

IRPS BULLETIN

Newsletter of the International Radiation Physics Society

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IRPS COUNCIL 2012 - 2015

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From the Editors

It is said that radiation knows no borders, but if the same be said about radiation physics it is because of the tireless efforts of people committed to exploring its peculiar heights and depths and piecing together what they learn into an overlay of the known terrain that illuminates the way for future explorers while enhancing the understanding and appreciation of its many multifaceted applications by other scientists and by the general public. Readers of the IRPS Bulletin will likely recognize something of this quest in their own endeavors to reach across territorial boundaries, both to pursue the phenomena and to make results intelligible to colleagues in allied fields and to other interested spectators around the world.

It is reflected also in the executive structure of the IRPS organization itself, whose officers representing regions both geographical and professional engage constructively to organize the various affiliated symposia and conferences

occasionally produce content for you to read here, in the Bulletin. And, while we try from time to time to throw a spotlight on one or more members of our Society, to give a sense of the range and breadth of applications and community involvement undertaken by our membership, in this issue we are pleased to share bios on several members - 19 in all! - who are running for office in the forthcoming triennial election of IRPS officers. A ballot is also included, with instructions for casting your votes.

As always, we value your input with regard to future content - contributions of technical articles, book reviews, reports of conferences and committee work, personal profiles, research/teaching initiatives, ... are all welcome - and, as we end 2014 and look ahead to 2015, reiterate our thanks to all who contributed content this past year while wishing everyone a happy holiday season and our hopes for exciting adventures in the coming year.

Ron Tosh and Larry Hudson

Contacts



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Internet Address : <http://www.canberra.edu.au/irps>

And we have a developing "sister website" : <http://radiationphysics.org/>

President's Column

Dear Colleagues

The IRPS was founded in 1985, at the 3rd International Symposium on Radiation Physics in Ferrara. The objective was to promote the global exchange and integration of scientific information in the interdisciplinary field of radiation physics.

The constitution of the IRPS was written and approved almost 30 years ago. Thirty years is a mature age in human life, and also in the life of a scientific society. However, *tempora mutantur et nos mutamur in illis*. During the course of time, the activities of the Society have been extended, and the Society's practices have diverged somewhat from the rules in the old Constitution. Some time ago, a number of Council members and members of the Advisory Board raised the question of revising the Society's Constitution. The results of the discussions will soon be presented to members. I will present here some amendments that are under discussion, and mention why they are now being raised.

First of all, there is the question of the definition of what radiation physics is, and how broad a definition our Society wants to embrace. From the beginning, radiation physics has been understood as an interdisciplinary branch of science, ranging from pure theoretical and experimental physics to applications in industry, medicine, biology, chemistry, environmental sciences, radiation protection, etc. The broad range of topics covered by the Society should now be explicitly expressed in the revised Constitution.

I have mentioned the Advisory Board above. This body is not mentioned in the original Constitution, as it was set up after the Constitution was written. It should now be written into the revised version. The Advisory Board consists of former Council members, and is chaired by the immediate past President of the Society. This body serves a simple purpose: to ensure that the Society does not lose the experience of former leading Council members who played a major role in making the

Society what it now is, and who can continue to contribute its life and activities. This group of advisers has much to offer to the current Council. The Chairman of the Advisory Board should be an ex officio member of the Council. The other Board members should have the right to attend Council meetings, and the President of the Society should have the right to invite them to collaborate with the Council, either throughout the electoral period or on solving specific problems.

We are professional society that must be open for everybody who deals with radiation physics and agrees with the goals of the Society, including students. The level of the membership fee is closely connected with access to membership of the Society. The fee should therefore be kept as low as possible.

The old Constitution states that lifelong membership is offered to members who have paid the fee for twelve years. This article of the Constitution has never been implemented, and it would be appropriate to delete it. The old Constitution also states that Honorary Membership can be conferred. This has also never been implemented, but it seems to be an appropriate way to show appreciation for members who have made an outstanding contribution to the Society. Honorary membership should be retained in the revised Constitution, and should be activated.

Another issue that needs to be specified is the linkage between the IRRMA group and the Society. The IRRMA conferences, which are co-organised by the Society, substantially extend the field of interest of the Society into the applications of radiation. The composition of the Council should also reflect the importance of IRRMA.

Another conference on dosimetry - ICDA - has been founded. We hope that the ICDA meeting on

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President's Column Continued :

dosimetry in Prague will start a further tradition of events co-organised by the Society. These activities need to be better covered by the Constitution. I was very surprised to read in the old Constitution that ISRPs are conferences for members of the Society. In practice, our conferences have always been open to all scientists and students in our field. Conferences open to all attract new members to the Society, and bring new sources of inspiration for existing members. The revised Constitution should welcome the participation of non-members in Society events.

The rules on the work, the rights and the duties of the Council, officers and members also need to be revised and updated to reflect the current state of the Society and its future prospects.

The old Constitution has provided an effective basis for the life of the Society for nearly thirty years, and it is by no means a matter of tearing it up and starting again from scratch. On the contrary, it forms a good basis for a revised text and rules, which will retain all the good and proven aspects of the old Constitution, and will react only to the development of the Society, and of radiation physics, over the last 30 years.

Draft proposals will be soon sent for comments to all Council members and then to all Society members. We hope to complete the revision by the end of the current electoral period, i.e. in time for the next ISRP (Beijing, 13 - 18 September 2015).

Ladislav Musilek

New Memberships, Membership Renewals

Membership form for new members, and details for payments by cheque for new and renewing members are on the last 2 pages of this journal and information for payment by credit card is below

If you are unsure when your renewal is due, contact

Elaine Ryan

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Membership Payments by Credit Card

Internet payments by credit card (Visa, Mastercard, AMEX, Discover) can be made via the IRPS website

<http://www.canberra.edu.au/irps>

You do not need a PayPal account to use this method of payment

Go to the Home Page on our website (as above)

click on Membership, scroll down to the selection of buttons and click on the one that suits your membership.

If you have any queries or problems contact :

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Report of the AFRIRPA04 Conference

Rabat, Morocco

M.A. Goma
IRPS Vice President for Africa and Middle East
IRPA-Egypt President

During the period 13 to 17 September 2014, the 4th African Regional IRPA Radiation Protection Congress (AFRIRPA04) was held in Rabat, Morocco. As the Organizer of the second African Regional Radiation Protection Congress held in Ismailia, Egypt April 2007, it was my pleasure to participate in AFRIRPA04. Historically the first African Congress was held in Johannesburg, South Africa 2003, second in Ismailia, and the third one was held in Nairobi, Kenya in 2010. The 5th Congress is planned for Tunisia in 2018. The congress was held at the Faculty of Medicine and Pharmacy of Rabat.

As seen from the Congress photo (see below) more than 200 participants attended the Congress.

As in all International Radiation Protection Association (IRPA) congresses, international organizations as well regional and national societies took part in the activities carried out at Rabat. Among the international organizations were IRPA, IAEA, WHO, ILO, UNSCEAR, IOMP and PNS. IRPA African associate societies attended the associate societies forum including the South African, Egyptian, East African, Moroccan, Cameroon as well as Tunisian Society which recently joined IRPA in September 2014.

Several African and national societies participated in the activities of the Congress, among them IRPA-Egypt and the



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Report of the AFRIRPA04 Conference continued :

host organization in Morocco was AMR (Association Marocaine de Radioprotection).

The key persons for the success of this important event are Dr. R. Czarwinski IRPA President, P. Thiagan IRPA Vice President for Congress affairs, Dr. Bernard LeGuen IRPA secretary, Dr. E. Gallego, member of IRPA Board, Dr. M. Perez from the WHO, Dr. F. Nuesslin from IOMP, I. Shadad from IAEA, S. Niu from ILO, F. Shannoun from UNSCEAR, and from Morocco: Prof. A. Choukri, Prof. O. K. Hakam, and Prof. A. Ibn Sedikk. Finally, the scientific program organizer was Dr. J. T. Harris (USA).

The main items of the congress are the following:

- 1 - Daily refresher courses
- 2 - Plenary lectures
- 3 - Presentations of research papers
- 4 - Workshops
- 5 - Young Scientists Award Forum

Besides the usual topics in radiation protection, this African Congress covered several other important topics in medical physics, security of radioactive materials, and education and training in radiation protection. It is noted that radiation protection of non-ionizing radiation was not included as a topic in the congress activities.

Several scientific instrument companies were exhibiting their radiation protection products.

Special thanks are due to Prof. Choukri, chairman for offering presentations and selected photos on the congress website :

<http://www.afrirpa04.com>

Among Congress activities is P. Thiagan's presentation of the forthcoming IRPA International Congress (IRPA-14) to be held at Cape Town, South Africa in 9-13 May 2016.

