
Radiation Safety Information Computational Center



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*If you want to succeed you should strike out on new paths rather than
travel the worn paths of accepted success.—John D. Rockefeller*

Changes to the Computer Code and Data Collection

[CCC-724/COG Version 10](#)

Lawrence Livermore National Laboratory, Livermore, California, contributed a modern, full-featured Monte Carlo radiation transport code system which provides accurate answers to complex shielding, criticality, and activation problems. COG was written to be state-of-the-art and free of physics approximations and compromises found in earlier codes. COG is fully 3-D, uses point-wise cross sections and exact angular scattering, and allows a full range of biasing options to speed up solutions for deep penetration problems. Additionally, COG has a criticality option for computing Keff for assemblies of fissile materials. COG can compute gamma-ray doses due to neutron-activated materials, starting with just a neutron source and can solve coupled problems involving neutrons, photons, and electrons.

COG can use either the included LLNL ENDL-90 cross section set or the ENDFB/VI set. Analytic surfaces are used to describe geometric boundaries. Parts (volumes) are described by a method of Constructive Solid Geometry. Surface types include surfaces of up to fourth order, and pseudo-surfaces such as boxes, finite cylinders, and figures of revolution. Repeated assemblies need be defined only once. Parts are visualized in cross-section and perspective picture views.

COG is operable on PC's running either Windows or Linux and Sun Solaris workstations. Note that Fortran and C source files are not included in this package. COG is distributed on CD in Windows and Unix tar formats. Included are executables, data libraries, test cases and the User's Manual. Reference: UCRL-TM-202590, 5th Edition (Sept. 2002). Fortran 77 (99%), C(1%); Personal computers and Sun (C00724MNYCP00).

[CCC-730 / MCNP/MCNPX](#)

Los Alamos National Laboratory, Los Alamos, New Mexico, contributed a new package which includes both MCNP5 1.40 and MCNPX 2.5.0. It also includes data libraries and a new version of VISED for use with MCNP5. The package is distributed only on DVD and is available free to all approved requesters for a limited time.

MCNP5 is a general purpose Monte Carlo N-Particle code that can be used for neutron, photon, electron, or coupled neutron/photon/electron transport, including the capability to calculate eigenvalues for critical systems.

MCNPX is a general purpose Monte Carlo radiation transport code that tracks nearly all particles at nearly all energies. MCNPX 2.5.0 is based on MCNP4C3 merged with LAHET to extend the code to higher energies and more particle types.

The collection of data libraries in the distribution of MCNP 5.1.40 / MCNPX 2.5.0 supports both codes. The data libraries include all publicly-available libraries supported by Los Alamos Group X-1. Libraries are provided for incident neutrons, photons, electrons, and protons. In addition, several auxiliary files required for various physics models are included in the data distribution.

The package is distributed on a single DVD in Windows and UNIX formats. The executable-only package C00730MNYCP01 includes MCNP5 and MCNPX executables for PC Windows, PC Linux, some Unix systems and MCNP5 for Mac OSX; MCNPDATA; test problems and documentation. The C00730MNYCP00 package includes the items listed above plus source codes, makefiles, build scripts, and some additional documentation. Export control regulations restrict the distribution of Fortran source code. If restrictions apply, RSICC will send the executable-only version. References: LA-UR-03-1987, LA-CP-03-0245, LA-UR-05-2675 and other LANL reports. [Package ID: C00730MNYCP00 (full package) and C00730MNYCP01 (executable-only package)].

Click below to complete the online order form to request the package. If you are not registered as an RSICC user, or if your registration form needs updating, please do that first. **If you have received codes from RSICC in the past and can't remember your pass number, call 865-576-2237 or email riceaf@ornl.gov. **DO NOT REGISTER AS A NEW USER.** Don't forget to print and fax (or mail) the software license and export control agreement. Your request will not be processed until these forms are received.**

<http://rsicc.ornl.gov/rsiccnew/order.htm>

ANS February Notes

Reinsch responds to Bush call for nuclear energy: “We are greatly encouraged by the President's leadership in addressing the need for new advanced nuclear technology as part of the plan to reduce U.S. dependence on foreign sources of energy. Our scientists and engineers support the role of nuclear as a clean, non-emitting source of safe, reliable and cost effective electricity. Nuclear power must be a major part of the answer to the future need for base load electricity sources. Several of our power companies are moving forward with the preparations for licensing and building new nuclear plants in the U.S. The role of the federal government in removing barriers and supporting this deployment process is critical to the balanced and stable energy policy for years to come.”

