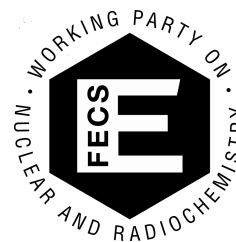


**Secretariat:** Radiochemical Methods Group  
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# RADIOCHEMISTRY IN EUROPE NEWSLETTER

Issue 23 – November 2002

## EDITORIAL COMMENT

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

This newsletter is now firmly established on web page (<http://www.rsc.org/pdf/andiv/europenews.pdf>). I hope you have added this URL to your favourites to avoid having to remember it each time. The five previous copies of the newsletter can also be found using the same URL with the issue number after europenews. The newsletter is also available through the website of The WP on Nuclear and Radiochemistry of FECS, namely <http://www.chemsoc.org/networks/enc/fecs/fecsradiochemistry.htm> This website has other useful connections to "Future Events" called nuclear and radiochemical activities in Europe, and the Homepage of the Radiochemical Methods Group of RSC.

The FECS WP on Nuclear and Radiochemistry, which is discussing training needs in Europe, has maintained contact with the European Nuclear Engineering Network and the IAEA review on the Application and Training in Radiochemistry. In addition Expressions of Interest lodged within the FP6 programme of the European Commission has identified other groups in Belgium and Spain interested in the training of radiochemists. Whilst none cover the exact area of

interest of the WP attempts will be made to share any data collected via the various surveys and to seek financial support from the European Commission.

The report "Assessment of the teaching and applications in radiochemistry" from the technical meeting held in Antalya, Turkey 10-14 June 2002 has now been issued.

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 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.

I am considering establishing a domain name, which would allow easier access to both the RCMG and the FECS WP webpages as well as permit more informal contact. Any ideas or comments would be welcome. How should we relate to the RadChem List?

Providing that information is available I intend to compile this newsletter 4 times per year in March, June, October 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](mailto: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

### **Gábor Náray-Szabó becomes President of FECS**

At the FECS General Assembly in October 2002, Professor Gábor Náray-Szabó, of the Hungarian Chemical Society, took over as President of FECS, succeeding Dr Reto Battaglia of the Swiss Chemical Society.

Gábor Náray-Szabó has been involved in the work of FECS since 1987 when he became joint General Secretary. In 1988 he helped to establish the Working Party on Computational Chemistry, serving as its Chairman from 1998. He has been President of the Hungarian Chemical Society and a member of the Executive Council of the World Federation of Engineering Organisations.

From 1969 to 1990, Gábor Náray-Szabó held positions at Chinoin Pharmaceutical and Chemical Works, Budapest, followed by a period as Managing Director, Bionavion Biochemical R&D, Budapest, in 1990. In 1991 he became Professor of Chemistry, Eötvös University, Budapest. He has also held positions as Deputy Secretary-General, Hungarian Academy of Sciences and Deputy Secretary of State, Ministry of Education.

### **FECS Awards for Service**

The FECS Award for Service 2001 was presented to Dr David J Bricknell in recognition of his services to FECS and, through AllChemE, to European cooperation in chemistry.

David Bricknell has for over 10 years promoted European co-operation in chemistry and has supported FECS in its aim of acting in an advisory, consultative and representative capacity in relation to European institutions.

Bricknell initiated a series of influential workshops hosted by CEFIC aimed at advising policy makers in EU institutions on the development of the European Research Area.

The FECS Award for Service 2002 was presented to Dr Michael Gagan, Royal Society of Chemistry, in recognition of his significant contribution to chemical education, particularly in his capacity as Chairman of the FECS Division of Chemical Education. Michael Gagan served as Chairman/Convenor of the FECS Division of Chemical Education from 1991 to 2002, developing its effective and influential role in chemical education in Europe. Under the auspices of FECS, he initiated the series of biennial European Conferences on Research in Chemical Education (ECRICE), the 6<sup>th</sup> of which was held in Portugal in 2001. He inaugurated the series of European Conferences in Chemical Education (ECCE), concerned with the practice of chemical education in Europe, complementing the ECRICE. He has overseen the publication of a position paper on Chemical Education Research, justifying its pursuit as

an academic discipline, and many other papers on the development of chemical education in Europe.