Profile of Member Standing for President

Christopher Chantler



Prof. Chris Chantler graduated from the University of Western Australia with a B.Sc. (Hons 1) in Chemical Physics in 1984, followed by a D. Phil. from Oxford in Atomic Physics in 1990.

He is full professor, School of Physics, University of Melbourne.

He has made seminal developments in X-ray atomic form factor theory. His theory is the current NIST and US reference database on the subject. This database is accessed 10000 to 20000 times per month by X-ray scientists, academics, commercial groups and others. It impacts upon EXAFS (Extended X-ray Absorption Fine Structure), crystallography, X-ray optics, DAFS (Diffraction Anomalous Fine Structure) and Cherenkov radiation studies. The X-ray data are relevant for fundamental theory, materials analysis, X-ray and synchrotron biological efforts and many other fields.

Chantler has over 157 refereed publications including *Phys. Rev. A*, *Phys. Rev. Letts*, and *J Phys. Chem. Letts*, with citation rates of 22 and 16 per annum for single papers, over 2470 citations and over 430 citations on a single publication. Additionally, he has over 277 conference presentations, including many invited orals and plenaries at international and national fora.

Chantler is the current Chair of the IUCr International Commission on X-ray Absorption Fine Structure, the Editor-in-Chief of *Radiation Physics* in the international journal *Radiation Physics and Chemistry*, the first Editor of

*School of Physics, University of Melbourne,
Melbourne, Australia*

the coming International Tables for Crystallography Volume I, and is involved in numerous international conferences and initiatives. Chantler has been the lead scientist proposing major new facilities for the Australian Synchrotron beamline development plans, including 'A beam-line for atomic and plasma science, X-ray and IR/vis/VUV spectroscopy including detector development and diagnostics', *Chantler, Wang, Hudson, Grant, Silver, Gillaspay, Stelbovics, Flambaum, Mitroy, Le Blanc, Boland, Rassool, Ryan, Bray, Fursa, Bartlett, Kheifets, Lohmann, et al.* He has been co-proposer on two others. Chantler designed optical elements for synchrotrons in Chicago, Japan and Australia and implemented them.

He recently chaired the IUCr Congress Tutorial Workshop on XAFS in Montreal, for the International Year of Crystallography, with numbers tripled from the previous successful event in Madrid.

Chantler has developed new high-accuracy experimental techniques (XERT) in the X-ray regime, for the determination of attenuation and absorption coefficients and the imaginary component of the atomic form factor. These experimental results lie at the core of a new understanding of the interaction of light with matter, especially in the practical sense of developing new analytic tools for XAFS. Recent work by his group has led to improvements in the understanding of theory (as measured by the reduced χ^2 fitting of experimental data) by a factor of 100. The future for XAFS looks bright, but there is an urgent need for the accurate evaluation of significance of result, preferably in an automated manner with reliable deposited data. This has been espoused in older days by Creagh and Hubbell, by Oyanagi, by the International Union of Crystallography Commission on XAFS, and by the International XAS Society.

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Chantler has formulated the first dynamical theory of curved non-ideally imperfect crystal X-ray diffraction. He has completed numerous invited reviews, post-graduate textbook chapters and major tabulations. Chantler has performed precise measurements of resonance lines of helium-like ions in the Z=19-31 range. These are sensitive to two-electron QED effects (0.14 eV accuracy for a 0.16 eV effect). Chantler's experiments present new types of tests of medium-Z QED.

Chantler has received prestigious awards including the David Syme award, the JARI international Enterprise award and FAIP.

Recent measurements have revealed a 5.7 standard error discrepancy of QED theory from experiment for two-electron systems, at a similar level to the muonic hydrogen discrepancy and the Higgs discovery. Recent theory has developed a new package (FDMX) for simultaneous XANES and EXAFS fitting announced at the IUCr Congress 2014.

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.../Profile of Member standing for Secretary

Profile of Member Standing for Secretary

Jorge Fernandez

Industrial Engineering Department, University of Bologna, Italy



After obtaining his M.Sc. in Physics (1977) and his Ph.D. in Physics from the University of Cordoba in Argentina (1985), Professor Fernandez was a Researcher in atomic and nuclear spectroscopy at institutes in Buenos Aires and Cordoba.

From 1994 on, he has been affiliated with the Alma Mater Studiorum University of Bologna, Italy. He is Associate Professor at the Industrial Engineering Department (DIN) of this University, and a consultant to several companies and institutes in Italy and abroad. In the past he was affiliated to the former Italian National Institute for Physics of Matter (INFM) and Associated Researcher of the Italian Institute of Nuclear Physics (INFN).

His interest is mainly in the fundamental physics of the interaction of x-rays with matter including polarisation effects and its implications for applications. In particular:

- Transport models (deterministic and Monte Carlo) for polarised and unpolarised photons, and for charged and neutral particles.
- Coupled transport problems involving photons and charged particles.
- Problems of multiple scattering.
- Spectroscopic techniques using X-rays (EDXRS, XANES, electron microprobe, computed tomography),
- Applications of X- and gamma rays to industrial diagnostics, medical physics, environmental physics, and cultural heritage (non-destructive methods).

He is the author of over 120 articles in scientific journals, many as invited contributions, 3 books, 1 patent and several computer codes (SHAPE, MSXRF, MCSHAPE, etc) related to XRS, photon transport and the interactions of x-rays with matter.

He organised the European EDXRS Conference in 1998 and the 5th International Topical Meeting on Industrial Radiation and Radioisotope Measurement Applications (IRRMA-5) in 2002 and the European Conference on X-Ray Spectrometry (EXRS-2014) in 2014. Actually he continues as a Member of the International Advisory Committee for the European Conferences on X-Ray Spectrometry and of the Organizing Committee of the IRRMA Conference.

In 2007 he acted as co-chair of, both, the Scientific Committee of the 10th International Symposium on Radiation Physics (ISRP-10) and the satellite Workshop on the Use of Monte Carlo Techniques for Design and Analysis of Radiation Detectors.

He is Receiving Editor for Applied Radiation and Isotopes (AEI) and Editorial Board Member for X-Ray Spectrometry.

He serves actively within the International Radiation Physics Society as Secretary (elected in 2012).

Statement: I have been a member of the International Society of Radiation Physics from its foundation in 1985. I fully endorse the objectives of the Society of promoting the global exchange and integration of scientific information pertaining to the interdisciplinary subject of radiation physics. My intention as Secretary is to maintain and improve the high scientific level of the Society symposia (ISRP's), bringing this conference to countries interested to increase their activities and to attract young scientists to the subject.

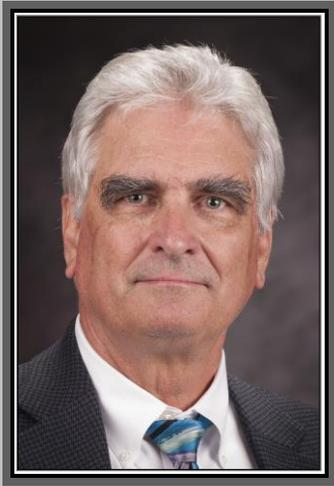
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.../Profile of Member standing for Treasurer

Profile of Member Standing for Treasurer

William Dunn

*Department of Mechanical and Nuclear Engineering,
Kansas State University, Manhattan, USA*



Dr. William Dunn received his M.S. and Ph. D. degrees in Nuclear Engineering from North Carolina State University. He has been a long-standing member of the radiation physics community and was an early member of IRPS, having attended the third Symposium at Ferrara in 1985

Dr. Dunn worked for five years at Carolina Power and Light Company, where he served as an in-house Nuclear Engineering consultant. While there, he conducted radiotracer studies at the H.B. Robinson Nuclear Power Plant. He next was employed by North Carolina State University, where he oversaw applications of the PULSTAR research reactor. Bill moved full-time into the research community in 1982, taking a position at Research Triangle Institute, where he performed research on dosimetry in computed tomography and measurement of lubricant thickness on hypodermic needles. He is the originator of the Symbolic Monte Carlo method for solving inverse problems using only a single Monte Carlo simulation. In 1988 Dr. Dunn co-founded, with his colleague Dr. Fearghus O'Foghludha, Quantum Research Services, Inc., a research and services firm, where he spent fourteen years as President. His research involved radiation effects on electronics, measurement of relative motion using plastic scintillating fibers, development of models for albedo and transmission in slabs, novel X-ray fluorescence measurement techniques, and measurement of hidden corrosion in aircraft. In 2002, Dr. Dunn returned to academia, assuming the position of Associate Professor in the Mechanical and Nuclear Engineering (MNE) Department at Kansas State University (KSU). Dr. Dunn is now Professor and Department Head of

the MNE Department at KSU and is also Steven M. and Kay L. Theede Chair in Engineering.

