and central Project Commission). Prof. Ingmann then answered several questions by Commission members concerned with the future changes in procedures for publication of project results, election and statute of Division Committee members, establishment of new commissions, proposals for new projects and financing of travel expenses.

7. Review of the current status of the running projects

Project 12/89 - manuscript has been completed, reviewed and submitted to ACD Approved status: running, step 14 of the Flow Chart.

Project 13/89 - project outcome has been published electronically in Internet:
<http://www.andrew.cmu.edu/course/09-105/RadiochemGlossary/1a.cover.html>

Approved status: completed from the point of view of the Commission, unclear from the point of view of IUPAC Secretariat (did not pass the procedure described on p.209 of the IUPAC Handbook)

Project 15/91 – manuscript reviewed, paper in press in PAC

Approved status: close to completed, step 19 of the Flow Chart

Project 16/91 - cancelled

Project 18/93 - completed project was reviewed by Nakahara and will soon be reviewed by Gaggeler

Approved status: running, step 9 of the Flow Chart

Project 19/93 - work on this projects was restarted in cooperation with De Corte

Approved status: running project, extended till 2001, step 7.

Project 21/93 - text finished, partially translated, data in electronic form will be placed on Internet.

Approved status: running project, extended till 2001, step 7.

Project 22/95 - text is prepared, reviewed by Collins, Myasoedov and Kolotov.

Approved status: running project, extended till 2000, step 10.

Project 23/95 - cancelled, but Kolotov keeps trying to find scientist to restart it.

Project 24/95 - text is finished, reviewed and will be sent to ACD

Approved status: running project, extended till 2000, step 11.

Project 25/95 - published outside IUPAC without response to review by Collins. Commission decided to withdraw it.

Project 26/98 – running, the completion is expected end of 2000-beginning 2001.

Approved status: running project, step 7.

Project 27/98 – work on the project started but is delayed due to overloading of the coordinator by other tasks

Approved status: running project, step 7.

8. Initiation of new projects

The decision of IUPAC is that, in the period of transition from the current system to the new system of project financing (1999-2001), project funding can be by both the systems. Decision will be taken by Division Committee. Several possibilities for the new projects were discussed at the meeting:

Vitorge proposed a new project dealing with methodology of the prediction of radionuclide migration in the environment already at the even-year meeting in Marianske Lazne. He prepared PIF but did not submit it as he intended to wait until he can start with real work on the project. However, the Commission requested submission of PIF for comments and for review by external referee(s).

Discussion continued on the next day, August 9.

Next expected project is on the nomenclature of radiopharmaceuticals and should be lead by Prof. De Goeij, who agreed to prepare proposal already one year ago (see Minutes from the previous meeting at Marianske Lazne). Possible establishment of task group to work on this topic was discussed and it was concluded that Nakahara, Kratz and Benes will look for collaborators.

Further, reinitiation of a project on QA in radiochemical analysis and other radiochemical methods was considered. In view of the probable continuation of the existence of QAWP (see 4. above) such a project can be proposed there. Ware expressed his interest to follow this idea and our Commission decided to propose his membership in the QAWP. Holden will look for possible coworkers in USA.

Chai (absent) expressed in a letter his intention to propose a project on speciation study of essential and toxic trace elements by nuclear analytical techniques. This intention was broadly discussed and it was recommended that Chai should prepare detailed proposal for circulation and comment.

Myasoedov considered as suitable topic the critical evaluation of speciation and migration of artificial radionuclides in the environment. Connection of this topic to RADSITE programme was discussed and Benes proposed it as a core activity for a task group where our members could participate. Myasoedov agreed to prepare the proposal for circulation and comments.

Proposal of a RADSITE programme for a new project (Myasoedov) was not recommended by the Commission members for being too broad. Holden expressed his willingness to start project on Critical

evaluation of half-lives of naturally occurring long-lived radionuclides. He did not expect any financial support and proposed Prof. De Laeter (Perth) as suitable referee. Further discussion concentrated on a possible project dealing with nuclear dating, which was considered already in 1997 and 1998 in Geneva and Marianske Lazne. Kratz will ask his colleague Dr. Michel for preparation of PIF, preferably in collaboration with Gaggeler.

9. Information on the Working Party in Nuclear and Radiochemistry

Ware presented an information on the Working Party (WP) which was established in the frame of the Federation of European Chemical Societies (FECS). He explained the structure of FECS and its goals as well as the purpose and goals of the new WP. Some printed information was also distributed among the Commission members. The WP now represents radiochemists from 5 countries and seeks contacts with other national radiochemical groups. Ware will serve as Secretary to the WP. He sees possible relation between our Commission (asked Kolotov) and the WP in the field of education, in mutual information on projects etc. and seeks representatives for WP among his colleagues/radiochemists in different countries (asked Vitorge).

10. „Hot spots“ in the field of radiochemistry and nuclear techniques, discussion of the main directions of the Commission activity for the coming two years

The discussion started with the comparison of our intentions, expressed in the Mission Statement of our Commission accepted at the Commission meeting in Geneva in 1997, with our current and planned projects. It was stated that the projects will cover much of the proposed scope. According to Vitorge we should not put too much stress on planning new projects without properly considering who can carry out the job. He suggested that an internal project should be established with the aim to investigate what should be done, i.e. to review what topics are suitable for research.

Nakahara stressed the need for having enough projects in this transition period and defended the idea that list of potential projects should be established. On the other hand, the survival of a strong radiochemical group in IUPAC could be ensured by formulation of a large interdivisional project (Benes).

