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# Radiation Safety Information Computational Center

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*Books worth reading once are worth reading twice; and what is most important of all, the masterpieces of literature are worth reading a thousand times.—John Morley*

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## Changes to the Computer Code and Data Collection

### [PSR-533/SQUIRT 1.1](#)

Battelle Memorial Institute, Columbus, Ohio, contributed SQUIRT (Seepage Quantification of Upsets In Reactor Tubes) to predict leakage rate and area of crack opening for cracked pipes in nuclear power plants. In all cases, the fluid in the piping system is assumed to be water at a given temperature and pressure. The

development of the SQUIRT computer model enables licensing authorities and industry users to conduct leak-rate evaluations for leak-before-break applications in a more efficient manner.

This Windows Version 1.1 is based on SQUIRT Version 2.4a with modifications and enhancements for single-phase liquid module, single-phase steam module and extremely tight cracks. Other enhancements include an option to account for the effect of weld residual stresses on the crack-opening displacements and associated leak rate, an option to incorporate the corrections to crack morphology parameters for tight cracks based on methodology proposed in NUREG/CR-6004 and new default crack morphology parameters for Primary Water Stress Corrosion Cracking (PWSCC). SQUIRT 1.1 runs on Windows-based Pentium computers. Executables created with Microsoft Quick Basic and Visual Basic 6.0 are included in the package. The package is transmitted on a CD with a self-installing Windows file that contains the executables, data files, test cases and reports. Source files are not included. Microsoft Quick Basic and Visual Basic 6.0; Pentium (P00533IBMPC00). References: Battelle Informal Report (March 24, 2003) and NUREG/CR-6004 (April 1995).

## **From a “Not so Former Shielder”**

In response the invitation to retired colleagues to let the shielding community know where you are now, we received the following from Keran O’Brien.

*Yes, I belonged to the Shielding Division before it became RPSD. I've been a member of ANS since about 1958. I retired from the Department of Energy's Environmental Laboratory in 1987, moved to Arizona, and was invited to join the adjunct faculty at Northern Arizona University. I am still working, probably harder than I have ever before in my whole life. My current interest is the propagation of cosmic radiation through the heliosphere. I gave a paper on the subject at the RPSD biennial meeting in Carlsbad, NM (in April).*

*“Ancora Imparo” means, “I am still learning.” The line is attributed to Michelangelo at the age of 87. I have a ways to go yet.*

*When I have time I go hiking, and have served as a volunteer for the Forest Service to help with closing trails during a bad fire season (one may be coming up this summer) and Forest Service archaeologists in the Kaibab National Forest from time-to-time.*

You can reach Keran O'Brien at [keran.o'brien@nau.edu](mailto:keran.o'brien@nau.edu).

## **AINSE Announces Nuclear Research Fellowships**

To take advantage of the capabilities of the new Open-Pool Australian Light-water (OPAL) research reactor which is expected to open in early 2007, the Australian Institute of Nuclear Science and Engineering (AINSE) will award two fellowships in 2006 for three-year appointments. They anticipate increasing the number of fellowships to six over the next three years. OPAL is being built by the Australian Science and Technology Organization (ANSTO) and will have ten times the capacity of the current ANSTO reactor with four neutron beams and nine different instruments designed to analyze material structure. Applicants are expected to have 3–8 years post-PhD experience. Applicants who are not Australian citizens are also encouraged to apply but must satisfy the conditions for access to the OPAL reactor at ANSTO. Details regarding the qualifications for the fellowships and contact information are available at <http://www.ansto.gov.au/ainse/postdoc/postdocfellows.html>.

## Obituary

**Owen Chamberlain**, Nobel Laureate, died February 28. He received his bachelor's degree from Dartmouth College in 1941 and enrolled in the fall for his graduate degree at the University of California-Berkeley (UC Berkeley). His education was interrupted when the US entered World War II and in 1942 he joined the Manhattan Project. He worked with Prof. Emilio Segrè at the Berkeley campus and later at the Los Alamos laboratory in the investigation of nuclear cross sections for intermediate-energy neutrons and the spontaneous fission of heavy elements. Chamberlain was a participant in Trinity, the first atomic bomb test, held in Alamogordo, New Mexico, in 1945. He resumed his graduate work in 1946 at the University of Chicago, mentored by Nobel Laureate Enrico Fermi, the world's leading authority on neutrons who had also been Segrè's mentor. After receiving a Ph.D. in physics he returned to UC Berkeley, where he accepted a teaching position; he became a full professor in 1958. He was reunited with Segrè at Lawrence's Radiation Laboratory, now known as the Lawrence Berkeley National Laboratory. In 1959, Segrè and Chamberlain were jointly awarded the Nobel Prize for Physics for their work on the discovery of the anti-proton. Read more at <http://nobelprize.org/physics/laureates/1959/index.html> or <http://www.lbl.gov/Science-Articles/Archive/Chamberlain-obit.html>.