Dr. Dunn's research interests are concerned primarily with radiation measurement applications, including quantitative analysis, imaging, radiogauging, and radiotracing. He also has an active interest in particle transport analysis, particularly using Monte Carlo methods. Bill and his colleague, Dr. Ken Shultis, authored a book, published in April, 2011, entitled *Exploring Monte Carlo Methods*. He and another colleague, Dr. Douglas McGregor, have written an extended chapter on Gamma-Ray Spectroscopy, published by Springer as Ch. 17 in the *Handbook of Particle Detection and Imaging* (2012). Bill is a member of the American Nuclear Society and has been involved in the series of Industrial Radiation and Radioisotope Measurement Applications (IRRMA) meetings, the eighth of which he chaired in June of 2011. Dr. Dunn is primary author of three patents and has one patent pending. Bill has served IRPS as an Executive Council member, as Vice President for North America, and as Treasurer. He has managed the IRPS US bank account since March 2010.

Statement: I support the International Radiation Physics Society as a home where those of us who value developments in radiation physics can share our ideas and interact with others of like minds. Our society is unique in many ways. It encourages involvement of members from around the world, including those from developing countries. It chooses to host its meetings at locations that span the globe, allowing attendance, at least occasionally, by those who live in what some may consider remote locations. It has avoided the common practice of charging high membership fees, preferring instead to make do on a modest budget. My vision of the Society is that it is evolving into the pre-eminent international organization through which radiation physics is discussed, developed, and appreciated. I am an engineer by training but a physicist at heart. I embrace the mission of the Society and pledge, if elected, to do my best to help the Society grow and prosper.

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.../Profile of Member standing for Vice President, Western Europe

Profile of Member Standing for Vice President – Western Europe

José Rodenas



Professor José Ródenas was born in Valencia, Spain, on 22 January 1949.

Graduated in 1972, Industrial Engineering, at the Polytechnic University of Barcelona, Spain.

Obtained in 1981 his PhD in Nuclear Engineering, at the Polytechnic University of Valencia (UPV), Spain.

Associate Professor of Nuclear Engineering in 1984 and Full Professor of Nuclear Engineering in 2003, all at the Polytechnic University of Valencia, Spain.

Head of the Nuclear Unit, Department of Chemical and Nuclear Engineering, Polytechnic University of Valencia, from 2004 to 2008.

Teaching activities (Master and PhD levels) on nuclear technology, nuclear physics, radiation protection, environmental problems of nuclear energy, radioactive contamination, fuel cycle and nuclear materials.

Scientific and research activities on environmental radiation, dose calculations, shielding analysis, radioactive protection, thermohydraulics, Monte Carlo applications, criticality analysis, detector calibration, medical accelerators, radiotherapy treatment planning and others, with more than 100 publications in international journals (SCI/JCR) like *Annals of Nuclear Energy*, *IEEE on Nuclear Energy*, *Journal of Nuclear Science and Technology*, *Radiation Protection Dosimetry*, *Physics in Medicine and Biology*, *Medical Physics*, *Applied Radiation and Isotopes*, *Radiation Physics and Chemistry*, *European Journal of Radiology*, *Nuclear Instruments & Methods in Physics Research*, *Nuclear Technology*, *X-Ray Spectrometry*, *Radiation Research*, *IEEE*

*Department of Chemical and Nuclear Engineering,
Polytechnic University of Valencia, Valencia, Spain*

and Engineering, Nuclear Engineering and Design, Progress in Nuclear Energy, among others. Guest Editor of *Applied Radiation and Isotopes*. Managing Guest Editor of *Radiation Physics and Chemistry*.

Several books published (in Spanish), among them the following:

- *Problemas Ambientales de la Energía Nuclear*, Universidad Politécnica de Valencia, IBERDROLA, 1994. [*Environmental Problems of Nuclear Energy*]
- *Tecnología Energética 4. Energía Nuclear*, Universidad Politécnica de Valencia, 1995. [*Energy Technology*]
- *Introducción a la Ingeniería de la Contaminación Radiactiva*, Intertécnica, Valencia, 2003. [*Introduction to the Engineering of Radioactive Contamination*]

Member of the Nuclear Spanish Society (SNE), the Spanish Society of Radiological Protection (SEPR), the International Radiation Physics Society (IRPS) and correspondent member of EURADOS.

Secretary of CHERNE (Cooperation for Higher Education on Radiological and Nuclear Engineering) since its creation in 2005.

General Chairman of the Workshops on European Cooperation for Higher Education and Research in Nuclear Engineering and Radiological Protection held in Valencia in 2005 and 2006.

Chairman of the Scientific Committee of the Workshops on European Cooperation for Higher Education and Research in Nuclear Engineering and Radiological Protection held in Prague in 2007, Favignana (Italy) in 2008, Jülich (Germany) in 2009, Coimbra (Portugal) in 2010, Brussels (Belgium) in 2011, Athens (Greece) in 2012, Salamanca (Spain) in 2013 and Thessaloniki (Greece) in 2014.

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Member of the Technical Program Committee of the International Conference "Monte Carlo 2005" held in Chattanooga, Tennessee, USA (17-21 April 2005), organized by the ANS Radiation Protection and Shielding Division on the topic The Monte Carlo Method: Versatility Unbounded in a Dynamic Computing World. Member of the Technical Program Committee of the Second International Conference on Physics and Technology of Reactors and Applications (PHYTRA2) held in Fez, Morocco, in 2011.

Member of the Scientific Committee of the 7th International Topical Meeting on Industrial Radiation and Radioisotope Measurement Application, IRRMA 7 held in Prague in 2008; the 8th International Topical Meeting on Industrial Radiation and Radioisotope

Measurement Applications, IRRMA 8, held in Kansas City (US) in 2011; and the 1st International Conference on Dosimetry and its Applications, held in Prague in 2013.

Prof. Ródenas organized the 9th International Topical Meeting on Industrial Radiation and Radioisotope Measurement Applications, **IRRMA-9**

www.irrma-9.webs.upv.es

at UPV from 6 to 11 July 2014 with 200 participants from 30 countries, and served as the Chairman of both the Organizing and Scientific Committee. Selected papers presented at IRRMA-9 will be published in a Special Issue of Radiation Physics and Chemistry, of which Prof. Ródenas is Managing Guest Editor.

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.../Profile of Member standing for Vice President, Central and Eastern Europe

Profile of Member Standing for Vice President Central and Eastern Europe

Ines Krajcar Bronic

*Radiocarbon and Tritium Laboratory,
Department of Experimental Physics, Ruđer Bošković Institute,
Zagreb, Croatia*



Ines Krajcar Bronić is a senior scientist at the Ruđer Bošković Institute in Zagreb. She obtained her Master's Degree and a Doctor of Science in radiation physics, specializing in the interactions of low-energy electrons with matter and principles of gas detector operation.

She obtained the Humboldt Fellowship for research at PTB in Braunschweig, Germany (1995 - 1997) and JSPS Fellowship for research in Japan (1997) and established a long-term co-operation with M. Inokuti and M. Kimura (Argonne National Lab.). She was a special consultant of the IAEA committee for "Atomic and Molecular Data for Radiotherapy and Radiation Research" and a member of two ICRU Report Committees.

She is the author of 66 papers in CC journals and 15 in other journals and several contributions to various books. She has good organizational skills, having organized symposia, training courses (e.g., two IAEA

training courses on dating techniques of cultural heritage objects) and workshops, and acted as an editor of 7 proceedings. She also has held 3 plenary lectures and numerous public lectures promoting radiation science and its applications for peaceful purposes. She is the president of the Croatian Radiation Protection Association, delegate in the IRPA General Assembly and a liaison officer between the RB Institute and ICRM.

Statement: I joined the IRPS in 1991 when the ISRP-5 was held in Dubrovnik, Croatia. Since then, I participated at ISRP-8, ISRP-10 and ISRP-11. I have also contributed to the IRPS Bulletin. I am interested in promotion of interdisciplinary aspects of research involving radiation, especially in environmental studies and in dating of cultural heritage objects.

If I am elected as vice-president for Central and Eastern Europe I will do my best to:

- 1) promote radiation physics and radiation science in general in the region,
- 2) attract new (and young) members among scientists from the region,
- 3) promote ISRPs as exciting meetings with great opportunities for exchange of ideas.

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.../Profile of Member standing for Vice President, F.S.U.

Profile of Member Standing for Vice President – F.S.U.