### **The WP on Nuclear and Radiochemistry**

Report to FECS General Assembly 11<sup>th</sup> October 2002

The WP currently has 13 members, invited member and 1 observer. It met once during the year at The 14<sup>th</sup> Radiochemical Conference in the Czech Republic and held its first FECS sponsored Conference; Environmental Radiochemical Analysis. This had 80 attendees from 14 countries and financially supported 5 students. It is now considering FECS sponsorship for Nuclear and Radiochemistry Conference (NRC6) to be held in Aachen, Germany, August 2004.

One of the main interests of the WP is to improve the training of radiochemists in Europe. To this end we participated in the IAEA world-wide survey "Assessment of the teaching and applications in radiochemistry" (report now issued) and a discussion on European radiochemistry at the 14<sup>th</sup> Radiochemical Conference (Paper written for Conference Proceedings). Further the WP has placed an "Expression of Interest" in the European Commission FP6 Programme on "Training of Nuclear and Radiochemists" in Europe. The brief reads as follows:

"In European Universities an appreciable loss of knowledge is expected in the fields of nuclear and radiochemistry. There is a continuous demand for expertise in these areas from the Nuclear Industry, Environmental Science, the Pharmaceutical Industry, Medical Science and other industries using radiochemicals. There is a need to support existing and stimulate new University curricula, training facilities, and commercial applications of nuclear and radiochemistry and to encourage students to undertake further training to enable them to perform work relevant to many of the "Priority Thematic Areas of Research" in FP6.

The WP would establish a European Network of laboratories prepared to offer training in nuclear and radiochemistry, to educate and inform the general public and politicians and to expand the existing "Radiochemistry in Europe" Newsletter and webpage."

Of course the newsletter and webpage continue to operate. We would like more chemical societies to nominate representatives to the WP and to inform us of nuclear and radiochemical courses in their countries. Finally the WP is determining the best way in which it can participate in the FECS European Conference in 2006.

(e-mail:tonyware@compuserve.com)

**ERA – EUROPEAN RADIOCHEMISTS ASSOCIATION: Abstract of the report on the discussions during the 14<sup>th</sup> Radiochemical Conference.**

The European Radiochemist Association started almost simultaneously with the appearance of the first issue of the *Radiochemistry in Europe* newsletter in August 1995. The objective of the European Radiochemical Association (ERA) is to extend and improve communication between radiochemists in Europe through a newsletter. Liaison persons within each country or group exchange details of their activities, set up a diary of relevant international events and exchange details of specialist equipment, facilities and technology. In the year 2000 the Federation of European Chemical Societies decided to form a working party on nuclear and radiochemistry. It is a formalisation of the European Radiochemists Association. Each chemical society is allowed to nominate a member to the Working Party on Nuclear and Radiochemistry. Currently we have 12 nominated members plus two invited and one observer. In addition to the ERA aims and objectives it proposes to put together a syllabus of radiochemistry for undergraduate and post-graduate students – this aspect has been a part of our support of the International Atomic Energy Agency initiative. Also the aim of the working party is to support other working parties and divisions, to press the Federation of the European Chemical Societies for financial structure. To this end an Expression of Interest has been tabled with the Framework 6 Programme for networking within radiochemistry in Europe. The WP will liaise with the International Isotope Society and the International Society on Radiopharmaceutical Chemistry and Biology to seek to communicate and to consider ways of working together. (Ir. Zvonimir I Kolar, kolar@iri.tudelft.nl and Dr A R Ware e-mail:tonyware@compuserve.com)

It is hoped to obtain agreement to place the full paper provided to the Conference Proceedings on the web.

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### •EUROPEAN COMMISSION'S 6<sup>th</sup> FRAMEWORK PROGRAMME FOR RESEARCH

The FECS WP on Nuclear and Radiochemistry have registered an Expression of Interest entitled "Network for Training of Nuclear and Radiochemistry in Europe" with the European Commission. The text is given in the WP report to the FECS General Assembly above and will not be repeated here. The Cordis site now includes a fuller statement on our intentions and gives details of the WP members and hence participants in any future project.

