

Secretariat: Radiochemistry Group
Analytical Division
The Royal Society of Chemistry
Burlington House
Piccadilly
London W1V 0BN
United Kingdom.



RADIOCHEMISTRY IN EUROPE NEWSLETTER

Issue 27 – March 2004

EDITORIAL COMMENT

Welcome to the twenty-seventh Newsletter for Radiochemists in Europe under the sponsorship of the Federation of European Chemical Societies (FECS).

I indicated in the last newsletter that the FECS WP on Nuclear and Radiochemistry wanted to continue with this newsletter. It is important therefore to remind everyone that it is here to communicate with all radiochemists in Europe. This should be a two way process so please let the WP have your comments, plans etc for publishing.

This newsletter is established on web page (www.rsc.org/pdf/andiv/europenews.pdf). The newsletter is perhaps more easily accessed through the website of The WP on Nuclear and Radiochemistry of FECS, whose URL is www.fecs-chemistry.org/nuclear. This website has other useful connections to "Future Events" called nuclear and radiochemical activities in Europe, and the Homepage of the Radiochemistry Group of RSC. If any other group would like their website to be linked, please send me the details. With regard to the Future Events I am trying to include conferences in other disciplines which have or could have a section involving nuclear and radiochemistry.

This is in keeping with the FECS WP's aim to involve scientists from a wide range of disciplines and topic areas.

The WP is interested in expanding an existing database on training courses in radiochemistry. Do you think that such a database should be widely available? Please let us have your comments and send details of any courses that you run. (See Radiochemistry Society item in "News from the Internet").

This is your newsletter for radiochemists in Europe. Articles, reports on meetings, laboratory profiles, courses, positions vacant, redundant equipment and any other item you feel may be of interest to other radiochemists are still urgently required. Also the early announcement of dates for meetings and conferences is important to avoid the possibility of organising two at the same time on similar topics within Europe.

Providing that information is available I intend to compile this newsletter 4 times per year in March, June, September, and December/January. Please send information in good time for inclusion that is by the end of the month prior to publication. **Editor: Dr. Tony Ware (e-mail:tonyware@compuserve.com)**

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•EUROPEAN RADIOCHEMISTS ASSOCIATION.

Aims and Objectives

The objective of the association is to extend and improve communications between radiochemists in Europe through a newsletter. This will be achieved through aims, which include

1. Establishing a liaison person within each country (or group).
2. Exchanging with each of the other liaison persons details of the activities of their own group during the current and subsequent years,
3. Setting up a diary of relevant International Events to avoid duplication of dates and hence improve attendance
4. Exchanging details of specialist equipment, facilities and methodology.

•FEDERATION OF EUROPEAN CHEMICAL SOCIETIES

The WP has made little progress on Nuclear and Radiochemistry since the last newsletter. At the FECS Executive Meeting in Brussels on March 2nd. The latest plans for the FECS European Chemistry Congress were discussed. The WP is being asked to consider a seminar on "Radiochemistry in the 21st Century" and a presentation on training for radiochemists. In order to aid progress Dr Jan John, Technical University of Prague, has been invited to represent the WP on the Advisory Committee for the Congress.

Also discussed at the meeting was a draft, revised constitution for FECS. This will establish FECS as an International Non-profit Association with an address and telephone number in Brussels. The Association will then be registered as a legal association under Belgium Law. The Executive endorsed the proposals in general and the constitution will be made available to members of the FECS General Assembly. The General Assembly will be asked to approve the new constitution in October at its Annual Meeting. A new title for the association will also be considered to widen the science base of its work and influence. There will be an annual subscription for Chemical Societies to remain in the association and the association will be able to seek other sources of funding.

As Chair of the WP on Nuclear and Radiochemistry I am a member of the Executive. If you have any views on the proposed change please let me know. I believe that if the WP or FECS are to progress they must have a stronger influence in Europe. To this end I feel that a legal association of Chemical Societies will have a greater influence than the existing Federation where there is no central funding.