Sultan Dabagov

Dirigente di Ricerca, INFN



Sultan Dabagov began his research career as a student in 1980, investigating surface effects in solids at the Kabardino-Balkarian State University, and completed his undergraduate work in the Dept. of Physics, Moscow State University and the

I.V. Kurchatov Institute of Atomic Energy (KIAE), under the supervision of Prof. M.A. Kumakhov, head of the laboratory for Electromagnetic Interactions, KIAE.

His undergraduate and postgraduate research was mostly dedicated to the development of the quantum theory of coherent and incoherent scattering of relativistic electron beams in oriented crystals.

During 1991-92 Dabagov performed studies at the Institute of Physics Astronomy (Aarhus University) by the invitation of Profs. J. Lindhard and J.U. Andersen. The joint research was devoted to the investigation of ion, neutron and electron beams scattering in high T superconductors (HTSC), especially channeling and channeling radiation of MeV-electrons in Y-Ba-Cu-O crystals, to be used as a novel technique for investigating characteristics of HTSC. In 1992 Dabagov was nominated as a Research Director at the International Institute for Roentgens (a former KIAE Laboratory), which aimed at the development of novel beams optics based on capillary/polycapillary systems.

During the period of 1992-1995 Dabagov proposed and developed the wave theory for neutral particles

passage through capillary structures (from micro/surface to nano/bulk channeling) that allowed new features of X-rays and thermal neutrons propagation in periodical structures to be predicted and observed successfully; within the project at the Hahn-Meitner Institute (by the invitation of Prof F. Mezei) together with Kumakhov he has realized the first neutron capillary bender.

During 1994-1998 Dabagov led the project at the Laboratory for High Energy Electrons of P.N. Lebedev Physical Institute RAS by the invitation of Acads. O.N. Krokhin and V.L. Ginzburg that was dedicated to studying coherent phenomena in SR focussing by means of various capillary/polycapillary systems.

Since 1998 Dabagov has performed his research within the framework of the international projects on channelling of X-rays and neutrons in various capillary-based structures at the National Institute of Nuclear Physics (INFN) and led the group at the National Laboratories of Frascati (LNF). Dabagov was a principal investigator of a number of projects at both INFN and CERN on interaction of charged and neutral particles in strong external fields of various origins within the research program on the advanced techniques of particle acceleration and novel powerful sources of electromagnetic radiation.

Since 1990 Dabagov has participated in many Soviet Union, Russian, Former-Soviet States, European and USA conferences, workshops, and schools as a member of Advisory Boards, Program and Organizing Committees; he is the chairman of the International "Channeling" conference "Charged and Neutral Particles Channeling Phenomena".

Presently, Dabagov, Dirigente di Ricerca, INFN, is the head of new LNF laboratory XLab Frascati, Group Leader at LPI RAS, and Professor of National Research Nuclear University MEPhI.

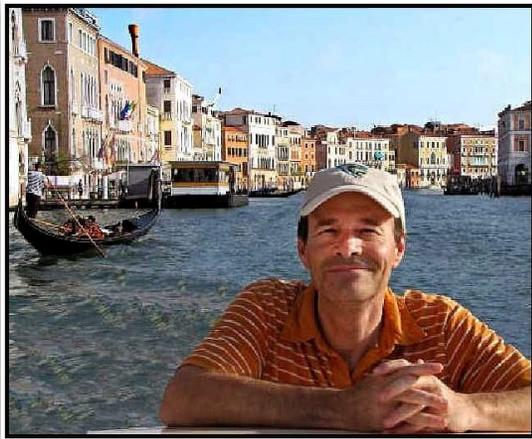
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.../Profile of Member standing for Vice President, North America

Profile of Member Standing for Vice President – North America

Lawrence Hudson

N.I.S.T., Gaithersburg, U.S.A.



Since 1990, Larry Hudson has worked as a physicist at the National Institute of Standards and Technology (NIST), USA.

Dr. Hudson's science career began as a flight controller for the US Space Shuttle Orbital Flight Test Program before attending graduate school at Vanderbilt University with NASA support to work on radiation interactions with surfaces. Later at NIST, this theme continued with work on the pre- or post-flight calibrations of five x-ray astronomy platforms for NASA.

At NIST Hudson leads a program that produces custom-designed calibrated curved-crystal spectrometers that are fielded to help characterize the performance and spectra from exotic x-ray sources including the electron beam ion trap, the electron cyclotron resonance ion source, advanced medical radiography sources, laser-produced plasmas, terawatt pulsed accelerators, ultrafast petawatt lasers, and inverse-Compton backscatter sources. Producing over 100 archival publications, this work is rooted in a culture of instrument making and an infrastructure of fundamental precision metrology efforts, including absolute x-ray wavelength determination (at the

femtometer level) in support of high-accuracy transfer standards needed in fundamental and applied experiments around the world.

After the deliberate contamination of the US mail with anthrax, Hudson assisted in design and coordination of experiments for the White House Task Force on Mail Irradiation resulting in the development of the protocol still in use to sanitize government mail with industrial x-ray sources. With sponsorship of the US Department of Homeland Security, Hudson currently serves as the NIST project leader for the development of national and international measurement standards needed to test and evaluate the technical performance and radiation safety of the nation's x-ray and gamma-ray security screening systems in all venues in which they are deployed. This is accomplished through a corpus of new documentary standards, test methods, test artifacts, dosimetry protocols and technical guidance documents, supported by NIST measurement science and computational modeling. This work fills well-documented gaps in transportation and commercial security that have been highlighted in Executive and Legislative requirements for 100% screening of baggage, cargo, and airline passengers.

Statement: Having had the privilege of co-editing of the Bulletin of IRPS for the last decade, and previously serving as an Executive Councillor and Vice President of the Society, I have been well positioned to observe the high spirit and quality of the leadership, participants, and the mission of IRPS. I am particularly impressed by the breadth of the radiation physics and geography represented at the Symposia. It is my intent that the Society continues to make the fruitful interconnections across both subject matter and geography that will advance our common causes within the radiation physics community.

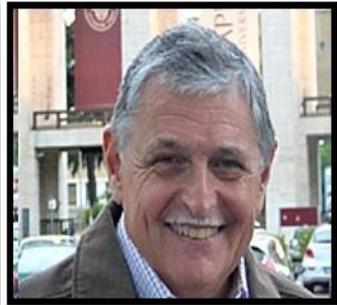
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.../Profile of Member standing for Vice President, South and Central America

Profile of Member Standing for Vice President South and Central America

Marcelo Rubio

*Aluariz de Arenales 230, B Juniors, Cordoba,
Argentina*



Marcelo Rubio married, two children, is a physicist at the Centro de Excelencia en Productos y Procesos de Córdoba (CEPROCOR) in the Province of Córdoba, Argentina.

He has worked in the Radiation Laboratory of CEPROCOR since 1995. He also has taught at the Faculty of Mathematics, Astronomy and Physics (FAMAF) at the University of Córdoba since 1978 and is Member of the Scientific Research Career of CONICET of Argentina. During the period 1988-1992 he was Vice-Dean of the Faculty.

After obtaining his M.Sc. in Physics (1978) and his PhD in Physics from the University of Córdoba (1985), Professor Rubio became a researcher in atomic and nuclear spectroscopy, with international research activities in Brazil and Italy, being responsible for developing research projects for Argentina in the Frascati and Campinas synchrotron laboratories.

He developed postdoctoral activities at the University of Rome "La Sapienza" in Medical Physics,

later serving as President of the Medical Physics Society of Argentina in 1991-1993. His research progressed from fundamental parameters applied to XRF spectroscopy, to diagnostic radiology, characterization of biopolymers by SR μ XRF and X-ray microtomography. Dr. Rubio is author of 50 scientific publications in international journals and more than 60 scientific papers published as proceedings of international conferences, prospective studies from Latin America or virtual items. He is the author or coauthor of six book chapters on XRF subjects and scientific opinion.

In the field of science policy activities, Dr. Rubio was Secretary of State for Science and Technology of the Province of Córdoba (1995-1999) and Director of the Scientific Advisory Council of the National Government (2000-2001). In 2008 he served on the National Government as President of the National Funding Agency of Argentina, and since 2009, Dr. Rubio has returned to his research and academic activities.

Dr. Rubio was one of the founders of CEPROCOR and manager of the μ Sat VICTOR project launched successfully in 1996 as the first microsatellite of Argentina.



.../Profile of Member standing for Vice President, South East Asia

Profile of Member Standing for Vice President – South East Asia

Pradip Sarkar

Homi Bhabha National Institute in Mumbai, India.