Dr Jan John from the Czech republic will represent the WP at the Launch of the FP6 in Brussels from 11<sup>th</sup> to 13<sup>th</sup> November 2002. He aims to contact others who have expressed an interest in training radiochemists. Two other expressions of interest in the general area were lodged by CKN, Belgium and Spain. More formal contacts are being sought.

One way forward is to establish a network of universities and laboratories to offer training packages which can be taken individually at various times over say a three year period resulting in some form of certificate or diploma.

The Framework Programme 6 (FP6) supports this approach through its Human Resources and Mobility Programme. One section of which reads:

"Marie Curie Conference and Training Courses will allow less experienced researchers to benefit from learning from and networking with experienced researchers. Summer schools, training events, laboratory courses covering one or several specific themes over a period of years will be supported. A series of events spanning 4-5 years and organised through professional agencies would appear to be especially favoured. Participants will be funded to attend if they are within 4-10 years of the date when they obtained their first degree."

This programme also offers Marie Curie Excellence Grants to establish new research teams, Marie Curie Chairs and Marie Curie Excellence Awards for postdocs involved in previous Framework mobility actions.

(Ed Comment. I would hope that radiochemists could arrange to utilise some of these grants which are distributed in the name Marie Curie.)

(e-mail:tonyware@compuserve.com)

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### • CONFERENCE REPORTS

#### **9th International Symposium on Environmental Radiochemical Analysis**

The International Environmental Radiochemical Analysis Symposium, a four-yearly event in the UK, was held at the Ramada Hotel and Resort, Maidstone, Kent between 18 – 20 September 2002.

Despite the ever-increasing calls on the scientists' time, commercial and organisational pressures and the reported emerging loss of expertise globally in the radiochemistry and related fields, it was heartening to see over 80 delegates in attendance, similar to numbers at previous conferences in the series; more pleasing was that there were many younger faces present. Twenty-three countries were represented.

As ever, there was an excellent display by product exhibitors (field and lab-based detectors, software, laboratory products, combustion furnaces, LSC cocktails, chromatographic resins etc.).

It is worth reporting that the seating arrangement was, for this conference, a rather novel "wedding party" set-up, with chairs grouped around a number of round tables. This worked rather well and gave the proceedings a more open feel and made microphone access during questions easy and rapid.

Reflecting the ease of access to and familiarity with PC software, all but one of the 31 presentations were PC-based, each pre-loaded in order, resulting in a smooth running order and very professional.

The meeting was split into five sessions over the 3 days, with a poster session on the evening of the second day. The meeting was sponsored by Analytical Services, BNFL and supported by the Federation of European Chemical Societies (FECS).

Themes for the presentations and posters were many and varied, and included radiochemical method developments, method improvements, method comparisons, gamma detector performance and new software products (detector background reduction), method uncertainty, underground laboratory facilities, method QA and QC, field studies covering colloid work, in-situ injection of radionuclides into rock strata and sampling of reduced waters for actinide assay.

All the main radiometric disciplines were covered — alpha spectrometry, alpha and beta liquid scintillation counting, Cerenkov counting, gamma spectrometry (both passive and following neutron activation analysis), mass spectrometry (both ICP-based and thermal ionisation), gas-flow proportional counting, solid state track detectors and laboratory sample preparation protocols.