## CONFERENCES, COURSES, SYMPOSIA

RSICC attempts to keep its users and contributors advised of conferences, courses, and symposia in the field of radiation protection, transport, and shielding through this section of the newsletter. Should you be involved in the planning/organization of such events, feel free to send your announcements and calls for papers via email to [riceaf@ornl.gov](mailto:riceaf@ornl.gov) with "conferences" in the subject line by the 20th of each month. Please include the announcement in its native format as an attachment to the message. If the meeting is on a website, please include the url.

Every attempt is made to ensure that the links provided in the Conference and Calendar sections of this newsletter are correct and live. However, the very nature of the web creates the possibility that the links may become unavailable. In that case, please call or mail the contact provided.

### MCNPX Workshops

Lead Teachers: Drs. John Hendricks, Gregg McKinney, Laurie Waters

Organizer: HQC Professional Services

Contact: [bill@mcnpxworkshops.com](mailto:bill@mcnpxworkshops.com)

Information: <http://mcnpxworkshops.com> and MCNPX homepage: <http://mcnpx.lanl.gov>

2006 Schedule		
June 12-16	Introductory	Santa Fe, NM
July 17-21	Intermediate	Bologna, Italy
July 31-Aug 4	Intermediate	West Point, NY
Sept 18-22	Intermed./Adv.	Santa Fe, NM
Oct 30-Nov 3	Intermediate	Tokyo, Japan

MCNPX is packed with new and exciting plotting features, including numerous mesh tally options which can be superimposed on your geometry plot and plotted within the MCNPX run, eliminating the need for post-processing and costly additional plotting package(s). You can plot particle flux, tracks, dosage, and energy deposition as well as source points and many others.

The workshops include hands-on instruction, generally on PC Windows machines. Subject to participant export

approval from the MCNPX beta test team, participants will be able to access the Fortran 90 version of MCNPX 2.4, the LA150 (150 MeV) cross-section data for over 40 isotopes for incident neutrons and protons and 12 for photonuclear interactions, and a notebook of viewgraphs.

Follow-up consultation for class participants will be provided.

The classes are taught by experienced MCNPX code developers and instructors. More information on code versions and capabilities is available at MCNPX Workshops web site <http://mcnpxworkshops.com>.

To register go to <http://mcnpxworkshops.com/regform.html>.

### **Year 2006 MCNP Class Schedule**

June 12–16:	Introduction to MCNP	Los Alamos National Laboratory
July 10–14:	Introduction to MCNP	Japan
Aug 22–24	Advanced Variance Reduction	Los Alamos National Laboratory
Aug 29–31	Advanced Criticality	Los Alamos National Laboratory

Year 2006 classes will showcase the latest release of MCNP, Version 5. All classes provide interactive computer learning with time available to discuss individual questions and problems with MCNP experts. While MCNP supports a number of platforms, LANL class computers are usually PCs. The class fee includes a notebook with all class viewgraphs and handouts, dinner the first evening, and snacks and refreshments provided during class breaks. Registration and the most current information can be found at <http://mcnp-green.lanl.gov/classinformation.html>. For information regarding the class in Japan - Contact: Dr. Tadakazu Suzuki - Research Organization for Information Science & Technology (RIST), (phone 029-282-8309,6335, fax 029-282-4282, email [tadakazu@tokai.rist.or.jp](mailto:tadakazu@tokai.rist.or.jp), <http://www.rist.or.jp/nucis>).

Introductory classes are for people who have little or no experience with MCNP. This class surveys the features of MCNP so the beginning user will be introduced to the capabilities of the program, and will have hands-on experience at running the code to solve simple problems. Course topics include Basic Geometry, Source Definitions, Output (Tallies) Specification and Interpretation, Advanced Geometry (repeated structures specification), Variance Reduction Techniques, Statistical Analysis, Criticality, Plotting of Geometry, Tallies, and Particle Tracks, and Neutron / Photon / Electron Physics.

Advanced classes are for people with MCNP experience who want to extend their knowledge and gain depth of understanding. Most areas of MCNP operation will be discussed in detail, with emphasis on Advanced Geometry, Advanced Variance Reduction Techniques, and other Advanced features of the program. Time will be available to discuss approaches to specific problems of interest to students.