ANS Scholarships: Deadlines are approaching for a number of undergraduate and graduate scholarships. Notably the ANS Incoming Freshman Scholarship application deadline is **April 1**. Go to the ANS > Honors and Awards > [Scholarships](#) page to see what's available and download the necessary forms for application.

ANS Glenn T. Seaborg Science and Engineering Congressional Fellowship: Applications are due no later than March 27, 2006, for this important fellowship. The successful candidate will provide advice on science and engineering matters to a member of Congress and his or her staff. The purpose of the Fellowship is to bring a reasoned and knowledgeable view of nuclear matters to Congress and to act as a science and engineering resource for Congress. Go to the topic webpage to get the details regarding the qualifications and instructions for submitting a candidate.

[The Landis Challenge](#): “The peaceful uses of nuclear energy have already saved countless lives around the world. For fifty years ANS has been a strong leader of the ‘peaceful atom’ movement. With additional resources we can help lead the movement to unforeseen accomplishments.”—*J. W. Landis*

Matching action to words, John Landis has made a \$50,000 gift to enable ANS to create new programs and expand its current activities. The American Nuclear Society is a credible source of information to the global community of educators, students, general public, and policymakers. Through teacher workshops, public outreach initiatives, and student scholarships it provides information about how nuclear science and technology improves the way we live.

Mr. Landis has challenged the ANS members to match his donation and double the strength of his gift. You can join the growing list of contributors to the Landis Challenge. To make a contribution, go to the online [Donation Form](#) or contact the ANS Outreach Department.

[Election](#): See the 2006 ANS national election slate and Vice President/President-Elect candidate statements. All ballots will be mailed on **February 17, 2006**.

U.S. WIN Announces Bryant Award

U.S. Women in Nuclear (WIN) announced the *Patricia Bryant Leadership Award* to recognize WIN members who have demonstrated outstanding leadership in the organizations core values, which are to:

- support an environment in nuclear energy and nuclear technologies in which both women and men are able to succeed,
- provide a network through which women in these fields can further their professional development, and
- provide an organized association through which the public is informed about nuclear energy and nuclear technologies.

The award is named for Patricia Bryant, a founder of Women in Nuclear Global and U.S. WIN, in recognition of her work in both domestic and international energy communications. U.S. WIN members are encouraged to nominate candidates who have made contributions in any or all of the three U.S. WIN core values for consideration for this award. If you have questions regarding eligibility or the application process, please feel free to contact Carol L. Berrigan, Nuclear Energy Institute, 1776 I Street, NW, Suite 400, Washington, DC 20006 (phone 202-739-8050, email clb@nei.org). All nominations for this award must be postmarked by **February 28th** for consideration for the 2006 award. Guidelines and the nomination form can be found at <http://www.winus.org/whatsnew/index.asp>.

Obituary

Trousdale A. (T. A.) Lewis died, Jan. 12, 2006, in Oak Ridge, Tennessee. At 16 Lewis was licensed as a ham radio engineer, the youngest in East Tennessee at the time. For several years he worked with local radio stations and was among the first transmitting engineers for Knoxville television broadcast. His talent in electronics helped him earn the Bachelor of Science and Master of Science degrees in electrical engineering from the University of Tennessee. While at the university he contributed to the development of modern scanning radar sources that do not require mechanical motion. He completed the Nuclear Reactor School of the Oak Ridge Institute of Nuclear Studies (ORINS). Mr. Lewis started work in the Instrumentation and Control Division of ORNL in 1960 as a field engineer to the Solid State Physics Division and other projects. He also worked in computer controlled instrumentation systems. His co-workers and friends recognized him as a skilled problem-solver, conversant with the most modern instrumentation of the times. In 1964, he was assigned as liaison engineer to Varian Associates in Palo Alto, Calif., where he collaborated in the design and construction of the Oak Ridge Electron Linear Accelerator (ORELA). Mr. Lewis returned to Oak Ridge from California and assisted with the installation and startup of ORELA. The remainder of his professional career was spent providing oversight and improvement to

ORELA. As chief of operation, he set records in run time and intensity of output. He worked also as a special consultant to the Hollifield Radioactive Ion Beam Facility. Lewis is credited with over 100 technical publications on particle acceleration and particle beam monitoring and at least one patent.

