



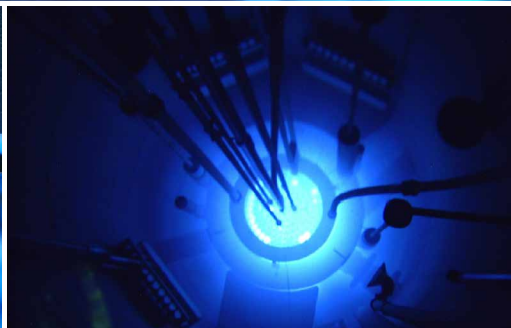
# ANS Annual Meeting

## 2018

### Call for Papers

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*DRIVING THE FUTURE OF  
NUCLEAR TECHNOLOGY*



June 17-21, 2018  
Philadelphia, PA  
Marriott Philadelphia Downtown

## CALL FOR PAPERS

### Driving the Future of Nuclear Technology

#### CONFERENCE CHAIRS:

##### General Chair

Dr. Krishna P. Singh, Holtec International

##### Technical Program Chair

Martin Sattison, Idaho National Laboratory

##### Assistant Technical Program Chair

Nicholas Brown, Pennsylvania State University

#### SUMMARY DEADLINE: JANUARY 26, 2018



#### FORMAT

Authors are now REQUIRED to use the ANS Template and Guidelines for TRANSACTIONS Summary Preparation provided on the ANS Web site. Summaries must be submitted electronically using Adobe Acrobat (PDF) files or original Microsoft Word documents and the ANS Electronic Paper Submission and Review System. Summaries not based on the ANS Template will be REJECTED.

#### GUIDELINES FOR SUMMARIES

Please submit summaries describing work that is NEW, SIGNIFICANT, and RELEVANT to the nuclear industry. ANS will publish all accepted summaries in the TRANSACTIONS. Papers are presented orally at the meeting, and presenters are expected to register for the meeting. Completed papers may be published elsewhere, but the summaries become the property of ANS. Under no circumstances should a summary or full paper be published in any other publication prior to presentation at the ANS meeting. It is the author's responsibility to protect classified or proprietary information.

#### CONTENT

1. Introduction: State the purpose of the work.
2. Description of the actual work: Must be NEW and SIGNIFICANT.
3. Results: Discuss their significance.
4. References: If any, must be closely related published works.  
Minimize the number of references.
5. Do not present a bibliographical listing.

#### LENGTH

1. The minimum length is one full page.
2. The maximum length is four pages, including references, tables, and figures.
3. Limit title to ten words; limit listing authors to three or fewer if possible.

#### PAGE CHARGE

ANS charges \$100 per final printed page in the TRANSACTIONS. Authors should be prepared to provide their purchase order numbers when submitting their summaries electronically.

#### REQUIRED TEMPLATE AND GUIDELINES FOR TRANSACTIONS SUMMARY PREPARATION

[www.ans.org/pubs/transactions](http://www.ans.org/pubs/transactions)

#### SUBMIT A SUMMARY

[www.ans.org/meetings](http://www.ans.org/meetings)

#### TRANSACTIONS COORDINATOR

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#### INFORMATION SERVICES

Joe Koblich, Director  
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**1. ACCELERATOR APPLICATIONS (AAD)**

1a. Accelerator Applications: General

**2. AEROSPACE NUCLEAR SCIENCE AND TECHNOLOGY (ANSTD)**

2a. Aerospace Nuclear Science and Technology: General

**3. BIOLOGY AND MEDICINE (BMD)**

3a. Biology and Medicine: General

**4. DECOMMISSIONING AND ENVIRONMENTAL SCIENCES (DESD)**

4a. DESD Security Optimization and Cost Savings in the 21st Century (P)

4b. Evolving and Contrasting Environmental Aspects—DESD for U.S. West and East Coast States (e.g. Ca and VT)

4c. Current Ongoing/Mature NPP Commercial DESD Owner, DOC and Licensee Perspectives