### **Current Problems of Nuclear Physics and Atomic Energy (NPAE-Kyiv 2006)**

The organizing committee for Current Problems of Nuclear Physics and Atomic Energy (NPAE-Kyiv 2006) invites your participation in the conference which will take place May 29–June 03, 2006, at the Institute of the Post-diploma Education (<http://www.ipe.univ.kiev.ua>) of Kyiv National University. The program will include invited talks and scientific presentations on the following topics:

- Collective processes in atomic nuclei
- Nuclear reactions and processes with exotic nuclei
- Rare nuclear processes



- Relativistic nuclear physics
- Neutron physics and physics of nuclear reactors
- Problems of atomic energy and future reactors
- Applied nuclear physics and technique of experiments

Details and forms related to the meeting are available at the website

([http://www.kinr.kiev.ua/NPAE\\_Kyiv2006/](http://www.kinr.kiev.ua/NPAE_Kyiv2006/)) or you may contact Institute for Nuclear Research, Prospect Nauky, 47, Kyiv, 03680, Ukraine (phone +38 044 525 39 49, fax +38 044 525 44 63, email [NPAE-Kyiv2006@kinr.kiev.ua](mailto:NPAE-Kyiv2006@kinr.kiev.ua)).

### **PENELOPE Training Course/Tutorial**

The next PENELOPE training course/tutorial will be held from 4–7 July 2006, at the Facultat de Fisica (ECM), Universitat de Barcelona, Diagonal 647, 08028 BARCELONA, Spain. This course is addressed to researchers in radiation physics and its applications. The main objective is to provide participants with a detailed description of the 2006 version of [PENELOPE](#), with an ample perspective on Monte Carlo methods for simulation of electron/photon transport. The reliability of the interaction models and the accuracy of the numerical methods and approximations implemented in the code will be discussed. Examples of simulation results and benchmark comparisons with experiment will be presented. The course will include practical sessions on the use of the generic main programs, PENCYL (cylindrical geometries) and PENMAIN (quadric geometries), and on the design of the main program for specific applications. Details and registration information can be found at <http://www.nea.fr/html/dbprog/penelope2006.html>.

### **Practical MCNP for the Health Physicist, Medical Physicist, and Rad Engineer**

DATES: 17–21 July 2006 (4.5 days)

FEE: \$1,450 per person

PLACE: The MESA Complex, Room 130, University of New Mexico-Los Alamos Campus

The Los Alamos MCNP code is a general and powerful Monte Carlo transport code for photons, neutrons, and electrons. MCNP can be safely described as the “industry standard” with more than 600 person-years of development effort behind it. It is supported on a variety of platforms and is now accessible to health physicists, medical physicists, and rad engineers using desktop or laptop personal computers. This 4.5 day course introduces the basic concepts of Monte Carlo, demonstrates how to put together an MCNP input file, and illustrates some health and medical physics applications of the code. No prior knowledge of Monte Carlo is assumed.

All of the input and output files for the class demonstrations will be provided for self-study on a diskette. The course will focus on providing a practical boost toward learning the program and guiding the student toward useful applications. Extensive practice sessions are scheduled using a personal computer in class.

Registration is available online at: <http://drambuie.lanl.gov/~esh4/mcnp.htm>. Make checks (U.S. dollars on a U.S. bank ) payable to the University of California and mail with name, address, and phone number to: David Seagraves, Mail Stop J573, Los Alamos National Laboratory, Group HSR-4, MCNP Class, Los Alamos, NM 87545.

Inquiries regarding registration and class space availability should be made to David Seagraves, 505-667-4959, fax 505-665-7686, email: [dseagraves@lanl.gov](mailto:dseagraves@lanl.gov). Technical questions may be directed to Dick Olsher, 505-667-3364; email [dick@lanl.gov](mailto:dick@lanl.gov).

*Richard H. Olsher*

## PHYSOR 2006



The Canadian Nuclear Society has announced that the ANS Reactor Physics Topical PHYSOR-2006, “Advances in Nuclear Analysis and Simulation,” will be held in Vancouver, BC, Canada, Sept. 10–14, 2006. The meeting is sponsored by the Reactor Physics Division of the ANS and co-sponsored by several international societies. The conference will be held at the Hyatt Regency in downtown Vancouver.

You are invited to visit the meeting website at <http://www.cns-snc.ca/physor2006/> to obtain updated information and to download a copy of the [call for papers](#). The conference chair is Benjamin Rouben, FCNS Manager, Reactor Core Physics Branch, AECL Sheridan Park (phone 905-823-9060 x 4550, fax 905-822-0567, email [roubenb@aecl.ca](mailto:roubenb@aecl.ca)). The technical program co-chair is Ken Kozier, Atomic Energy of Canada Limited (AECL), Chalk River Laboratories, Chalk River, Ontario, Canada K0J 1J0 (phone +1-613-584-8811 + ext. 5059, email [physor2006@aecl.ca](mailto:physor2006@aecl.ca)).