Contact: Editor Dr Tony Ware (e-mail: tonyware@compuserve.com)

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•LABORATORY PROFILE

NEUTRON SYSTEMS DEVELOPMENT LIMITED

Please visit the web site of Neutron Systems Development limited. www.neutrons.biz NSD is a start-up company that has received funding from the UK DTI and a business incubator in the North West of England (Merseyside). We are accommodated within the University of Liverpool Nuclear Physics Group. After achieving early technical goals we are seeking collaboration with members of the radiochemistry community. NSD already has such relationships with two radiochemistry institutes in Germany.

The technology that has been developed is a neutron generator fit for industrial applications and industrial life cycle economics. The neutron generator set can be supplied to a radiochemistry laboratory for early applications development. Usually an industrial lead customer with a project topic will have been identified and signed on for the purposes of acquisition of study grants. As an application development system matures there will be a prototype system field trial hosted by the lead customer. Demonstration of commercial potential to industrial partners will lead to toward an industrial market phase.

If you have any questions please contact John Sved, Director, Neutron Systems Development limited.

Email: johnsved@neutrons.biz Tel +49 4221 924 926 <http://www.neutrons.biz>

Editor: If you would like your laboratory or research group to be profiled, please contact editor with draft script.

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· CONFERENCE REPORTS

No reports have been received since the last newsletter. Please provide information particularly of publication of any proceedings.

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· CONFERENCE AND WORKSHOP DETAILS

6th International Conference on Nuclear and Radiochemistry (NRC-6)

The sixth conference in this series will be held from Aug 29 - Sep 3 2004 in Aachen, Germany.

Deadline for abstracts is now past and decisions on final program made. It is not too late to decide to attend.

E-mail: nrc6@fz-juelich.de

Website: <http://www.fz-juelich.de/NRC6/>

2nd Nordic Conference on Plasma Spectrochemistry June 6-9, 2004, Loen, Norway

Details on website at <http://www.nordicplasma.com>

The Analytical Section of the Norwegian Chemical Society invites scientists and users of science to this second Nordic Conference on Plasma Spectrochemistry. After a successful organisation of the first Nordic Conference on Plasma Spectrochemistry in Norway 2002, the Organising Committee decided to follow up this regional conference featuring

both invited and submitted contributions on the developments in fundamental aspects of and the application of plasma spectrochemistry as well as short courses implemented in the conference. Consequently, they have invited our prominent speakers to contribute to the conference with a 30 minutes plenary contribution on his/her favourite topic and a short course.

By contrast to other plasma spectrochemistry meetings, the short courses will be offered to all participants during the 3 1/2 day meeting, which may be very attractive to participants to learn about and to be updated on plasma spectrochemistry. We are planning to organise about 16 short courses, two or three in parallel each day, during the conference. This new concept is meant to stimulate Nordic users of plasma based techniques to learn more about theoretical and practical issues as well as obtain specialists recommendations for methods improvements. Thus, these short courses are also a unique opportunity for laboratory engineers to be updated.

Conference Secretariat: Yngvar Thomassen (Chairman) National Institute of Occupational Health, P.O. Box 8149 DEP, N-0033 Oslo, Norway

Tel.: +47 23 19 53 20 Fax.: +47 23 19 52 06

e-mail: Yngvar.Thomassen@stami.no

NAMLS-8 Conference

Arrangements are proceeding well on schedule for the next NAMLS Conference in Brazil. Please note the following details.

Dates: 2005 April 17-22 Place: Rio de Janeiro, BRAZIL

Conference Hotel: Sheraton Rio Hotel & Towers (www.Sheraton.com.br)

Chairperson, Local Organizing Committee: Dr. Elisabete A. De Nadai Fernandes

E-mail: lis@cena.usp.br

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•NEWS FROM THE INTERNET

The Radiochemistry Society

The website of the Radiochemistry Society is www.radiochemistry.org. Recent news included details from the New York Times announcing the discovery of two new elements. The most popular section last month was their online Periodic Table, which gives data on every element and its isotopes. Downloads are freely available.