Dr. Pradip Kumar Sarkar was born on February 17, 1951 in India, graduated from the Calcutta University with honours in Physics, did his M.Sc. from the Bombay University in 1974 and completed his Ph.D. in 1978.

Presently he is occupying the position of a Distinguished Fellow in the Manipal Centre for Natural Sciences, Manipal University after his retirement from the Bhabha Atomic Research Centre, Mumbai in 2013 as Head, Health Physics Division.

He joined the Bhabha Atomic Research Centre, Mumbai in 1970 and worked as an operational Health Physicist in the Apsara research reactor and Van-de-graaff particle accelerator and carried out research on the topic: Response of plastic scintillator to neutrons, gammas and charged particles. He also carried out research on theoretical analysis of Monte Carlo radiation transport techniques for statistical error reduction by theoretically estimating the effectiveness of different variance reduction techniques, which was presented as a dissertation to Gujarat University for the award of the Ph. D. degree.

In 1979 he was posted as a Scientific Officer in the Variable Energy Cyclotron Centre, Kolkata to carry out safety surveillance of the workers in the K-130 room temperature cyclotron. He was involved in the safety review of the design of the K-500 superconducting cyclotron to be commissioned in Kolkata, and carried out research activities related to measurement as well as theoretical analysis of energy and directional distributions of thick target neutron yield from charged particle interactions in various elements.

Designated as Head, Accelerator Radiation Protection Section he supervised the safety surveillance as well as

research activities in the Variable Energy Cyclotron at Kolkata, in the Electron Storage Ring Facilities at Indore and in the Pelletron Facility at Mumbai.

In 2009 he was posted at Bhabha Atomic Research Centre, Mumbai and designated as Head, Health Physics Division for overall safety supervision of different nuclear facilities located all over India.

He has been appointed as a Professor in the Homi Bhabha National Institute and has more than 100 publications in peer reviewed international journals.

Past and current research :

Measurements of thick target neutron yield distributions from light or heavy ion induced nuclear reactions were carried out to obtain useful data for radiological safety and medical applications of particle accelerators. Additionally, such data were analysed to gain insights into the nuclear reaction mechanisms particularly about the initial stages of such reaction mechanisms.

Neutron ambient dose equivalent was measured using conventional neutron dose equivalent (NDE) meters and was also estimated from the measured energy distributions of neutron yield using the time of flight and pulse height unfolding techniques. Theoretical computations of neutron yield distributions were done using several nuclear reaction model codes. A nuclear reaction model algorithm based on two-body scattering kinematics was developed to estimate the pre-equilibrium nucleon emissions from heavy ion induced reactions.

Using the Monte Carlo code FLUKA, the photoneutron yields were computed in terms of energy distribution from the dominant GDR mechanism and also from the sum of all other components in the incident electron energy range of 100 MeV to 2.5 GeV. An empirical relation is formulated for the GDR where with the

.../continued

inclusion of the neutron separation energy of the target in addition to its mass and charge, it is possible to have a linear fit to the yield.

An unfolding technique based on genetic algorithms and fuzzy Monte Carlo has been developed to estimate the neutron energy spectrum from measured data, which takes into account propagation of errors from both measurements and the response matrix, is general enough to consider both under-determined and over-determined problems and eliminates the necessity of providing a good guess spectrum.

Monte Carlo simulations have been carried out using the FLUKA code to improve the neutron ambient dose equivalent [H*(10)] response of the zirconium-lined portable neutron counter (ZReC), responding satisfactorily for high energy neutrons up to 1 GeV, by introducing various neutron absorbers in the system. such as cadmium, gadolinium, natural boron, enriched 10B and borated polythene.

Application of wavelet based analysis of measured data has been carried out to improve the detection limit and statistical uncertainty in the case of environmental

monitoring and radiological safety.

The ICRP/ICRU adult male reference voxel phantom incorporated in Monte Carlo code FLUKA has been used for estimating specific absorbed fractions (SAFs) for photons due to the presence of internal radioactive contamination in the human respiratory tract (RT).

A methodology was developed to estimate embedded activity of radio isotopes in a wound at an unknown depth. Theoretical calibration of an array of high-purity germanium detectors is carried out using the Monte Carlo code 'FLUKA' for a ²⁴¹Am source embedded at different depths in a soft tissue phantom simulating the palm of a worker

A new methodology has been established to estimate neutron ambient dose equivalent from measured data of prompt gamma emissions from high density polyethylene.

Statement: The subject of radiation physics is very dear to my heart. I have worked in this field for many years and wish to continue working in the same field in the future.

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.../Profile of Member standing for Vice President, North East Asia

Profile of Member Standing for Vice President – North East Asia

Ziyu Wu

*National Synchrotron Radiation Laboratory,
University of Science and Technology of China,
Hefei Anhui, China*



- > Full professor of the Beijing Synchrotron Radiation Facility
- > Chairman of the Synchrotron Radiation Committee of China
- > Winner of the Chinese National Science Fund for Distinguished Young Scholars

- > Member of the Discipline Inspection Group, Academic Degrees Committee of Chinese State Council
- > Chief scientist of the National Key Basic research and development plan (973)
- > Leader of the Chinese National Creative Research Group
- > Vice president of the International Radiation Physics Society (IRPS)
- > Member of the International Advisory Committee of the Vacuum Ultraviolet and X-Ray Physics Conference
- > Member of the International Advisory Committee for X-ray microscopy Conference
- > Member of the extended Executive Committee (EC) of the International XAFS Society (IXAS)
- > Chairman of the 15th International Conference on X-ray Absorption Fine Structure (XAFS15)
- > Co-chairman of the 11th International Conference on X-ray microscopy (XRM 2012)
- > Chairman of the 38th International Conference on Vacuum Ultraviolet and X-ray Physics (VUVX 2013)
- > Chairman of the 13th International Symposium on Radiation Physics (2015)

Dr. Ziyu Wu received his PhD in Physics at the *University of Science and Technology of China (USTC)*

in 1988 and after a postdoctoral position at the *International Centre for Theoretical Physics (ICTP)* and at the *International School for Advanced Studies, Trieste (SISSA)* in Italy from 1988 to 1990. He was postdoc at the *Laboratori Nazionali di Frascati* of the *Istituto Nazionale di Fisica Nucleare (INFN)* from 1990 to 1992 and Associated Scientist to the INFN from 1992 to 2008.

He was the scientific director of the *Beijing Synchrotron Radiation Facility (BSRF)* from 2001 to 2008. From 2009 to 2014, he was the Director of the *National Synchrotron Radiation Laboratory (NSRL)* of China, where the commissioning of the new third-generation synchrotron radiation ring has just been completed. At present, he is the director of the *Center for Multi-disciplinary Research* of the *Institute of High Energy Physics* of the *Chinese Academy of Sciences*, and chairman of the *Chinese Synchrotron Radiation Committee*. He is a recognized theoretician and expert of X-ray absorption fine structure spectroscopy (XAFS), photoelectron spectroscopy (PES) and X-ray phase contrast imaging.

Throughout his career he has supervised more than 50 Ph.D. students and co-authored more than 300 papers published in important international journals including *Science*, *Nature*, *PNAS*, *Phys. Rev. Lett.*, etc., with more than 4000 citations.

For his great scientific contributions given to the promotion of the scientific collaboration between the P.R. of China and Italy, in 2013 he was honored by the Italian government with the title of "Commendatore" of the Order of the Silver Star.

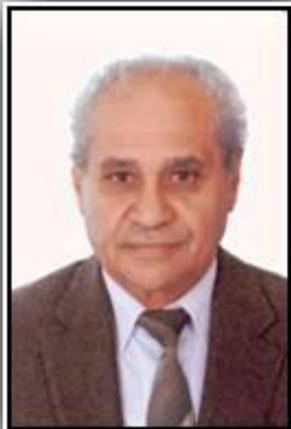
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.../Profile of Member standing for Vice President, Africa and Middle East

Profile of Member Standing for Vice President Africa and Middle East

Mohamed A.M. Gomaa

*Atomic Energy Authority, Nasr City,
Cairo, Egypt*



BSc, Physics, Alexandria
University

PhD Radiation Physics,
Middlesex Hospital
Medical School,
London University,
1968

Current Position :

Radiation Protections Expert and Consultant and
Emeritus Professor of Radiation Physics,
Atomic Energy Authority, Cairo, Egypt
Radiation Protection Expert, Egyptian Ministry
of Health, from 1980

Consultant, Radiation Protection Expert, and
Nuclear Safety, Egyptian Syndicate of
Scientific Profession, 2004

Previous Positions :

Vice President of Egyptian Atomic Energy
Authority (EAEA) for training and
international cooperation, 1999-2000

Chairman of Nuclear Research Center, EAEA,
1997

Chairman Atomic Reactors Division, EAEA,
1995

Head of Radiation Protection Department, EAEA,
1983 - 1985

Head of Physics Dept., College of Education, King
Saud University, Abha branch, Saudi Arabia,
1984-1988

Assistant Professor, College of Science, Phys
Dept, Basrah University, Iraq, 1975-1979

Lecturer, from 1969 till 1975 at Radiation
Protection Dept at Atomic Energy
Authority of Egypt

Demonstrator from 1962-1969 at Radiation Protection
Dept at Atomic Energy Authority of Egypt.