## ISRP-10

The 10<sup>th</sup> International Symposium on Radiation Physics (ISRP-10) will be held at the University of Coimbra, Portugal, 17–22 September 2006. This event is organized jointly by the International Radiation Physics Society (IRPS) and the Physics Department of Coimbra University. The meeting is devoted to current trends in radiation physics research and will include a series of plenary talks given by prominent international researchers. The symposium in Coimbra is the latest in a series of triennial symposia which began in Calcutta in 1974 and continued in Penang (1982), Ferrara (1985), São Paulo (1988), Dubrovnik (1991), Rabat (1994), Jaipur (1997), Prague (2000) and Cape Town (2003). A 2½ day [Workshop on the Use of Monte Carlo Techniques for Design and Analysis of Radiation Detectors](#) will be held immediately prior to ISRP-10 (15–17 September 2006).

More information on the Symposium, the associate workshop, as well as on the venue, can be found at <http://pollux.fis.uc.pt/isrp10>.

## 2<sup>nd</sup> International Symposium on Radionuclide Therapy and Radiopharmaceutical Dosimetry



The 2<sup>nd</sup> International Symposium on Radionuclide Therapy and Radiopharmaceutical Dosimetry will take place in conjunction with the annual congress of the European Association of Nuclear Medicine (EANM) in Athens, Greece, September 30–October 4, 2006. As a separate track within the EANM congress this symposium will bring together disciplines concerned with radiopharmaceutical dosimetry and radionuclide therapy stimulating interdisciplinary scientific discussion. The EANM Dosimetry and Therapy Committees and colleagues from the MIRD committee of the SNM will join to coordinate the scientific committee and program for the meeting. All organizational matters will be handled by the EANM secretariat and congress office. Conference topics include:

- Clinical: mIBG and peptides
- Clinical: Radioimmunotherapy
- Clinical: Thyroid, bone pain palliation & miscellaneous
- Dosimetry: Data Collection Methods / Dosimetric Models / Pharmacokinetics
- Dosimetry: Quantitative Analysis and Treatment Planning / Dosimetry for Clinical Trials
- Biological and Long-Term Effects / Animal and in-vitro Studies
- Miscellaneous

The link to current information about the symposium can be found at [http://eanm06.eanm.org/programme/prog\\_isrtrd.php?navigationId=19&sessNavigationId=63](http://eanm06.eanm.org/programme/prog_isrtrd.php?navigationId=19&sessNavigationId=63).

## [ICNCT-12](#)

The Twelfth International Congress on Neutron Capture Therapy (ICNCT-12) will be held October 9–13, 2006, in Takamatsu, Kagawa, Japan. The meeting is sponsored by the International Society for Neutron Capture Therapy (ISNCT) with the society president, Yoshinobu Nakagawa of the Kagawa National Children's Hospital, acting as chairman of the organizing committee. The meeting will focus on the many significant developments that have been made in neutron capture therapy in biology, medicine, chemistry, medical physics and engineering, and clinical trials. One of the highlights of the presentations will be the report of results from our Japanese NCT teams of clinical trials on brain, skin and head and neck tumors. Results of recent treatments on liver and lung cancers will also be reported. These treatments have been carried out using a combination of BSH and BPA which have yielded successful results. The most up-to-date information as well as registration and submittal information can be found at the conference website: <http://icnct-12.umin.jp/index.html>.



## [First European Workshop on Monte Carlo Treatment Planning](#)



The European Workgroup on MCTP (EWG-MCTP) is sponsoring the First European Workshop on Monte Carlo Treatment Planning, October 22–25, 2006, in Gent, Belgium. The conference theme is “Introduction of MCTP into the Clinic.” The workshop will offer the opportunity for scientists to exchange information, to develop new ideas and initiate international collaborative programs on the exciting and fast developing research domain of Monte Carlo treatment planning. This workshop will also provide an overview of the current state of the art to clinical physicists who are thinking of introducing MCTP into their clinic.

The venue of the meeting is “Het Pand,” a former Dominican monastery located in the historical centre of the city. The oldest parts of the building date from the 13th century and houses some valuable collections of the University such as the Museum for the History of Medicine and the ethnographical and archaeological collections.