The history section now features pictures & info of ALL above ground nuclear tests. For more details go to:

http://www.radiochemistry.org/history/nuke_tests

Of particular interest is the section on training in radiochemistry, which lists all establishments in the USA, offering MSc and PhD courses and research programmes. I feel that this is a feature, which we should copy in Europe with a site associated with the FECS WP on Nuclear and Radiochemistry. Each establishment has provided a single page profile, which can be accessed and downloaded.

Details can be found through the website www.radiochemistry.org and communication made via email -

info@radiochemistry.org

(Article written by Editor, Tony Ware)

International Nuclear Chemistry Society (INCS)

The Initiative Council Members Meeting of the International Nuclear Chemistry Society (INCS) was held in Kusadasi, Turkey in September and made some important decisions for the future activities of the society. In this context, the "1st International Nuclear Chemistry Congress" will be held in Kusadasi, Turkey from 22-29 May 2005, during which the Permanent Council of the society will be elected. The 1st issue (January-2004) was recently published. It gives some idea about the main goals of the INCS. Please also note that detailed information about the INCS and congress can be obtained from the following web address (<http://incs.ege.edu.tr>).

(Contact: **Turan Unak** E-mails: unak@incs.ege.edu.tr; congress@incs.ege.edu.tr)

New Organically Bound Tritium Standard

The Radioactivity Metrology Group at NPL, UK now offers an Organically Bound Tritium (OBT) standard. Discharges of OBT into the marine environment are thought to be responsible for the significantly elevated tritium concentrations in aquatic organisms (e.g., fish). Almost all of the tritium found in these organisms is OBT and not tritiated water, the most common chemical form of tritium in the environment. The new standard aims to validate the radiochemical analysis of environmental OBT. In general, chemical recoveries of OBT in these analyses are thought to be high, but individual results may vary significantly.

A tritiated form of nucleoside thymidine, [6-³H]-thymidine, was chosen as the chemical form for this new standard.

Tritiated thymidine was standardised with liquid scintillation counting (LSC). Tritium emits low energy beta particles and chemical quenching effects will strongly reduce its counting efficiency. Internal standards of HTO were used to correct for this reduction in counting efficiency and to provide traceability to a primary standard.

Tritiated thymidine, like most other tritiated organic compounds, is, however, not stable during storage. The activity of a tritiated organic compound does not only decrease as a result of the natural decay of tritium, but also by self-decomposition of the tritiated compound into tritiated water or tritiated organic fragments. This self-decomposition is caused either by interaction of the compound with emitted beta particles of neighbouring tritium nuclei or by chemical and microbiological effects. The rate of this additional decomposition during optimal storage conditions for tritiated thymidine was found to be 0.1% per month. This custom preparation OBT standard is made to order.

Contact Arvic Harms (E-mail: arvic.harms@npl.co.uk) for further details on the new OBT standard.

Teacher position at ParisXI University

Here is a proposition of a teacher position (MCF) at the Paris XI university (Orsay, France), starting October 2004. The candidate will work in the radiochemistry group of the Nuclear Physics Institute, and must teach in French at the Orsay University. The application is due to April 5, 2004.

Etude, par chimie quantique, des mécanismes d'interactions actinides-surfaces minérales.

L'objectif de ce MCF, qui intégrera le groupe de radiochimie de l'Institut de Physique Nucléaire d'Orsay, sera de modéliser les interactions entre actinides et surfaces minérales, de les valider grâce aux données expérimentales existantes et in fine d'établir le caractère prédictif de ces modélisations.

La personne recrutée devra posséder de bonnes connaissances en chimie quantique et une bonne maîtrise des méthodes ab-initio, qu'elle appliquera aux éléments possédant une sous-couche 5f. Elle développera ainsi des études sur la structure électronique des complexes de surface (participation des électrons 5f dans la liaison actinide-surface, transferts électroniques le long des liaisons, délocalisation...). Elle sera amenée à collaborer étroitement avec les expérimentateurs du groupe.