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 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.

Short Courses on Modeling and Computation of Multiphase Flows

The Swiss Federal Institute of Technology (ETH) in Zurich is hosting the 23rd of the Series, “Modeling and Computation of Multiphase Flow,” March 20–24, 2006, in Zurich. The series will consist of:

- Part I: Bases
- Part IIA: New Reactor Systems and Methods
- Part IIB: Computational Multi-Fluid Dynamics (CMFD)
- Part IIC: CMFD with Commercial Codes

Detailed information is available at <http://www.ascomp.ch/ShortCourse> and correspondence may be addressed to Prof. G. Yadigaroglu, Short Course Multiphase Flow, ETH WEN B-13, Weinbergstr. 94, CH-8006 Zurich, Switzerland (phone: + 41 44 632 4615, fax: + 41 44 632 1105, email: yadi@ethz.ch, url: <http://www.ascomp.ch/ShortCourse/Short-Course.html>.)

MCNPX Workshops

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

Organizer: HQC Professional Services

Contact: bill@mcnpxworkshops.com

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

2006 Schedule		
March 27–31	Intermediate	Cape Town, South Africa
June 12–16	Introductory	Santa Fe, NM

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>.

ANS RP&S Division Biennial Topical Meeting

The American Nuclear Society Radiation Protection and Shielding Division Biennial Topical Meeting will be held April 3–6, 2006, at the Pecos River Village in Carlsbad, New Mexico. The conference will open with a keynote address by Dr. Glenn Knoll. Other outstanding plenary speakers will include Dr. Kenneth Shultis, Dr. Cassiano de Oliveira and other special speakers.

Workshops will be offered on April 2 and 6, both morning and afternoon. These continuing education classes with the time and location are listed in the conference website.

There will be no charge to those registered for the conference for any of the workshops, although pre-registration is requested. Attendance at the conference will provide continuing education credits for various technical certifications depending on the degree of participation by the attendee.

Tours will be offered of the Waste Isolation Pilot Plant (WIPP), a licensed and operating deep geological repository for transuranic waste. The actual number of visitors WIPP can accommodate will depend on operational conditions and the work schedule of the facility. The WIPP site is a federal facility and advance notice will be required for a site visit so early registration is strongly encouraged.

The Trinity Site is also available to the general public independent of the conference on Saturday, April 1, 2006. The Trinity Site is the location of the world's first detonation of a nuclear weapon.

The call for papers, program and contact information for the conference can be found at <http://www.ans-rpsw-carlsbad.com/>.

NCRP 2006 Annual Meeting, “Chernobyl at Twenty”

The National Council on Radiation Protection and Measurements (NCRP) will hold its 2006 Annual Meeting April 3–4, at the Crystal City Marriott in Arlington, Virginia. The April 26, 1986, accident at the Chernobyl nuclear power plant near Kiev in the Ukrainian Republic of the Former Soviet Union was the worst nuclear power accident in history. Large numbers of people were contaminated in the Ukraine Republic, Belarus Republic, Western Russia, Western Europe, and Scandinavia. More than 200,000 people in the Ukraine and Belarus Republics were evacuated and resettled as a result of significant fallout from the Chernobyl accident.

On the twentieth anniversary of this disastrous event, the 2006 NCRP Annual Meeting will provide a comprehensive retrospective review and analysis of the effects of the Chernobyl nuclear accident on human health and the environment. Topics to be discussed by international experts include:

- the initial release, distribution and migration of radiation from Chernobyl;
- efforts to clean up, contain and dispose of radionuclides released by the accident;
- health effects observed in emergency responders and cleanup workers;
- exposures and health effects among populations living close to, and distant from, the Chernobyl reactor site;

- lessons learned from the Chernobyl accident, including improved nuclear safety procedures, better preparedness for future nuclear accidents, and more effective management and mitigation of human health consequences of such events; and
- international perspectives on the future use of nuclear technology and nuclear power in comparison with other power sources.