Fellowship at London university for PhD studies in
Radiation Shielding , from 1964- 1968

International and National Representations

- Egypt representative at World Health Organization,
Global Initiative in Radiation Safety of Health
Care Settings, Geneva, Swizerland, from Dec
2008
- WHO Expert at International Health Regulations,
Rabat, Morocco, 2012
- Vice President of International Radiation Physics
Society for Africa and Middle East, from 2009 to
2015
- Conference Scientific Secretary of the Radiation
Physics and Protection Conferences, from 1992
Atomic Energy Authority, Cairo, Egypt
<http://www.rphysp.com>
- Conference scientific secretary of AFROG-II,
Cairo, Egypt, 2002
- Egyptian coordinator of AFRA Medical Physics
Project, 2001 till 2005.
- Egypt representative at Arab Atomic Energy
Authority Activity planning Meeting, Tunis, Oct
2008.
- IRPA- Egypt President, from 1992,
<http://www.irpa-egypt.com>
- Egypt representative to 12th International Radiation
Protection Association (IRPA), Argentina, 2008
- Egyptian Representative at United Nations Committee
of the Effects of Atomic Radiation UNSCEAR ,
from 2001. Rapporteur of UNSCEAR from 2008-
2012

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International and National Representations (continued)

- Egyptian Representative at International Atomic Energy Agency (IAEA), Technical Committee Meeting dealing with Upgrading International Basic Safety Standards for protection against Ionizing radiation, Vienna, July 2007
- Congress Scientific Secretary of the second all African IRPA regional radiation Protection Congress, April 2007 and Radiation protection workshop March 2010
- Egyptian Representative of IAEA Technical cooperation meeting dealing with radiation occupational exposure, Cairo, 2007

Scientific Societies Memberships :

Health Physics Society, USA

American Nuclear Society, USA.

International Radiation Physics Society,

CPhys, MInstP at British Institute of Physics,
UK

CRadP, MSRP, Society of Radiological Protection,
U K

International Radiation Protection Association
(IRPA)

Egyptian Society of Nuclear Sciences and
Applications

Egyptian Society of Radiation Sciences and
Applications

Egyptian Nuclear Physics Association

Egyptian Society of Medical Physics

Egyptian Society of Pure and Applied Biophysics

Egyptian Society for Nuclear Medicine Specialists

Supervisor of Radiation Protection Consultation
and Services Project, EAEA, Cairo

Radiation Protection Expert at several Egyptian
radiation facilities.

Awards :

National Physics Award, 1976, Egypt

National Environmental Research Award, 1992,
Egypt

EAEA Scientific Excellence Award, 1995

EAEA Scientific Recognitions Award, 2011



.../Profile of Member standing for Vice President, Australasia and Oceania

James Tickner

C.S.I.R.O, Australia



Dr James Tickner is leader of the X-ray Technologies team in CSIRO, the Australian Government's national research organisation.

He leads a group developing novel X-ray and nuclear-based instruments to solve challenging measurement and imaging problems in the minerals and security industries.

The group focuses on techniques that can be used to measure bulk materials in harsh environments, including X-ray fluorescence and diffraction and radiography using X-rays, gamma-rays and neutrons, and gamma-ray and neutron activation analysis. Dr Tickner's research speciality is the development of Monte Carlo modelling techniques and their application to design and optimise new radiation-based instruments.

Taking instruments from the concept stage through to full commercial implementation is an important part of Dr Tickner's role and his group maintains strong links with the major global minerals and security companies. Together with Dr Sowerby, he invented the fast-neutron/X-ray radiography concept for air cargo screening; systems using this technology developed with a commercial partner are now being sold and installed worldwide.

Dr Tickner received his D.Phil in particle physics from Oxford University in 1997 and has worked at

CSIRO since 1998. He has published more than 100 papers and patents in the fields of nuclear, X-ray and particle physics. He has received several significant awards, including CSIRO medals for research and the promotion of excellence in young scientists, the Australian Academy of Science's Frederick White prize and the Eureka prize for science in support of defence or national security.

He is an active supporter of young researchers, and science-industry engagement, and helped to launch the Global Young Academy, the Australian Early-Mid Career Researchers Forum and the Australian Science and Innovation Forum

Statement: I have two passions in my scientific life that I would bring to a role with the IRPS.

The first is a conviction that science has a place in broader society and that research conducted only with an eye to publications and approbation from other scientists is a sterile endeavour. All scientists need to communicate their research to a wider audience, contribute to national and international debates and the development of policy, and work to see their research adopted by industry. Scientific societies such as the IRPS need to contribute their expertise with the authority that comes from the mandate of their membership.

My second passion is for the role of young researchers. Many countries stifle their brightest and most creative young scientists with limited funding opportunities and tenuous job security. I believe that all science organisations have an essential role to play to nurture, bring together and support the next generation of young researchers.



.../ Members standing for Vice President, Industrial Applications and Membership Officer

**Member Standing for
Vice President
Industrial Applications**

Robin Gardner



Robin Gardner, founder of the Industrial Radiation and Radioisotope Measurement Applications (IRRMA) series of topical meetings, presently standing for the newly-created office of Vice President for Industrial Applications

**Member Standing for
Membership Officer**

Elaine Ryan



Elaine Ryan has served as membership Secretary for the past five years, and now stands for election to a newly-created office of the Council, Membership Officer.



.../Profiles of Members standing for Executive Councillor - 6 year term

Profile of Member Standing for Executive Councillor – 6 year term

David Bradley

Department of Physics, University of Surrey, Guildford, Surrey, UK



The IRPS is an organisation to whose furtherance I can truly claim to be dedicated. Indeed, my involvement in IRPS reaches back to the birth of the Society, participating in the organisation of the Symposium ISRP-2 in Penang (in 1982) at a

time at which the protem committee charged with steering its inception was first set up.

Being too junior to be a member of that committee (the names of which included Joseph Rotblat, Daphne Jackson, Didier Isabelle and Ananda Mohan Ghose) I played a not unimportant role in behind-the-scenes organisational matters. (A.M. Ghose, my PhD supervisor at the time of ISRP-2, was together with John Hubbell, one of the two originators of the idea of the Society. Given the situation, I found myself steered into service.)

In the company of Richard Pratt and John Hubbell, I was to go on to help write the constitution of the Society, a document that remains largely unscathed, undoubtedly due to the efforts of Richard and John, and to be Assistant Editor and subsequently Editor of the very earliest editions of IRPS-NEWS, maintaining this means of communication with the membership for close to a decade.

In more recent years I have been an organiser of various of the Symposia and also Editor of several of the Proceedings of ISRP's.

A regular attendee of the Council meetings, I am proud to have spent time in providing for the needs of the Society. ISRP is a Society of members, providing an important vehicle for many very important aims of scientists involved in a panoply of radiation physics interests. The Society is nothing without its membership, and its aims and ambitions are important to me. To remain in service to the Society would be my pleasure and I would be glad of your support.

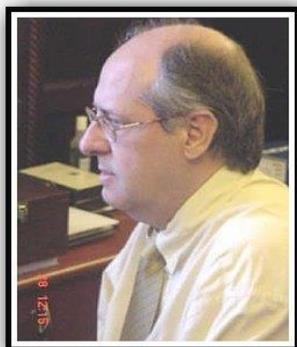


.../Profile of Member standing for Executive Councillor - 6 year term

Profile of Member Standing for Executive Councillor – 6 year term

Odair Gonçalves

Comissao Nacional de Energia Nuclear (CNEN), Rio de Janeiro, Brazil



Odair Dias Gonçalves, born 25 June 1952, is a physicist with a PhD in Nuclear Physics, obtained at the Instituto de Física of the Federal University of Rio de Janeiro (UFRJ), Brazil in 1987.

Since then he has been cooperating with scientists from many parts of the world, such as Germany, Portugal, England and the USA where he was first invited by Richard Pratt, an important colleague to him. Most of his collaborators are now close friends and IRSP members, among them Mic Farquharson, Isabel Lopes, Richard Pratt, David Bradley, Paul Bergstrom and Anselmo Paschoa.