Gathering the papers presented broadly into general themes:

#### Method developments/improvements

S Shaw from NRPB developed an in-vitro enzymolysis procedure to simulate human digestion and its effect on radionuclides on different soils, which may be digested inadvertently. Phil Warwick from SOC described the preparation, characterisation and performance of a DIBK-based extraction chromatographic material used for separation of  $^{55}\text{Fe}/^{59}\text{Fe}$  from fission products in decommissioning and effluent samples. Savio Sequeira of RPII investigated an  $\alpha\beta$ -LSC procedure for measuring radon in Irish groundwaters - a standard protocol covering the sampling, equilibration and counting components was optimised. A. Ermakov described the use of the gamma-emitter  $^{143}\text{Pm}$  as a yield monitor for  $^{243}\text{Cm}$ ,  $^{241}\text{Am}$  or both. Ian Croudace and team at SOC have developed mass spectrometric analysis of Pu purified from environmental samples using a multi-collector ICPMS - high precision of better than 1% at 0.1 pg/ml were achieved, allowing determination of the origin of the Pu. Studying natural radionuclides in drinking water, M. Forte and colleagues from ARPA Lombardia, Milan described drinking water procedures for U isotopes and  $^{226}\text{Ra}$  using alpha/beta separation LSC, optimising cocktails and extraction procedures to establish compliance with directive 98/83/EC. Arvic Harms of NPL presented studies on various types of total dissolution procedures used for soil/sediment and compared their effectiveness. The successful application of PERALS (alpha-LSC) spectrometry following selective extraction of actinides from water samples was demonstrated by D Ensor from the Tennessee Technological University.

Nora Vajda, Institute of Nuclear Studies, Budapest presented a complex scheme for separation and purification of long-lived (DDN – difficult-to-determine) radionuclides in which extraction chromatography featured heavily; a variety of methods were used to measure decay or mass of the purified radionuclides. K. Tagami presented a study of a radioanalytical scheme for separation of Tc from Re, the latter is often used as a yield monitor for the former. A. Thakkar, EiChrom Technologies, showed how extraction chromatography method comparisons could be used to purify  $^{226}\text{Ra}$  and  $^{227}\text{Ra}$  by extraction chromatography prior to alpha spectrometry assay.

#### Method comparisons

C Zhon of Imperial College, Ascot compared three methods for measuring gross activity in water; two Chinese standard methods and a third, relative method gave widely different results. Joe Toole, Harwell Scientifics, described an intercomparison covering gross alpha/beta in sediment; in a deliberate attempt to show the at-best qualitative nature of the measurement, large ranges of results were obtained by 10 UK labs, even when the same calibrations and counting systems were used. L. Benedik of the Josef Stefan Institute, Slovenia described a comparison of alpha spectrometry and neutron activation analysis in the measurement of  $^{237}\text{Np}$  in environmental samples.

#### Environmental studies

Work carried out over many years by CEFAS on the distribution of  $^{99}\text{Tc}$  in the Irish Sea was described by Kins Leonard. Jackie Morris from SOC presented interim results of a 3-year investigation into the spatial and temporal variation of (total) tritium in the Severn Estuary and the factors that may control the release of sediment-bound tritium. Studying the same estuary, Dave McCubbin of CEFAS presented results of tritium in the marine food chain and described the bioaccumulation mechanisms. Norman Green presented the dose assessments, which NRPB have carried out on the consumption of “wild foods” by higher-than-average consumers. Mike Schultz, Ortec, reported on a field-based method developed to sample large volumes of reduced water also containing high Fe levels. Following several separations using coprecipitations and extraction chromatography, natural and artificial radionuclides were measured by isotope dilution alpha spectrometry.

Dave McCubbin, CEFAS gave an overview of the levels and variability of ambient  $^{210}\text{Po}$  levels in seafoods – the dose to consumers was extremely sensitive to variation in diet composition. There were two talks related to studies of the behaviour of radionuclides in waste repositories: Peter Warwick, Loughborough University, described work being carried out at the LLW repository at Drigg including the non-trivial sampling and analysis methods required to colloids as vectors for radionuclide migration; Colin Biggin,

NAGRA Switzerland, provided an overview of the in-situ radionuclide retardation trials at the Grimsel Test Site for radioactive waste and outlined plans for future long-term experiments. Susan Parry (announced at the conference dinner as a new Professor) described her research team's work on the use of seaweed to monitor the transport of  $^{129}\text{I}$  in the English Channel, following its discharge from UK and French fuel reprocessing plants.