Kolotov and Collins mentioned that developing nations should be more involved in the projects. Vitorge recalled that European Commission accepted only multilateral projects, where also developing countries can participate. He also pointed out possibility of getting financial support from NEA and IAEA for the work on projects. Nakahara informed about recent development in Japan where Japanese Radiochemical Society will soon be established (Prof. Kudo is organising it). Several issues of a newsletter and of a journal were published in both Japanese and English. Myasoedov added that Russian journal Radiokhimiya appears now also in English version (Radiochemistry) and seeks contributions.

Benes read E-mail which he received from Chai, where several main directions in radiochemistry and nuclear techniques were emphasized. From these directions, the Commission members supported mainly the following topics:

super heavy elements - Kratz expressed opinion that after some 5 years an update of his article (now in review by the Commission) should be made; new nuclear analytical techniques of high sensitivity; low-level radioactivity in the environment and its long-term impact on humans; new types of radiopharmaceuticals, e.g. dopamine acceptor.

11. Recommendations to Division for potential needed activities in the field of radiochemistry and nuclear techniques

Several opinions were expressed in the discussion preceding final formulation of the recommendations: all important fields of radiochemistry should be maintained; top down projects should be kept; radiochemistry is on the way up; radiochemistry in IUPAC has interdivisional character (Collins, Ware, Vitorge, Holden). Kratz informed about book printed by the German Chemical Society where suitable recommendations can be found.

The final formulation of the Commission recommendations edited by Collins and Ware, was discussed and submitted to Division V..

RECOMMENDATIONS to ANALYTICAL CHEMISTRY DIVISION **from the Commission on Radiochemistry and Nuclear Techniques (V.7):**

The trend of interest in nuclear and radiochemistry has increased in the last 5-10 years, mainly through a growing interest in waste management, the nuclear fuel cycle and the presence of natural and man-made nuclides in the environment. The Division is therefore asked to maintain on the Division Committee a representative with substantial expertise in radiochemistry. In addition the member should have access to an advisory group to assist in assessing and reviewing potential projects.

As an alternative, since radiochemistry deals with problems of radioactivity and nuclear techniques in the wider sense, this advisory group could offer support for assessing projects to all divisions, possibly as an interdivisional standing committee.

Spheres of special interest that are of international significance to the Union's mission include: radioecology (study of artificial and natural radionuclides in the environment, including speciation); radiochemistry related to nuclear power technology from mining through (commercial, military, and medical); waste reprocessing, including [geo]chemical aspects of new technologies of waste storage or disposal; chemical aspects of remediation of polluted areas; application of isotopes (including radionuclides) in chemical and biomedical investigations; certain aspects of radiation effects; and application of nuclear techniques.

In addition to the function as assessors, the advisory group would be capable of initiating project proposals in the general areas of nuclear and radiochemistry in the following directions:

- (i) (fundamental) nuclear and radiochemistry data for codification and standardisation;*
- (ii) radiochemical analysis of environmental pollutants;*
- (iii) investigation of natural and artificial radionuclides;*
- (iv) amelioration technologies associated with energy production;*
- (v) application of radioactivity in life sciences;*
- (vi) radioanalytical methods and nuclear techniques for determination and speciation of trace elements in various matrices;*
- (vii) nuclear chronology.*

12. Commission membership

Reelection of Titular members

Prof. Nakahara informed Commission that he would retire from work and from his membership in the Commission. Dr. Kolotov expressed sincere gratitude of the Commission for Prof. Nakahara's long and successful work in IUPAC.

Prof. Kratz expressed his intention to step down as TM because of his overloading with many other duties. After discussion with other members, who appreciated his contribution to the Commission activities, he was persuaded to serve for additional two years.

Prof. Benes, Prof. Gäggeler, Dr. Kolotov and Prof. Kratz were then unanimously reelected as TM for the period 2000-2001.

Election of new Titular Member

Prof. Chai was elected as new Titular member (he was Associate Member since 1996).

Reelection of Associate members

Prof. Collins, Prof. Vértes, Dr. Vitorge and Dr. Ware were unanimously reelected for 2000-2001.

Election of new Associate Members

Prof. F. De Corte (Gent, Belgium) and Prof. A. Yates (Kentucky University, USA) were elected as Associate members. These persons were elected already in Geneva in 1997, but due to an administrative mistake they were not confirmed by IUPAC. Also, Prof. J.J. de Goeij (Delft, Netherlands) and Dr. Y. Nagame (Japan) were elected as new Associate Members.

National Representatives

Because the pool of NRs consists of candidatures proposed by NAOs, the NRs should be approved the Commission. It was done. The term of service for two persons (Dr. Holden and Prof. Myasoedov) exceeded permissible value, but taking into account their active work and importance for the Commission it was decided to ask Division and correspondent NAO for exceptional prolongation of their service for the next biennium. The list of NRs for 2000-2001 period is the next: Dr. N.E. Holden (USA), Prof. Dr. Sc. F. Macasek (Slovakia), Professor B.F. Myasoedov (Russia), Dr. Nak Bae Kim (Korea), Prof. S. Nagy (Hungary), Dr. J. M. Peixoto de Cabral (Portugal), Professor A. Plonka (Poland), Dr. A.V.R. Reddy (India), Professor C. Testa (Italy).

13. Even year meeting

The even year meeting will be held one day before the NRC5, 5th International Conference on Nuclear and Radiochemistry, which will take place in Pontresina, Switzerland, from 3 to 8 September, 2000. Details will be given later. All members of the Commission present in Berlin (except for Vitorge who was not sure) expressed their intention to participate at the meeting.

Meeting was closed on 9 August at 5.30 P.M.

Vladimir Kolotov, Chairman

Petr Benes, Secretary