Odair is the author and co-author of about 50 papers and 3 scientific books. He has been working at the Federal University of Rio de Janeiro (UFRJ) since 1975. Over a period of twenty-eight years, he has built his career as a teacher, researcher, university Professor and academic adviser. He acquired experience in various areas, including Nuclear Physics, Nuclear Instrumentation, Nuclear Energy, Radiation Protection, Medical Physics and Radiation Physics. Recently he was head of the Gamma Rays Laboratory at the Physics institute, a facility devoted to study the interaction of keV and MeV photons with matter.

In 1993 he was appointed as President of National Nuclear Energy Commission (Comissão Nacional de Energia Nuclear - CNEN) the Brazilian nuclear regulatory organ with 3000 employees and comprising five research institutes and offices all over the country.

Between 2009 and 2012 Odair was elected president of the International Radiation Physics society and, as consequence of the Presidency, was appointed as Chair of the Advisory Board for the period 2012 through 2015 served both as head of the IRPS Advisory Council and Chair of the 2nd International Radiation Physics Symposium.

He was always interested in the social aspects and consequences of science including financing and policies, having taken part in many activities as:

- Member of the "Experts Group" designated to evaluate the National Nuclear Energy Commission (CNEN) Activities: 2002
- Member of the Sponsorship Commission of the Deutscher Akademischer Austauschdienst (DAAD): 1986 - present
- Consultant of the *National Council for Scientific and Technological Development* (CNPq): 1986-present
- Member of the "Experts Group" of *The Brazilian Physics Society* (SBF) designated to evaluate the National Nuclear Brazilian Policy: 1989 - 1991
- Regional Secretary of *The Brazilian Physical Society* (SBF): 1988 - 1989

Although his administrative tasks as head of The Brazilian Nuclear Energy Commission required new obligations, it also brought new valuable experience to his life. Between his duties, are included:

- Head of the Administrative Council of the companies: *Indústrias Nucleares Brasileiras* and of the *Nuclebrás Equipamentos Pesados*
- Advisor and second for the Brazilian representative at the *Governors Board of the International Agency of Atomic Energy in Vienna, Austria*
- Brazilian Representative in the *Nuclear Suppliers Group*
- Brazilian Representative at the *ABACC, Agência Brasil Argentina de Contabilidade e Controle*

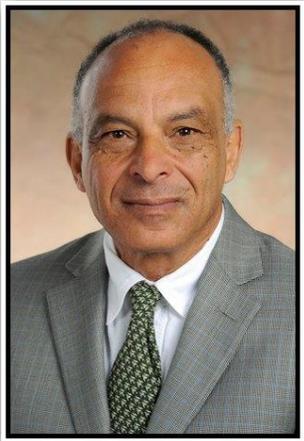
Statement: I have been a part of the IRPS since 1988. The society and the associated International Symposia, through the contact with distinguished scientists, continue to be of significant relevance to my career. It would be an honour to serve as an officer of the International Radiation Physics Society.

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.../Profile of Member standing for Executive Councillor - 6 year term

Esam M.A. Hussein

*Engineering and Applied Science, University of Regina,
Saskatchewan, Canada*



Esam M. A. Hussein is presently the Dean of Engineering and Applied Science at the University of Regina, Saskatchewan, Canada.

After completing his undergraduate studies and a Master's degree in nuclear engineering

at Alexandria University, Egypt, he earned a PhD in nuclear engineering from McMaster University, Canada.

Before joining the University of Regina, he was a professor in the Faculty of Engineering at the University of New Brunswick, Fredericton, Canada,

and prior to that he was employed as a Nuclear Design Engineer at Ontario Hydro (currently Ontario Power Generation).

Dr. Hussein's research focuses on the industrial and medical uses of nuclear and atomic radiation for non-destructive testing and imaging and for the detection of threat materials.

He has published numerous scientific papers and industrial reports, and is a holder of six patents, the author of four books, and a receiving editor for Applied Radiation and Isotopes.

He is a recipient of the Canadian Nuclear Innovation Achievement Award in June 2003, and the Sylvia Fedoruk Award - 2000 of the College of Physicists in Medicine and the Canadian Organization of Medical Physics.



.../Profile of Member standing for Executive Councillor - 6 year term

Profile of Member Standing for Executive Councillor – 6 year term

Isabel Lopes

Department of Physics, University of Coimbra, Portugal



Isabel Lopes has worked in the field of radiation physics for more than twenty years. She studied under Armando Policarpo at Coimbra University, Portugal, Werner Schmidt at Hahn- Meitner Institut of Berlin, Germany, and Tadayoshi Doke at Waseda University of Tokyo, Japan.

She was an invited researcher of the Hahn-Meitner Institute and she was awarded a one-year fellowship from the Japan Society for Promotion of Science (JSPS).

Since she obtained her Ph.D. in Radiation Physics from the University of Coimbra, she has worked in several national and international research projects. Her main research interests have been focused on the R&D of liquid-rare-gas radiation detectors from the point of view of both the physics processes involved in the radiation detection and their applications to the direct search for dark matter, to medical imaging with radionuclides, and to nuclear and high energy physics experiments.

From 2002 onwards, her research has been mostly focused on the dark matter search with liquid xenon

detectors, first in the framework of ZEPLIN-III Project

<http://www.hep.ph.ic.ac.uk/ZEPLIN-III-Project/>

and since 2010 within the LUX and LZ experiments

http://lux.brown.edu/LUX_dark_matter/Home.html
and <http://lz.lbl.gov/>, respectively.

I. Lopes has over 130 refereed publications with more than 4700 citations. Her list of publications is available at

http://www.researchgate.net/profile/M_Lopes/publications.

She is currently Associate Professor at the Physics Department of Coimbra University and researcher at the Laboratory of Instrumentation and Experimental Particle Physics (LIP).

Statement: There are two main features of IRPS that strongly motivate me to serve the Society. First, it provides an international forum of researchers engaged in a large variety of different topics, both fundamental and applied, under the broad umbrella of Radiation Physics. Personally, I find this diverse and interdisciplinary character very stimulating and important. Second, it truly promotes international links, collaborations and exchange of knowledge. I am very keen to contribute to maintain and reinforce these roles of IRPS. In addition, I would like to work towards enhancing the Society's appeal to young researchers.



.../Profile of Member standing for Executive Councillor - 6 year term

Profile of Member Standing for Executive Councillor – 6 year term

Tomáš Trojek

Czech Technical University in Prague, Czech Republic



Tomas is the head of the Department of Dosimetry and Application of Ionizing Radiation at the Czech Technical University (CTU) in Prague. He graduated in Nuclear Engineering in 2001 and defended his PhD thesis five years later at the CTU.

A part of his PhD thesis was done at the ISIB in Brussels and the UPV in Valencia. In 2013 he became Associate Professor in Applied Physics.

His research activities have included Monte Carlo calculation of radiation transport in matter, radionuclides in environment, high energy physics, and X-ray fluorescence analysis and its applications.

He has worked in the Laboratory of X-ray spectrometry at the CTU since 2001, where he was initially engaged with X-ray fluorescence analysis of art and archaeological objects. His further activities in this field are related to in-situ analysis and elimination of disturbing effects in quantitative data

evaluation. In 2011, he proposed a technique enabling us to separate relief and elemental images from XRF scanning of objects with irregular shape. Also, he has been promoting the use of Monte Carlo simulation in optimizing XRF setup and quantitative analysis. At present, he is engaged with confocal XRF and other depth-profiling XRF modalities.

Apart from the X-ray techniques, Tomas was also involved with monitoring of radionuclides in the vicinity of the Nuclear Power Plant Temelin in Czech Republic. It included in-situ gamma spectrometry and laboratory analyses of biota samples.

Last but not least, he has taken part in the experiment DIRAC in the CERN laboratory in Switzerland since 2001. The main goal of this experiment is to measure the lifetime of atoms made of Pi and K mesons.

He is the author or co-author of more than 35 papers published in international journals and he was awarded the CTU Rector's Award for excellent scientific results in the year 2010.

Tomas has been a member of IRPS for more than 5 years and participated in organizing the conferences held in Prague, i.e. ISRP-8 (2000), IRRMA-7 (2008), and ICDA-1 (2013).



Executive Councillors continuing for 3 year term (no voting required)

Richard P. Hugtenberg *Swansea University, Swansea, Wales, U.K.*

Avneet Sood *Los Alamos National Laboratory, Computational Physics Division,
Los Alamos, NM U.S.A*

Peter K.N. Yu *Department of Physics and Material Science,
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13th International Symposium on Radiation Physics

7-13 September, 2015, Beijing, P. R. China

1ST CONFERENCE NOTICE

We have great pleasure in inviting you to attend the upcoming 13th International Symposium on Radiation Physics (ISRP-13), which will be held in September 7-13, 2015, Beijing, China.