The program and registration for the meeting can be accessed at <http://www.ncrponline.org/dates.html>.

TRAINING COURSE ON NEUTRON SPECTRA UNFOLDING

This two-day training course on neutron spectra unfolding will be held April 7–8, 2006, in Cape Town, South Africa. The training course is organized by the Neutron Radiation Department of the Physikalisch-Technische Bundesanstalt (PTB), Braunschweig, Germany. Additional support is provided by EURADOS. The course is intended for those who do spectrometry in neutron or mixed neutron/photon fields and need to analyze their data using unfolding procedures; emphasis is on practical aspects of unfolding.

A series of lectures in the morning sessions will provide an introduction to unfolding as well as allow for discussions on the theory of unfolding. In the afternoon sessions participants will work on specific examples at PC-workplaces using the UMG software package provided by PTB (UMG: Unfolding with GRAVEL and MAXED, currently distributed by NEA as code package NEA-1665 and by RSICC as code package PSR-529). We will focus on Bonner sphere measurements for our discussion of few-channel unfolding, and on liquid scintillation spectrometer (NE213) measurements for our discussion of multi-channel unfolding.

The number of participants will be restricted due to the limited number of PC-workplaces available. Therefore, you should register as soon as possible. For on-line registration and further information please visit the website at: <http://www.ptb.de/utc2006/>. Contact: Burkhard Wiegel, PTB, email Burkhard.Wiegel@ptb.de The fee for the course is 800 Euro and includes a CD with a complete set of notes and unfolding software, as well as refreshments.

PRACTICAL MCNP FOR THE HP, 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

Monte Carlo type calculations are ideally suited to solving a variety of problems in radiation protection and dosimetry. The Los Alamos MCNP™ code is a general and powerful Monte Carlo transport code for photons, neutrons, and electrons, and can be safely described as the “industry standard.” This course is aimed at the HP, medical physicist, and rad engineer with no prior experience with Monte Carlo techniques. The focus is almost entirely on the application of MCNP™ to solve a variety of practical problems in radiation shielding and dosimetry. The intent is to “jump start” the student toward using MCNP™ productively. With a little practice and study of the examples, many will find they are able to solve problems that have, in the past, been out of reach.

Course content: Extensive interactive practice sessions are conducted on a personal computer. Topics will include an overview of the MCNP™ code and the Monte Carlo method, input file preparation, geometry, source definition, standard MCNP tallies, interpretation of the output file, exposure and dose rate calculations, radiation shielding, photon skyshine, detector simulation and dosimetry. Students will be provided with a comprehensive class manual and a diskette containing all of the practice problems. This course has been granted 32 Continuing Education Credits by the AAHP (2005-00-003), and 4.5 CM points by the American

Board of Industrial Hygiene. The course is offered by the Health Physics Measurements Group at the Los Alamos National Laboratory.

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, e-mail: dseagraves@lanl.gov. Technical questions may also be directed to Dick Olsher, 505-667-3364; e-mail: dick@lanl.gov.

Please note that this course is separate from and independent of the courses being offered by the MCNP and MCNPX Teams at LANL.

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). 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).

ISRP-10

The 10th 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>.

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. The most up-to-date 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. 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 **June 15, 2006**, via email, to Pr. A. Jehouani, Faculty of Sciences SEMLALIA, Dept. of Physics, University Cadi Ayyad- Marrakech Morocco (email: phytra@ucam.ac.ma or 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 or fax: 212-0-37-77-89-73) <http://www.ans.org/meetings/index.cgi?c=c>.

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 to the website at http://www-dapnia.cea.fr/Sphn/nd2007/site_nd2007/ and questions or comments may be addressed to nd2007@cea.fr.

International Conference on Emerging Nuclear Energy Systems (ICENES 2007)

The committee for the 13th 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, 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 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 **December 22, 2006**. Authors will be notified by February 23, 2007. The deadline for full papers is **June 29, 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*. Updated information will be posted to <http://www.icenes2007.org/>.

CALENDAR

February 2006

Waste Management 2006 (WM'06) Feb. 26–Mar. 2, 2006, Tucson, AZ. Contact: WM Symposia, Inc., P.O. Box 35340, Tucson, AZ 85740 (phone 520-696-0399, fax 520-615-8997, www.wmsym.org).