Scientific sessions will consist of general talks and poster presentations. The research topics covered will be the following:

- Industry – MCTPS
- 4D MCTP
- General multipurpose codes
- Dosimetry
- Photon MCTP
- Electron MCTP
- Proton MCTP
- Brachytherapy MCTP
- Clinical studies
- MC in optimisation
- Portal dosimetry

Inquiries may be sent to N. Reynaert, Lab for Standard Dosimetry Gent, Gent University –FANC, Proeftuinstraat 86 – B-9000 Gent, BELGIUM (phone + 32 9 264 66 48, fax + 32 9 264 66 96, email [nick.reynaert@ugent.be](mailto:nick.reynaert@ugent.be)). Details and updated information can be found at <http://www.ewg-mctp.ugent.be/>.

## PHYTRA1

The First International Conference on Physics and Technology of Reactors and Applications (PHYTRA1), will be held March 14–16, 2007, in Marrakech City, Morocco. This is the first International Conference organized by the Moroccan Association for Nuclear Engineering and Reactor Technology “GMTR” after a series of three national conferences. The objective is to provide scientists and engineers from different countries an opportunity to present their recent work in reactor physics and nuclear technology. Industrial vendors may exhibit their products and innovations in different domains related to reactor physics and nuclear technology. The PHYTRA1 conference will also be a celebration for the operation of the first research reactor (TRIGA Mark II) in Morocco which is expected to be commissioned in 2006.

Conference topics include:

- Deterministic and Monte Carlo Transport Theory Methods
- Reactor Core and Lattice Physics Methods
- Physics and Computational Methods for Advanced Reactors
- Reactor Theory and Reactor Concepts
- Neutron Kinetics and Dynamics
- Criticality and Safety Analysis
- Fuel Loading Optimization and Fuel Design
- Nuclear Data Analysis and Methods
- Computer Codes and Benchmarks
- Computational Methods for Research Reactors
- High Temperature Reactor Physics and Methods
- Reactor Thermal Hydraulics
- Radioactive Waste Management
- Research Reactor Utilization
- Reactor Dosimetry and Reactor Shielding

A one-page abstract should be sent by **July 15, 2006**, via email, to Pr. A. Jehouani, Faculty of Sciences SEMLALIA, Dept. of Physics, University Cadi Ayyad- Marrakech, Morocco (email [PHYTRA1@fsr.ac.ma](mailto:PHYTRA1@fsr.ac.ma) or [jehouani@ucam.ac.ma](mailto:jehouani@ucam.ac.ma), fax 212-44-43-74-10) or Pr. L. Erradi, GMTR President, Mohammed V Agdal University, Faculty of Sciences, Department of Physics, B. P. 1014 Rabat, Morocco (email [erradi@fsr.ac.ma](mailto:erradi@fsr.ac.ma) or fax 212-0-37-77-89-73) <http://www.fst.ac.ma/gmtr/phytra1/phytra1.html>.

## ND2007

The International Conference on Nuclear Data for Science and Technology will be held April 22–27, 2007, in Nice, France. The conference is organized by the Commissariat à l'Énergie Atomique (CEA) under the auspices of the OECD Nuclear Energy Agency (NEA). The General Chairs are B. Bigot, Haut-commissaire à l'Énergie Atomique and L. Echávarri, NEA Director-General. Abstracts should be submitted by **September 2006** on the following topics:

- Nuclear structure and decay data
- Experimental facilities and detection techniques
- Nuclear data measurements and analysis
- Nuclear theories, models and data evaluation
- Standards
- Evaluated nuclear data libraries and processing
- Validation, benchmarking of evaluated data
- Integral experiments

- Uncertainties quantification
- Data dissemination and international collaboration
- Fission energy applications
- Accelerator-related applications
- Fusion technology applications
- Dosimetry and shielding applications
- Safeguards and security
- Space, cosmic-ray applications, radiation effects on electronics
- Astrophysics and cosmology applications
- Medical and environmental applications

The most current information will be posted on the website at [http://www-dapnia.cea.fr/Sphn/nd2007/site\\_nd2007/](http://www-dapnia.cea.fr/Sphn/nd2007/site_nd2007/) and questions or comments may be addressed to [nd2007@cea.fr](mailto:nd2007@cea.fr).

## **International Conference on Emerging Nuclear Energy Systems (ICENES 2007)**

The committee for the 13<sup>th</sup> International Conference on Emerging Nuclear Energy Systems (ICENES 2007) has issued a call for papers for the conference to be held June 3–8, 2007, at Gazi University in Istanbul.