This event is hosted by the University of Science and Technology of China (USTC), the Institute of High Energy Physics (IHEP), the Chinese Academy of Sciences (CAS), the International Radiation Physics Society (IRPS), and with support from the National Natural Science Foundation of China (NSFC).

The event is devoted to current trends in the broad area of radiation physics and more than 350 attendees from all over the world are expected to participate. This conference will include two categories of invited talks. The first one is expected to be a review of a specific area, covering the historical development, the current situation and future perspectives within both experimental and theoretical aspects. The second will deal with the hot topics and projects in the Radiation Physics Area. Submitted papers will be presented in oral or poster format.

Conference topics include:

- Theoretical investigation and Quantitative analytical techniques in radiation physics
- New radiation sources, techniques and detectors
- Absorption and Fluorescence spectroscopy (XAFS, XANES, XRF, Raman...)
- Applications in quantum control
- Applications in Material science, Nano-science and Nanotechnology
- Applications in Biology and Medical science
- Applications in Space, Earth, Energy and Environmental sciences
- Applications in Cultural heritage and Art
- Applications in Industry
- Radiation physics and Nuclear fuel cycle

The proceedings of the ISRP-13 will be published in *Radiation Physics and Chemistry*, a peer-review journal from Elsevier, Inc.

For registration and other details please visit the ISRP-13 web site at
<http://isrp13.ustc.edu.cn/dct/page/1>
or send an email to isrp13@ustc.edu.cn or chuws@ustc.edu.cn

.../ Scientific Programme Committee and Advisory Board

13th International Symposium on Radiation Physics Continued

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THE 2015 INTERNATIONAL CONFERENCE ON APPLICATIONS OF NUCLEAR TECHNIQUES



June 14-20, 2015
Crete, Greece

CRETE15 is the thirteenth in a series of international conferences designed to provide an informal forum for scientists to present and discuss their research and new developments in a broad spectrum of applications of nuclear techniques.

Venue: Rithymna Beach Hotel, 78 km west of Heraklio, which is served by direct flights from Europe and Athens and by ferries from the port of Athens.



Photo courtesy of Rithymna Beach Hotel

TOPIC AREAS

- *Accelerators and neutron generators*
- *Cultural heritage and antiquities*
- *Detection of contraband & WMD*
- *Laboratory and industrial applications*
- *Medical and biological applications*
- *Modeling and simulations*
- *Nanotechnology and materials modification*
- *Neutrino applications*
- *Novel detectors*
- *Nuclear reactor applications*
- *Radiation dosimetry and protection*
- *Safeguards, security and forensics*

CONFERENCE ORGANIZERS

Anna Erickson (Chair, Georgia Tech)
Farzad Rahnema (Co-Chair, Georgia Tech)
Robert & Marianne Hamm (Co-Chairs, R&M Tech)
George Vourvopoulos (Chair Emeritus, WKU Emeritus)

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Demetre Zafiroopoulos (INFN)

www.crete15.org
info@crete15.org

DEADLINES

November 1, 2014	Abstract submission opens
January 15, 2015	Abstract deadline
March 1, 2015	Notification of authors
May 15, 2015	Reduced registration deadline
May 15, 2015	Hotel reservation deadline

Calendar

2015

14 – 20 June

CRETE -15

The 2015 International Conference on Applications of Nuclear Techniques

Crete, Greece

Full information on page 32 of this Bulletin

Contact :

Email : info@crete15.org

Website : www.crete15.org

7 – 13 September

ISRP-13

13th International Symposium on Radiation Physics

Beijing, P.R. China

(Venue to be advised)

Information in Conference Notice on pages 30-31 of this Bulletin

Contact : Professor Ziyu Wu

Email : wuzy@ustc.edu.cn or wuzy@ihep.ac.cn

INTERNATIONAL RADIATION PHYSICS SOCIETY

The primary objective of the International Radiation Physics Society (IRPS) is to promote the global exchange and integration of scientific information pertaining to the interdisciplinary subject of radiation physics, including the promotion of (i) theoretical and **experimental research in radiation physics**, (ii) investigation of physical aspects of interactions of radiations with living systems, (iii) education in radiation physics, and (iv) utilization of radiations for peaceful purposes.

The Constitution of the IRPS defines Radiation Physics as "the branch of science which deals with the physical aspects of interactions of radiations (both electromagnetic and particulate) with matter." It thus differs in emphasis both from atomic and nuclear

physics and from radiation biology and medicine, instead focusing on the radiations.

The International Radiation Physics Society (IRPS) was founded in 1985 in Ferrara, Italy at the 3rd International Symposium on Radiation Physics (ISRP-3, 1985), following Symposia in Calcutta, India (ISRP-1, 1974) and in Penang, Malaysia (ISRP-2, 1982). Further Symposia have been held in Sao Paulo, Brazil (ISRP-4, 1988), Dubrovnik, Croatia (ISRP-5, 1991) Rabat, Morocco (ISRP-6, 1994), Jaipur, India (ISRP-7 1997), Prague, Czech Republic (ISRP-8, 2000), Cape Town, South Africa (ISRP-9, 2003), Coimbra, Portugal (ISRP-10, 2006), Australia (ISRP-11, 2009) and ISRP-12 in Rio de Janeiro, Brazil in 2012. The IRPS also sponsors regional Radiation Physics Symposia.

The **IRPS Bulletin** is published quarterly and sent to all IRPS members.

The IRPS Secretariat is : Prof. Jorge E Fernandez (IRPS Secretary),
Universita di Bologna, Laboratorio di Ingegneria Nucleare di Montecuccolino
I-40136 Bologna, Italy
Phone : +39 051 2087 718 Fax: +39 051 2087 747
email: jorge.fernandez@unibo.it

The IRPS welcomes your participation in this "global radiation physics family."

INTERNATIONAL RADIATION PHYSICS SOCIETY

Membership Registration Form

1. Name : _____
(First) (Initial) (Last)

2. Date and Place of Birth : _____

3. Business Address : _____

(Post Code)

(Country)

Telephone: _____ Email: _____ Fax: _____

4. Current Title or Academic Rank (Please also indicate if Miss, Mrs., or Ms.): _____

5. Field(s) of interest in Radiation Physics (Please attach a list of your publications, if any, in the field:

6. Please list any national or international organization(s) involved in one or more branches of Radiation Physics, of which you are a member, also your status (e.g., student member, member, fellow, emeritus):

../Continued

7. The IRPS has no entrance fee requirement, only triennial (3-year) membership dues. In view of the IRPS unusually low-cost dues, the one-year dues option has been eliminated (by Council action October 1996), commencing January 1, 1997. Also, dues periods will henceforth be by calendar years, to allow annual dues notices. For new members joining prior to July 1 in a given year, their memberships will be considered to be effective January 1 of that year, otherwise January 1 of the following year. For current members, their dues anniversary dates have been similarly shifted to January 1.

Membership dues (stated in US dollars - circle equivalent-amount sent):

Full Voting Member: 3 years	Student Member: 3 years
Developed country \$75.00	Developed country \$25.00
Developing country \$30.00	Developing country \$10.00

Acceptable modes of IRPS membership dues payment, to start or to continue IRPS membership, are listed below. Please check payment-mode used, enter amount (in currency-type used), and follow instructions in item 8 below. (For currency conversion, please consult newspaper financial pages, at the time of payment). All cheques should be made payable to :

International Radiation Physics Society.

(For payments via credit card - <http://www.irps.net/registration.html>)

- [] (in U.S. dollars, drawn on a U.S. bank): Send to Dr W.L. Dunn, Dept. Mechanical and Nuclear Engineering, Kansas State University, 3002 Rathbone Hall, Manhattan, KS, 66506-5205. U.S.A.

Amount paid (in U.S. dollars) _____

- [] (in U.K. pounds): Send to Prof. Malcolm J. Cooper, Physics Dept., University of Warwick, Coventry, CV4 7AL, U.K.. Bank transfer details:

Account number: 30330701. Bank and Branch code: Barclays, code 20-23-55.

Eurochecks in U.K. pounds, sent to Prof. Cooper, also acceptable.

Amount paid (in U.K. pounds) _____

8. Send this Membership Registration Form **AND** a copy of your bank transfer receipt (or copy of your cheque) to the Membership Co-ordinator:

Dr Elaine Ryan
 Department of Radiation Sciences
 University of Sydney
 75 East Street, (P.O. Box 170)
 Lidcombe, N.S.W. 1825, Australia
email: elaine.ryan@sydney.edu.au

9.

Signature

Date