March 2006

HEART Conference, March 6–10, 2006, Santa Clara, CA. Contact: Technical Program Chair, Dennis Breuner (phone 858-720-7072, email dbreuner@titan.com).

TopNux: Securing the Future—The Role of Nuclear Energy, March 21–23, 2006, London, England. Contact: Dionne Bosma, ENS (phone 32-2-505-3054, fax 32-2-502-3902, email Dionne.boxma@euronuclear.org).

23rd Short Course Series on “Modeling and Computation of Multiphase Flow,” March 20–24, 2006, Zurich. Contact: Prof. G. Yadigaroglu, Short Course Multiphase Flow, ETH WEN B-13, Weinbergstr. 94, CH-8006 Zurich, Switzerland (phone: +41 44 632 4615, fax: +41 44 632 1105, email: yadi@ethz.ch, url: <http://www.ascomp.ch/ShortCourse/Short-Course.html>).

MCNPX Intermediate Workshop, March 27–31, 2006, Cape Town, South Africa. Contact: Bill Hamilton (phone 806-928-6021, email bill@mcnpxworkshops.com, url <http://mcnpxworkshops.com>).

U.S. WIN Region 2 Meeting, March 27–28, 2006, will St. Lucie, Florida. Contact: Anita Bailey at Anita_Bailey@fpl.com.

April 2006

NCRP 2006 Annual Meeting April 3–4, 2006, Arlington, Virginia. URL: <http://www.ncrponline.org/dates.html>.

14th Biennial Topical Meeting of the ANS Radiation Protection and Shielding Division, April 3–6, 2006, Carlsbad, New Mexico. Contact: Dr. Chuan-Fu Wu (phone: 505-234-7552, email chuan.wu@wipp.ws) or Mr. Russell McCallister (phone 505-234-7395, russell.mccallister@wipp.ws) <http://www.ans-rpsw-carlsbad.com/>.

Methods and Applications of Radioanalytical Chemistry (MARC VII), April 3–7, 2006, Kona, Hawaii. Contact: B. Stephen Carpenter, General Chair, National Institute of Standards and Technology, 100 Bureau Dr., Stop 1090, Gaithersburg, MD 20899 (phone 301-975-4119) <http://www.min.uc.edu/nuclear/marc/>.

Two-day training course on neutron spectra unfolding, April 7–8, 2006, Cape Town, South Africa. Contact: Burkhard Wiegel, PTB, email Burkhard.Wiegel@ptb.de or <http://www.ptb.de/utc2006/>.

International High-Level Radioactive Waste Management Conference (2006 IHLWM), April 30–May 4, 2006, Las Vegas, Nevada. Contact: Daniel B. Bullen, General Chair, Exponent, 185 Hansen Court, Suite 100, Wood Dale, IL 60191 (phone 630-274-3223, fax 630-274-3299, email dbullen@exponent.com) <http://www.ans.org/meetings/index.cgi?c=t>.

May 2006

Annual Meeting on Nuclear Technology, May 16–18, 2006, Aachen, Germany. Contact: dbcM GmbH, phone 49-02241-93897-23; fax 49-02241-93897-12; email jk@dbcm.de.

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

June 2006

ANS Annual Meeting, “A Brilliant Future: Nexus of Public Support in Nuclear Technology,” June 4–8, 2006, Reno, Nevada. URL: <http://www.ans.org/meetings/index.cgi?c=n>.

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

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

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

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, url <http://www.winus.org>).

47th 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).

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

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, web <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: workshop@lipc.fis.uc.pt (<http://pollux.fis.uc.pt/isrp10/workshop/index.htm>).

ISRP-10, Sept. 17–22, 2006, Coimbra, Portugal. Contact: isrp10@pollux.fis.uc.pt (<http://pollux.fis.uc.pt/isrp10>).

October 2006

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, url: <http://www.ewg-mctp.ugent.be/>).

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) <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 or 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 or 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 (phone +90.(0312).212.43.04, fax +90.(0312) 212.43.04, email sumersahin@icenes2007.org, url <http://www.icenes2007.org/>).

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