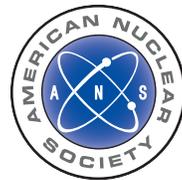


# CALL FOR PAPERS

## 2010 Isotopes for Medicine and Industry



**EMBEDDED TOPICAL MEETING – 2010 ANS Winter Meeting  
November 8-11, 2010 • Riviera Hotel • Las Vegas, NV**

### TOPICAL MEETING PURPOSE

The continuing rapid growth of radioisotopes for both medical and industrial applications is of national and international interest. The expanding applications, new research opportunities, and associated production issues surrounding the supply of research, diagnostic, therapeutic, environmental, and industrial radioisotopes will be discussed in an interdisciplinary audience.

### CONFERENCE CHAIR

J. David Robertson, *University of Missouri-Columbia*

### CONFERENCE CO-CHAIRS

Robert W. Atcher, *Immediate Past President, Society of Nuclear Medicine*  
Mauro Bonardi, *University of Milan, Italy*

### TECHNICAL PROGRAM CHAIR

Rolf Zeisler, *National Institute of Standards and Technology*

### SPONSORS

- American Nuclear Society Biology and Medicine Division (BMD), Isotope and Radiation Division (IRD), and Accelerator Applications Division (AAD)
- Canadian Nuclear Society
- US Department of Energy

### SUBJECT CATEGORIES

Applications in Nuclear Medicine—Diagnostics • Applications in Nuclear Medicine—Therapeutics • Reactor Production of Medical Isotopes • Cyclotron Production of Biomedical Tracers • Production and Application of Alpha Emitters • Accelerator based production of Mo-99 • Isotopes in Environmental, Industrial and Nuclear Power Applications • Reactor Production of Research and Industrial Isotopes • High Energy Accelerator/Cyclotron Production of Isotopes • Alternative Technologies: Replacing He-3 for Neutron Detection • Nuclear and Radiochemistry • Radioanalytical Techniques • Distribution and Transportation Issues • R&D and Standards Needs for Future Applications • Quality Assurance and GLP in Radionuclide and Radiopharmaceutical Chemistry • Manpower and Education

### GUIDELINES FOR SUMMARIES

Summaries are expected to contain descriptions of work that is new, significant and relevant to the conference purposes. They will undergo a review for acceptance, with selection criteria for originality of work, relevance of topic, validity of method, clarity and conciseness of communication, and adherence to the scientific method (if appropriate). Compliance with content and length guidelines (following) is also part of the acceptance requirements. Summaries must be submitted electronically to <http://www.new.ans.org/meetings/>. All submissions must be in English. Accepted summaries will be included in the Transaction CD that will be distributed at the ANS Annual Meeting.

### ELECTRONIC SUBMISSIONS

To submit a summary electronically, please refer to the detailed instructions available on the internet. REQUIRED TEMPLATE AND "GUIDELINES FOR TRANSACTIONS SUMMARY PREPARATION": [www.ans.org/pubs/transactions](http://www.ans.org/pubs/transactions). Select a technical track from the list below.

### FORMAT OF SUMMARY FOR REVIEW

1. Summaries must be submitted electronically in Word or PDF (Adobe Acrobat) format.
2. Use SI units (with English units following in parentheses if desired). Exceptions are made for eV and barns.
3. List references numerically at the end of the summary.
4. Use the "Guidelines for TRANSACTIONS Summary Preparation" and "Template" from <http://www.ans.org/pubs/transactions/>.

### SUMMARY LENGTH

1. Title Maximum – 10 words
2. Authors - list three or fewer authors if possible
3. Text Minimum – 450 words, excluding figures and tables
4. Text Maximum – 900 words, including figures and tables
5. Figures and Tables – Three figures and/or tables maximum, counting 150 words each
6. References – excluded from word count

### CONTENT

1. Clearly state the purpose of the work and the context.
2. Include introduction, a brief explanation of methods and/or analyses, and results, including their significance.
3. Reviews should follow a similar structure from introduction to conclusions
4. References should be closely related published works.
5. Do not include bibliographical listing.

### DEADLINES—NO EXCEPTIONS

SUBMISSION OF SUMMARIES	MAY 1 - JUNE 11, 2010
AUTHOR NOTIFICATION OF ACCEPTANCE	JULY 26, 2010
REVISED SUMMARIES DUE	AUGUST 10, 2010

### AUTHOR'S ORGANIZATIONAL APPROVAL

All internal reviews and organizational approvals must be completed prior to submittal of the final summary. It is the responsibility of the author to protect proprietary information.

### THE ANS SCIENTIFIC PUBLICATIONS DEPARTMENT MAY BE CONTACTED AT THE FOLLOWING:

AMERICAN NUCLEAR SOCIETY  
Scientific Publications Office  
555 North Kensington Avenue  
La Grange Park, IL 60526 USA  
Phone: 708-579-8253  
Email: [eleitschuh@ans.org](mailto:eleitschuh@ans.org)

# ANS 2010 ISOTOPES FOR MEDICINE AND INDUSTRY - TECHNICAL TRACKS

## 1. Applications in Nuclear Medicine—Diagnostics

Discussions will include advances in the design and utilization of new PET and SPECT radiolabeled compounds for molecular imaging studies in animal models and humans, strategies for developing site-specific in vivo targeting radiotracers, and applications of molecular imaging, radiopharmaceuticals for non-invasive assessment, monitoring and characterization of diseases and disease processes in patients.