L'enseignant-chercheur recruté pourra participer à tous les enseignements de chimie générale et inorganique de la Licence et du Master de chimie et en particulier dans la spécialité "Radiochimie" de ce Master.

Contact: Prof. Eric Simoni email: simoni@ipno.in2p3.fr

Recent IAEA Publications of relevance to NAMLS

The NAMLS website has recently been updated to include information on the following IAEA reports published since January 2003. Most of these reports can be downloaded as PDF files. More details are given on the NAMLS website (www.namls.at.tf).

Biomonitoring of atmospheric pollution (with emphasis on trace elements) - BioMAP II

Clean laboratories and clean rooms for analysis of radionuclides and trace elements

Intercomparison of PIXE spectrometry software packages

Development and use of reference materials and quality control materials

Collection and preparation of bottom sediment samples for analysis of radionuclides and trace elements

Nuclear Analytical Techniques in Archaeological Investigations

Contact: Email: parr@gmx.at

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· AND FINALLY

Please send information for inclusion in future issues to your Liaison Person or myself Dr Tony Ware, Avoncastle, South Lane, Sutton Valence, Maidstone, Kent ME17 3AZ, UK. Tel: +44 (0)1622 842627, e-mail: tonyware@compuserve.com

IMPORTANT PLEASE send me your e-mail address so that I can inform you when websites have been updated and any other news of immediate interest.

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LIST OF CURRENT LIAISON PERSONS

Dr Max Bichler (Austria)

Technische Universität
Wien, Atominst.
Abteilung Radiochemie Stadionallee 2,
A-1020 Wien, Austria
Tel.: 43 1 58801 14192
e-mail: bichler@ati.ac.at

Dr Ales Fajgelj (IAEA, Austria)

IAEA, Agency's Lab Seibersdorf
A-2444 Seibersdorf, Austria
Tel: 43 1 2600 28233
e-mail: a.fajgelj@iaea.org

Prof Dr P Benes (Czech Republic)

Czech Technical University
Nuclear Sciences & Physical
Engineering
115 19 PRAHA 1
Brehova 7, Czech Republic
Tel: (2) 231 76 26
e-mail: benes@br.fjfi.cvut.cz

Dr H Dahlgaard (Denmark)

Risoe National Laboratory,
P O Box 49, NUK-204

DK-4000 Roskilde, Denmark

Tel. 45-46775314

e-mail: henning.dahlgaard@risoe.dk

Dr J Lehto (Finland)

Laboratory of Radiochemistry
P.O.Box 55
00014 University of Helsinki
Finland
Tel: +358-9-19140137
Fax: +358-9-19140121
email: jukka.lehto@helsinki.fi

Dr D Trubert (France)
Institut de Physique Nucleaire
Division de Radiochimie
BP 1
F-91406 Orsay Cedex
France
Tel. (33) 16 1 69 41 73 45
e-mail: trubert@ipncls.in2p3.fr

Prof. Dr. R. Michel (Germany)
Zentrum für Strahlenschutz und
Radioökologie
Am Kleinen Felde 30
D-30167 Hannover
Germany
Tel.: +49-511-762-3312
Fax: +49-511-762-3319
e-mail: michel@zsr.uni-hannover.de

Dr P Misaelides (Greece)
Dept. of Chemistry, Aristotle
University
PO Box 1547
GR-540 06 Thessaloniki
Greece
e-mail: misailid@chem.auth.gr

Dr A Vincze (Hungary)
Zrinyi Miklos National Defense
University
Hungary
e-mail: incze@zmne.hu

Prof. Z B Alfassi (Israel)
Department of Nuclear Engineering
Ben Gurion University
Beer Sheva, 84102 Israel
Tel. 972-57-461347
e-mail: alfassi@bgumail.bgu.ac.il