The main objective of ICENES is to provide a broad review and discussion of various advanced, innovative and non-conventional nuclear energy production systems to scientists, engineers, industry leaders, policy makers, decision makers and young professionals who will shape future energy supply and technology. ICENES 2007 will also open the forum to innovative non-nuclear technologies, such as hydrogen energy, solar energy, deep space exploration, etc. with an emphasis on *unthinkable ideas* with a sound scientific-technical basis. The program will include invited papers, submitted contributions in oral and poster sessions, as well as an industrial exhibition and social tours. Topical areas include:

- Advanced Fission Systems
- Fusion Energy Systems
- Accelerator Driven Systems
- Exotic Nuclear Reactor Concepts
- Transmutation and Fuel Cycle
- Co-Generation and Non-Electricity Production Applications
- Generation IV Reactors
- Space Power and Propulsion
- Deep Space Exploration, general
- Nuclear Hydrogen Production
- Radiation Protection & Shielding
- Hydrogen Energy, general including non-nuclear applications
- Solar Energy
- Other Alternative Energies
- Societal Issues

The official language of the conference will be English. Authors should submit abstracts of 300–500 words to [abstract@icenes2007.org](mailto:abstract@icenes2007.org) for review by the Program Committee. Abstracts should include sufficient information to explain and support the new and significant results to be presented in the proposed paper. The topical area appropriate to the abstract and the name and address of the author to whom correspondence should be addressed must be clearly stated at the top of the first page. Abstracts may be submitted in “pdf” or “doc” format via e-mail by **September 22, 2006**. Authors will be notified by November 17, 2006. The deadline for full papers is **March 2, 2007**. The proceedings will be produced on an interactive CD-ROM with an ISBN

registration number. A selection of ICENES 2007 papers will be published in a special edition of the journal *Energy Conversion & Management*. Scientific and technical inquiries may be directed to Prof Dr. Sümer Şahin, Gazi University 06500 ANKARA/TURKEY (phone +90 (312) 212 43 04, fax +90 (312) 212 43 04, email [sumersahin@icenes2007.org](mailto:sumersahin@icenes2007.org)). Updated information will be posted to <http://www.icenes2007.org/>.

## CALENDAR

### May 2006

30th Annual Actinide Separations Conference, May 22–25, 2006, Richland, Washington. Contact: Cal Delegard, Pacific Northwest National Laboratory, P.O. Box 999, MS P7-25, Richland, WA 99352 (phone 509 376-0548, fax 509 372-3861, email [calvin.delegard@pnl.gov](mailto:calvin.delegard@pnl.gov)).

Monte Carlo User Group Meeting MCNEG -2006, May 25–26, 2006, City University, London. Contact: Dr Robert Price, Associate Dean (Research), School of Allied Health Sciences, City University, Northampton Square, London EC1V OHB (phone +44 (0)20 7040 5670, email [r.price@city.ac.uk](mailto:r.price@city.ac.uk)). <http://www.mcneg.org.uk>.

Current Problems of Nuclear Physics and Atomic Energy (NPAE-Kyiv2006), May 29–June 03, 2006, Kyiv, Ukraine. Contact: Institute for Nuclear Research, Prospect Nauky, 47, Kyiv, 03680, Ukraine (phone +38 044 525 39 49, fax +38 044 525 44 63, email [NPAE-Kyiv2006@kinr.kiev.ua](mailto:NPAE-Kyiv2006@kinr.kiev.ua)) <http://www.ipe.univ.kiev.ua>.

WIN Global 2006, May 30–June 1, 2006, Kitchener-Waterloo, Canada. Contact: WIN Coordinator, Carol Berrigan (phone 202-739-8050, email [clb@nei.org](mailto:clb@nei.org)) <http://www.win-2006.org/Win/>.

### June 2006

53<sup>rd</sup> Annual Meeting of the Society of Nuclear Medicine, June 3–7, 2006, San Diego, California. Contact: ITS/SNM, Suite 400, 108 Wilmot Road, Deerfield, IL 60015-5124 (phone 800-424-5249, fax 800-521-6017, url <http://interactive.snm.org/index.cfm?PageID=4167&RPID=10>).

ANS Annual Meeting, “A Brilliant Future: Nexus of Public Support in Nuclear Technology,” June 4–8, 2006, Reno, Nevada. Contact: <http://www.ans.org/meetings/annual/>.

International Congress on Advances in Nuclear Power Plants (ICAPP '06), June 4–8, 2006, Reno, Nevada. Contact: Samim Anghaie, Univ of Florida, 202 NSC, Gainesville, FL 32611-8300 (phone 352-392-8653, fax 352-392-8656, email [anghaie@ufl.edu](mailto:anghaie@ufl.edu)).

Nuclear Fuels and Structural Materials for the Next Generation Nuclear Reactors, June 4–8, 2006, Reno, Nevada. Contact: Lance L. Snead, Oak Ridge National Laboratory, P.O. Box 2008, Oak Ridge, TN 37831-6140 (phone 865-574-3560, fax 865-574-9942, email [sneadll@ornl.gov](mailto:sneadll@ornl.gov)).