#### Method uncertainties

Two talks focussed on the estimation of measurement/method uncertainty – a study recent requirement for UKAS-accredited laboratories in the UK. George Ham of NRPB presented results of an intercomparison on  $^{137}\text{Cs}$ ,  $^{90}\text{Sr}$  and Pu measurements on grass and cabbage sub-samples from larger field samples; estimates of uncertainty in the subsampling procedure were derived.

Terry Gingell, DRPS Gosport, constructed an uncertainty budget, using as a case study the determination of uranium isotopic activity in vegetation samples.

#### Underground laboratories

In what was perhaps the most memorable presentation of the conference, Professor K Komura, Kanazawa University, Japan, gave an exhilarating and fascinating account of his work on gamma-spectrometric measurements of activation nuclides (e.g.  $^{198}\text{Au}$ ,  $^{186}\text{Re}$ ) in his ultra-low-background underground laboratory;

environmental neutron fluxes of as low as  $0.001 \text{ n cm}^{-2}\text{s}^{-1}$  could be measured.

F Verzezen of SCK-CEN Mol, Belgium compared the background and performance of the an LSC counter placed 225 metres underground (Hades laboratory) against its above-ground performance and against other LSC counters above ground; significant gains were to be had if this underground luxury could be afforded.

#### Software developments

There were two main talks on this topic: Bud Sielaff, Canberra Industries, described a new software solution for gamma spectrometry operations; the software addresses and enforces all routine QA procedures; hopefully it will leave the lab manager with sufficient flexibility to “get the work done”!

Last, but by no means least, I Kashirin created a buzz through the audience with his description of an LSC spectrum deconvolution program; it was reported to work for up to 3-component radionuclide mixtures with prior knowledge of the composition; its applicability to unknown samples was not obvious.

The proceedings of this conference will be published as a special Royal Society of Chemistry volume. If the timetable achieved for the previous Proceedings is matched, this will be on an impressive 1-year timescale.

**(Joe Toole, Harwell Scientifics November 2002  
Joe.toole@harwell.scientifics.com)**

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**· IAEA (International Atomic Energy Agency) CONSULTANTS MEETING**

A report has been prepared by Dr Rossbach entitled “Assessment of the teaching and applications in radiochemistry”. A limited number of copies are available please address request to Dr Rossbach by e-mail. The Introduction to the report reads as follows.

#### Introduction

In Europe and the United States, a gradual decrease of teaching and training opportunities in radiochemistry has been observed since more than two decades. Due to public misconception of anything nuclear related, the dramatic decrease of students enrolled in nuclear chemistry and radiochemistry resulted in closure of institutes via un-replaced retirements of faculty members and drastic reduction of financial support. Lack of teaching opportunities in radiochemistry as the basic discipline for radiopharmaceutical, nuclear medical, health physics, and nuclear energy technology has a strong multiplicity effect on various branches of applied and basic research and, hence, on some major parts of society's welfare.

However, the application of radioisotopes in medical diagnostics and therapy and the use of isotopes and ionising radiation in food and safety technology (e.g. smoke detectors, de-mining, or detection of explosives at strategic places (airports, tunnels), in agriculture,

water management, or the nuclear fuel cycle in the energy production, require expertise in radiochemistry and measurement of radioactivity. There is already a shortage in qualified personnel for maintenance of nuclear power plants (NPPs), decommissioning, or safeguarding of existing fissile material (e.g. plutonium (Pu) in the countries of the former Soviet Union). If no immediate action to preserve present knowledge and encourage young scientists to engage in nuclear chemistry and radiochemistry will be taken, the subjects might fade away in several industrialised countries within a few years.

This situation applies to Europe and North America and is well-documented [1-3]. However, little has been done to improve the current situation. The mandate of the International Atomic Energy Agency (the IAEA) to support peaceful uses of nuclear energy implies support to foster the human resources necessary to maintain and safeguard this technology. As radiochemistry is one of the pillars in nuclear sciences, the transfer of knowledge, training facilities, support of new applications and creation of new job opportunities should be within clear focus of the IAEA's activities to support its Member States.