Prof Dr Mauro Bonardi , (Italy)
Nuclear and Radiochemistry,
Universita' degli Studi and National
Institute of Nuclear Physics,
INFN-Milano,
via F.lli Cervi 201, I-20090 Segrate
(Milano), Italy
Tel : +39 02 5835 9575
E-mail : Mauro.Bonardi@MI.INFN.IT

Dr. I Z Kolar (The Netherlands)
Interfaculty Reactor Institute
Delft University of Technology
2629 JB DELFT,
The Netherlands
Tel. (+31) 15 78 66 19

e-mail: kolar@iri.tudelft.nl

Prof P Hoff (Norway)
Nuclear Chemistry Section,
Department of Chemistry,
University of Oslo, PO Box 1033,
Blindern N-0315 Oslo
Norway
Tel: + 47 22 85 54 84
Fax: + 47 22 85 54 77
e-mail: per.hoff@kjemi.uio.no

Dr R Bojanowski (Poland)
Polish Academy of Sciences
Institute of Oceanology
Dept of Marine Chem. and Biology
Powstancow Warszawy 55
81-712 Sopot
P.O.Box 68, Poland
Tel. (48 58) 51 72 81
e-mail: rbojan@ocean.iopan.gda.pl

Dr V P Kolotov (Russia)
Verdnasky Institute of Geochemistry
and Analytical Chemistry
Kosygin str., 19
Moscow B-334, 117975, Russia
Fax: 7 (095) 9382054
e-mail: kolotov@glas.apc.org

Prof. Dr Fedor Macasek (Slovakia)
Department of Nuclear Chemistry
Comenius University
Mlynska dolina
SK-842 15 Bratislava, Slovakia
Tel. +421 7 60296308,
Fax: +421 7 65424685
e-mail: macasek@fns.uniba.sk

Dr Milka Benedik (Slovenia)
Laboratory for Radiochemistry
J Stefan Institute
1000 Ljubljana
Slovenia
Tel: + 386 1 5885 450
e-mail: ljudmila.benedik@ijs.si

Dra C Gasco (Spain)
CIEMAT (DIAF)(Ed3A)
Avda de la Complutense 22
Madrid 28040
Spain
e-mail: cata@ciemat.es

**Prof. Gunnar Skarnemark
(Sweden, Gothenburg area)**

Dept of Nuclear Chemistry
Chalmers Univ of Technology
S-412 96 Goteborg
Sweden
Tel. +46 31 7722914
e-mail: gunnar@nc.chalmers.se

Prof. T Eriksen (Rest of Sweden)
Dept of Nuclear Chemistry
S-10044 Stockholm 70,
Sweden

**Prof. Dr Heinz W Gäggeler
(Switzerland)**
University of Bern
Labor Fur Radio- and Umweltchemie
Freiestrasse 3
CH-3012 Bern, Switzerland
Tel: 4131-6314264
e-mail: gaeggeler@iac.unibe.ch

Prof Turan Unak (Turkey)
Ege University, Faculty of Science
Dept. of Chemistry, Div. Nuclear
Chem.
Bornova, Izmir 35100, Turkey
e-mail: incs@alpha.sci.ege.edu.tr

Dr A R Ware (United Kingdom)
Avoncastle, South Lane
Sutton Valence, Maidstone
Kent ME17 3AZ, UK
Tel. (44) (0)1622 842627
e-mail: tonyware@compuserve.com

**Mr S Jerome (International
Committee for Radionuclide
Metrology)**
National Physical Laboratory
Queen's Road
Teddington
Middlesex TW11 0LW, UK
Tel: +44 20 8943 6204
Fax: +44 20 8614 0490
e-mail: ICRM_LLTWG@npl.co.uk

**Dr G Hunter (International Union
of Radioecology)**
7A Park Ave.
Stirling, Scotland
UK FK82QR
e-mail: twohunters@btopenworld.com