27<sup>th</sup> Annual Conference of the Canadian Nuclear Society and student conference, June 11–14, 2006, Toronto, Ontario. Contact: Canadian Nuclear Society email [cen-snc@on.aibn.com](mailto:cen-snc@on.aibn.com) or url [www.cns-snc.ca](http://www.cns-snc.ca).

MCNPX Introductory Workshop, June 12–16, 2006, Santa Fe, NM. Contact: Bill Hamilton (phone 806-928-6021, email [bill@mcnpxworkshops.com](mailto:bill@mcnpxworkshops.com)) <http://mcnpxworkshops.com>.

EXRS 2006–European Conference on X-Ray Spectrometry, June 19–23, 2006, Paris, France. Contact: [exrs2006@cea.fr](mailto:exrs2006@cea.fr), <http://www.nucleide.org/exrs2006/>.

International Conference on Research Reactors in the 21<sup>st</sup> Century, June 20–22, 2006, Moscow. Contact: Igor Kabanov, NIKIET, P.O.B. 788, Moscow, 101000 Russia (phone 7-263-7388, fax 7-975-2019, email [nikiet@nikiet.ru](mailto:nikiet@nikiet.ru)).

EPRI International Low-Level Waste Conference and ASME/EPRI Radwaste Workshop, June 26–30, 2006, Albuquerque, New Mexico. Contact: Linda Nelson, PLAN Ahead (phone 518-374-8190, email [lnelson@nycap.rr.com](mailto:lnelson@nycap.rr.com)).

## July 2006

US WIN Meeting (WIN 2006), “Leadership, Education and Outreach in the 21st Century,” July 16–18, 2006, Pittsburgh, Pennsylvania. Contact: WIN Coordinator, Carol Berrigan (phone 202-739-8050, email [clb@nei.org](mailto:clb@nei.org)) <http://www.winus.org>.

47<sup>th</sup> Annual Meeting of the Institute of Nuclear Materials Management, July 16–20, 2006, Nashville, Tennessee. Contact: INMM (phone 847-480-9573, fax 874-480-9282, email [inmm@inmm.org](mailto:inmm@inmm.org)).

14<sup>th</sup> International Conference on Nuclear Engineering (ICONE 14), July 17–20, 2006, Miami, Florida. Contact: Kim Punter (email [punterk@asme.org](mailto:punterk@asme.org)).

MCNPX Workshop, July 17–21, 2006, Bologna, Italy. Contact: Bill Hamilton (phone 806-928-6021, email [bill@mcnpxworkshops.com](mailto:bill@mcnpxworkshops.com)) <http://mcnpxworkshops.com>.

MCNPX Workshop, July 31–Aug. 4, 2006, West Point, NY. Contact: Bill Hamilton (phone 806-928-6021, email [bill@mcnpxworkshops.com](mailto:bill@mcnpxworkshops.com)) <http://mcnpxworkshops.com>.

## September 2006

PHYSOR-2006, “Advances in Nuclear Analysis and Simulation,” Sept. 10–14, 2006, Vancouver, BC, Canada. Contact: Ken Kozier, Technical Program Co-Chair, Atomic Energy of Canada Limited (AECL), Chalk River Laboratories, Chalk River, Ontario, Canada K0J 1J0 (phone 613-584-8811 ext. 5059, email [physor2006@aecl.ca](mailto:physor2006@aecl.ca)) <http://www.cns-snc.ca/physor2006/>.

Workshop on the Use of Monte Carlo Techniques for Design and Analysis of Radiation Detectors, Sept. 15–17, 2006, Coimbra, Portugal. Contact: email [workshop@lipc.fis.uc.pt](mailto:workshop@lipc.fis.uc.pt), <http://pollux.fis.uc.pt/isrp10/workshop/index.htm>).

ISRP-10, Sept. 17–22, 2006, Coimbra, Portugal. Contact: ISRP-10, Departamento de Física, Universidade de Coimbra, 3004-516 Coimbra, Portugal (fax +351 239 829158, email [isrp10@pollux.fis.uc.pt](mailto:isrp10@pollux.fis.uc.pt), <http://pollux.fis.uc.pt/isrp10>).

MCNPX Workshop, Sept. 18–22, 2006, Santa Fe, NM. Contact: Bill Hamilton (phone 806-928-6021, email [bill@mcnpxworkshops.com](mailto:bill@mcnpxworkshops.com)) <http://mcnpxworkshops.com>.