Following the Consultants Meeting (CM) on Training Requirements in Modern Aspects of Radiochemistry organised by the IAEA and held in Munich in September 1987, an assessment of the current situation with respect to teaching and application of radiochemical procedures was undertaken in June 2002, in Antalya, Turkey by a group of experts on a regional context, i.e. North America, Latin America, Eastern Europe, East and West Asia and Africa. Major gaps and needs for further action were identified and recommendations to improve the desperate situation in the fields of nuclear chemistry and radiochemistry were given to the IAEA.

The outcome of this meeting represents a preliminary survey on the current state of radiochemistry and related subjects in education, training, and application in Member States of the IAEA. Qualified

recommendations for corrective actions using the experience gained thus far in some countries are discussed and documented. Specific recommendations for further activities, to improve public perception, attract more students and stimulate the attention of decision makers in politics and industry, are given by the experts. As the meeting was timed immediately before the Seventh International Conference on Nuclear Analytical Methods in the Life Sciences (NAMLS7) in Antalya, Turkey, 16-21 June 2002, the findings of this meeting were also presented and discussed at the NAMLS7 Conference.

(**Matthias Rossbach e-mail: [m.rossbach@iaea.org](mailto:m.rossbach@iaea.org)**)

In view of the importance of this report agreement will be sought to put it on the web as soon as possible.

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**CONFERENCE DETAILS**

**The ICRM Conference on Low-Level Radioactivity Measurement Techniques 2003**

Dear Colleague, we kindly would like to invite you to the ICRM Conference on Low-Level Radioactivity Measurement Techniques 2003, Vienna, Austria, 13. - 17. October 2003.

The conference will be jointly organised by the Austrian Research Centers - Seibersdorf research (ARCS) and the Federal Office of Metrology and Surveying (BEV).

The 1st call for participation is now made. More information on the Conference can be obtained on the web-site <http://www.icrm-llrmt.at> We look forward to seeing you in Vienna next year!

Dr. Martina Schwaiger Health Physics Division ARC Seibersdorf research GmbH

Mag. Robert Edelmaier Division Electricity and Radiation, BEV- Federal Office of Metrology and Surveying

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**•NEWS FROM THE INTERNET**

**Vacancies at NPL, Teddington, UK**

The Radionuclide Metrology Group at the National Physical Laboratory has a vacancy for a Senior Radiochemist. The work of this group supports the provision and dissemination of the UK's national standards of radioactivity, at levels ranging from those appropriate for the medical uses of radionuclides to those applicable to environmental radioactivity measurements. This work is an essential part of the UK's National Measurement System, funded by the Department of Trade and Industry. This position is to lead research in Radiochemistry for the Radioactivity Metrology Group. The aims of the post are to:

- \*Develop new environmental level sources, standards and reference materials.
- \*To represent NPL on interest groups and committees
- \*To present the outcome of your work at international conferences, symposia &c
- \*Provide radiochemical and non-active chemical support for the NMS radioactivity metrology group
- \*Develop reference materials for measurements in the non-nuclear workplace
- \*Develop new radiochemical separations
- \*To plan irradiations to produce starting materials for the group's absolute standardisations

\*To take charge of the day-to-day running of the group's radiochemistry, environmental radioactivity and source preparation laboratories.

A recognised numerate science degree/doctorate based on chemistry, is required; previous experience in radiochemical techniques or radiochemical analysis and the safe handling of radioactive materials is essential, in particular a familiarity and knowledge of chemical separation procedures and of radioactivity measurement techniques. Experience in supervising junior staff is also desirable as is a willingness to learn new techniques; specialist training will be provided on-the-job and via suitable courses.

The Radionuclide Metrology Group at NPL also has a vacancy for a Radiochemist to support the radiochemical work of the group as above. This position is to carry out research in Radiochemistry within the Radioactivity Metrology Group. The aim of this post is to:

\*Provide radiochemical and non-active chemical support for the NMS radioactivity metrology in many of the tasks of the Senior Radiochemist.

A chemistry graduate is required; experience in handling of radioactive materials would be an advantage. A willingness to learn new techniques

is desirable; specialist training will be provided on-the-job and via suitable courses.