## 2. Applications in Nuclear Medicine—Therapeutics

Recent progress in the development and evaluation of radiotherapeutic applications will be discussed, including radionuclide selection, labeling chemistry, target selection, choice of targeting vector, and dosimetry.

## 3. Reactor Production of Medical Isotopes

Topics to be discussed are target development, irradiation strategies, production yields, impurity levels, product separations, neutronics, thermal hydraulics, and computational methods.

## 4. Cyclotron Production of Biomedical Tracers

This session will cover recent developments and methodology for accelerator production of radionuclides for Positron Emission Tomography (PET) imaging and experimental therapy. The unique chemical and engineering challenges of short-lived radionuclide quality for human versus animal research will be explored. The implications of microchemistry with respect to accelerator production will be discussed.

## 5. Reactor and Accelerator based production of Mo-99

This session will highlight the recent developments for the critical world wide supply and address specific domestic issues.

## 6. Production and Application of Alpha Emitters

This session will include research in targeted alpha therapy with radioisotopes as well as boron capture therapy.

## 7. Reactor Production of Research and Industrial Isotopes

This session will review novel techniques and recent developments in the reactor production of isotopes. Domestic initiatives will be included.

## 8. High Energy Accelerator/Cyclotron Production of Isotopes

Program comparisons, target design challenges at high energy and intensity, target chemistry challenges at high energy, new isotope developments, economics and availability, and living with the physicists will be discussed.

## 9. Isotopes in Environmental, Industrial and Nuclear Power Applications

This session will include radionuclide interaction processes that control transport in the environment, new developments of separation strategies and techniques for nuclear waste minimization, transmutation, and spent fuel reprocessing related to the Advanced Fuel Cycle Initiative (AFCI) and the Global Nuclear Energy Program (GNEP).

## 10. R&D and Standards Needs for Future Applications

New societal needs include nuclear security, nuclear reactor decommissioning, quantitative occupational and medical radionuclide imaging. Underlying the successful development of new radio-technologies is the development of new standards and metrology basis for measurement quantification and validation, and information comparison over time and changes in the subject. Included will be discussion of quality assurance and GLP in radionuclide and radio pharmaceutical chemistry.

## 11. Nuclear- Radio- and Radionalytical Chemistry

Chemical methods play a critical role in the production, use, and monitoring of radioisotopes. Advances in the development and application of nuclear- and radiochemical methods will be discussed.

## 12. Manpower and Education

Radiochemistry and nuclear science manpower needs have been well documented by various National Academy of Science and Department of Energy committee reports. The need for radiochemists and nuclear scientists in industry, the National Laboratories, the Department of Energy, the Nuclear Regulatory Commission, nuclear medicine and various other areas of importance will be discussed, including the current status and importance of training.

## 13. Distribution and Transportation Issues

Byproduct Material Transportation Programs and Issues: This session will focus on denial and delay of shipment, effective and compliant transportation security plans, training of personnel, management controls, emerging issues surrounding the shipment of radioactive materials, and elements of an effective type A and type B shipping program.

## 14. Alternative Technologies

The session will discuss developments for replacement of isotopes. For example, a dire shortage of helium-3 exists for neutron detector applications in research and national security, but a number of emerging technologies are under development.

## TECHNICAL PROGRAM COMMITTEE

Robert W. Atcher (*LANL, SNM*), Steven R. Biegalski (*UT-Austin*), Peter Bode (*Delfi TU*), Mauro Bonardi (*U Milan*), R. Gregory Downing (*NIST*), Phillip D. Ferguson (*ORNL*), Samuel E. Glover (*CDC*), Richard Henkelmann (*ig Garching*), Rebecca M. Howell (*UT-M.D.Anderson*), Lin-Wen Hu (*MIT*), W. Dennis James (*TAMU*), S. Landsberger (*UT-Austin*), Stephen P. LaMont (*LANL*), Suzanne Lapi (*WUSTL*), Alfred Morgenstern (*EC-JRC*), Wayne D. Newhauser (*UT-M.D.Anderson*), F. Meiring Nortier (*LANL*), J. David Robertson (*UM-Columbia*), Buck Rogers (*WUSTL*), Wolf-gang Runde (*LANL*), Nicholas Spyrou (*U Surrey*), Benn Tannenbaum (*AAAS*), Kenan Unlu (*PSU*), Henry VanBrocklin (*UCSF SNM*), Rolf Zeisler (*NIST*)

Please contact Rolf Zeisler ([rolf.zeisler@nist.gov](mailto:rolf.zeisler@nist.gov)) or any of the TPC members to indicate your interest – Keyword: 2010-IMI.

## NOTE

Conference organizers recognize that travel to the United States from many places in the world requires timely planning for entry documents. We intend to provide any necessary documentation to bona fide registrants to the meeting. Please consult the US Department of State website for current visa requirements. [http://travel.state.gov/visa/visa\\_1750.html](http://travel.state.gov/visa/visa_1750.html)