2nd International Symposium on Radionuclide Therapy and Radiopharmaceutical Dosimetry, Sept. 30–Oct. 4, 2006 Athens, Greece. The url is [http://eanm06.eanm.org/programme/prog\\_isrtrd.php?navigationId=19&sessNavigationId=63](http://eanm06.eanm.org/programme/prog_isrtrd.php?navigationId=19&sessNavigationId=63)

## October 2006

13th Workshop on Monte Carlo Simulation of Radiotherapy Treatment Sources using the BEAMnrc Code System, Oct. 2–5, 2006, Ottawa, Canada. Contact: Dave Rogers, Physics Department, Carleton University, 1125 Colonel By Drive, Ottawa, Ontario, Canada, K1S 5B6 (phone 613-520-2600x4374, fax 613-520-4061, e-mail [drogers@physics.carleton.ca](mailto:drogers@physics.carleton.ca)) <http://www.physics.carleton.ca/~drogers/BEAM/course/>.

12<sup>th</sup> International Congress on Neutron Capture Therapy (ICNCT-12), October 9–13, 2006, Takamatsu, Kagawa, Japan. Contact: ICNCT-12 Secretariat, Association for Nuclear Technology in Medicine, 2 Masumoto Bldg., 1-8-16 Toranomon, Minato-ku, Tokyo 105-0001, Japan (phone 81-3-3504-3961, fax 81-3-3504-1390, email [ICNCT2006@antm.or.jp](mailto:ICNCT2006@antm.or.jp)) <http://icnct-12.umin.jp/>.

15<sup>th</sup> Pacific Basin Nuclear Conference (15PBNC), Oct. 15–20, 2006, Sydney, Australia. Contact: PBNC 2006 Conference Managers, GPO Box 128, Sydney NSW 2001, Australia (phone + 612 9265 0700, fax + 612 9267 5443, email [pbnc2006@tourhosts.com.au](mailto:pbnc2006@tourhosts.com.au), url <http://www.pbnc2006.com/>).

First European Workshop on Monte Carlo Treatment Planning, Oct. 22–25, 2006, Gent, Belgium. Contact: N. Reynaert, Lab for Standard Dosimetry Gent, Gent University –FANC, Proeftuinstraat 86 – B-9000 Gent, Belgium (phone + 32 9 264 66 48, fax + 32 9 264 66 96, email [nick.reynaert@ugent.be](mailto:nick.reynaert@ugent.be)) <http://www.ewg->

[mctp.ugent.be/](http://mctp.ugent.be/).

MCNPX Workshop, Oct. 30–Nov. 3, 2006, Tokyo, Japan. Contact: Bill Hamilton (phone 806-928-6021, email [bill@mcnpxworkshops.com](mailto:bill@mcnpxworkshops.com)) <http://mcnpxworkshops.com>.

### **November 2006**

ANS Winter Meeting and Nuclear Technology Expo, “Securing the Future in Times of Change,” Nov. 12–16, 2006, Albuquerque, NM. Contact: Robert W. Kuckuck (phone 505-667-5101, email [bobkuck@lanl.gov](mailto:bobkuck@lanl.gov)) <http://www.ans.org/meetings/index.cgi?c=n>.

### **March 2007**

First International Conference on Physics and Technology of Reactors and Applications (PHYTRA1), March 14–16, 2007, Marrakech City, Morocco. Contact: Pr. A. Jehouani, Faculty of Sciences Semlalia, Dept. of Physics, University Cadi Ayyad- Marrakech, Morocco (email [phytra@ucam.ac.ma](mailto:phytra@ucam.ac.ma) or [jehouani@yahoo.com](mailto:jehouani@yahoo.com), fax 212 44 43 74 10) or Pr. L. Erradi, GMTR President, Mohammed V Agdal University, Faculty of Sciences, Department of Physics, B. P. 1014 Rabat, Morocco (email [erradi@fsr.ac.ma](mailto:erradi@fsr.ac.ma) or [erradi@hotmail.com](mailto:erradi@hotmail.com), fax 212-0-37-77-89-73).

### **June 2007**

ICENES 2007, June 3–8, 2007, Istanbul. Contact: Prof Dr. Sümer Şahin, Gazi University 06500 Ankara/Turkey Contact: Prof Dr. Sümer Şahin, Gazi University 06500 Ankara/Turkey (phone +90 (312) 212 43 04, fax +90 (312) 212 43 04, email [sumersahin@icenes2007.org](mailto:sumersahin@icenes2007.org), url <http://www.icenes2007.org/>).

ANS Annual Meeting, June 24–28, 2007, Boston, Massachusetts. URL <http://www.ans.org/meetings/>.