For further details of either position, please contact:  
Simon Jerome, Radioactivity Metrology Group Tel: +44 (0)20 8943 6204  
e-mail: simon.jerome@npl.co.uk

**The IAEA AQCS** wishes to announce that it is organising a world-wide interlaboratory study on the determination of natural radionuclides in aqueous samples. The aim of the study is to gather information on the current state of practice for <sup>226</sup>Ra, <sup>228</sup>Ra, <sup>234</sup>U and <sup>238</sup>U measurements at different radionuclide activity levels in water samples covering a wide range in salinity. Analysts will have a unique opportunity to check/confirm their method validation, check their accuracy, intercompare calibration sources and reduce uncertainties. Participation in this interlaboratory study should therefore lead to a higher standard of performance for these types of measurements. Analysts are invited to determine, and submit results, on one or more of the listed radionuclides in one or more samples as well as the corresponding standard solution. Emphasis will be placed on both the accuracy (i.e. on the bias of participants' results when compared to the true values) and the evaluation of analytical uncertainty (i.e. the ability to properly quantify measurement uncertainty taking into account all relevant components).

The following time-schedule has been set:

- dispatch of samples: 15 Nov to 31 Dec 2002
- reporting results deadline: not later than 31 Mar 2003
- individual performance evaluation report: not later than 31 May 2003
- summary report: available end of 2003

Further information on this proficiency test is available directly from the IAEA at the following e-mail address: AQCS@iaea.org

#### **Gamma ray spectrometry software**

IAEA -TECDOC-1275, March 2002

This is the final report on a three-year IAEA Co-ordinated Research Project (CRP). In the CRP, several basic applications of nuclear data handling were assayed which also dealt with the development of PC computer codes for various spectrometric purposes. The CRP produced several software packages for the analysis of low level NaI spectra; user controlled analysis of gamma ray spectra from HPGe detectors; a set of routines for the definition of the detector resolution function and for the unfolding of experimental annihilation spectra; a program for the generation of gamma ray libraries (using new, evaluated data) for specific applications; a program to

calculate true coincidence corrections; a program to calculate the full-energy peak efficiency calibration curve for homogeneous cylindrical sample geometries including self-attenuation correction; and a program for the library driven analysis of gamma ray spectra and for the quantification of radionuclide contents in samples. An attached CD-ROM contains all software packages produced under the CRP.

This report is available cost-free on request from Stjepko Fazinic, IAEA (s.fazinic@iaea.org).

#### **NPL Intercomparisons**

As you may know, the National Physical Laboratory, UK (NPL) runs an environmental radioactivity comparison exercise approximately every 18 months. The next exercise is about to take place, so if you would like more details, please visit this website for further details;

<http://www.npl.co.uk/npl/rad/science/env/env.html>

#### **Postgraduate Diploma Course Radiopharmaceutical Chemistry /Radiopharmacy**

will start the third cycle with the course module in Frankfurt am Main from 24 February to 7 March. The course language is now English! For further information please contact Verena Renggli Tel. +41-1-635-60-85

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#### **Institute for Transuranium Elements (ITU), Joint Research Centre, European Commission, 76125 Karlsruhe, Germany**

Within its post-graduate program ITU offers doctoral (3 years) and post-doctoral (2 years) stipends for applicants from EU member and associated states with a university degree in chemistry, physics, materials science or related fields.

We especially would like to bring these possibilities to the attention of students and researchers from EU enlargement countries (Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia).

ITU's research program is focussed on the following topics:- Basic actinide science, Partitioning and transmutation of nuclear waste, Design of advanced nuclear fuel for transmutation of minor actinides, Material properties of actinides under extreme conditions and Nuclear chemistry (nuclear safeguards, alpha-immunotherapy, radioactivity in the environment, nuclear analytical chemistry)

Further information can be found on the homepages of ITU (<http://itu.jrc.cec.eu.int>) and the Joint Research Centre (<http://www.jrc.cec.eu.int>)

#### **· 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](mailto: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

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