4d. Decommissioning and Environmental Sciences: New and Improved Tools, Techniques and Methods for the 21st Century

**5. EDUCATION, TRAINING, AND WORKFORCE DEVELOPMENT (ETWDD)**

5a. Education, Training and Workforce Development: General

5b. Training, Human Performance and Workforce Development

5c. Focus on Communications—I: Communicating with Policy Makers (P)

5d. Focus on Communications—II: Meet the Media (P)

5e. Innovations in New Reactor Designs (e.g., SMRs)

5f. Best of ANS Student Conference

5g. Research by the U.S. DOE NEUP Sponsored Students—I

5h. Research by the U.S. DOE NEUP Sponsored Students—II

5i. Workforce Needs for the Small Modular Reactor (SMR) World

5j. Hybrid Programs versus New Programs in Nuclear Engineering (P)

5k. Lessons from Young Nuclear Engineering College Programs (P)

**6. FUEL CYCLE AND WASTE MANAGEMENT (FCWMD)**

6a. Technical Grand Challenges—Closing the Nuclear Fuel Cycle

6b. Fuel Cycle and Waste Management: General

6c. The Waste Isolation Pilot Plant

6d. Modeling Spent Fuel Repository Performance

6e. Advances in Aqueous Separations Technologies

6f. Molten Salt Systems for FHRs and MSRs: Chemistry and Mass Transport

6g. Advanced Closed Fuel Cycles—The Economic Challenge (P)

6h. Status on Repository Concepts Internationally (P)

6i. Disposal of High-Level Radioactive Waste: What is the Strategy? (P)

6j. Updates on Environmental Monitoring Programs of Nuclear Sites

6k. Recycle and Reuse of Used Nuclear Fuel Resources

6l. University Research in Fuel Cycle and Waste Management

**7. FUSION ENERGY (FED)**

7a. Fusion Energy—Technology and Applications

**8. HUMAN FACTORS, INSTRUMENTATION, AND CONTROLS (HFICD)**

8a. Advanced Control Methods

8b. On-line Monitoring/Prognostic and Health Management for Nuclear Power Plants

8c. Advanced Reactor Instrumentation

8d. Nuclear Plant Design and Control for the Electric Grid of the Future

8e. Human Factors, Instrumentation and Controls: General

**9. ISOTOPES AND RADIATION (IRD)**

9a. Isotopes and Radiation: General

9b. Applications of DOE-NE Infrastructure Support for University Research Reactors

9c. Innovations in Radiation Detectors: New Designs, Improvements and Applications

**10. MATERIALS SCIENCE AND TECHNOLOGY (MSTD)**

Sponsoring embedded topical meeting—Nuclear Fuels and Structural Materials (NFSM)

**11. MATHEMATICS AND COMPUTATION (MCD)**

11a. Current Issues in Computational Methods—Roundtable (P)

11b. Transport Methods

11c. Computational Methods

11d. Mathematical Modeling

11e. Uncertainty Quantification and Sensitivity Analysis

11f. Optimization Techniques in Nuclear Systems Design

**12. NUCLEAR CRITICALITY SAFETY (NCSD)**

12a. ANS-8 Standards Forum (P)

12b. Data, Analysis and Operations in Nuclear Criticality Safety

12c. Criticality Accident Alarm System: Issues and Testing

12d. ENDF/B-VIII.0: Evaluation and Validation

12e. ANS 8.10 Criteria for Nuclear Criticality Safety Controls in Operations with Shielding and Confinement, Uses and Purpose (P)

12f. Sharing of Good Industry Practices and/or Lessons Learned in Nuclear Criticality Safety (P)

**13. NUCLEAR INSTALLATIONS SAFETY (NISD)**

13a. Licensing of Medical Isotope Production Facility

13b. Emergent Topics in Consensus Standards

13c. Current Topics in Probabilistic Risk Analysis

13d. Nuclear Installations Safety: General

13e. Developments for Strengthening Global Nuclear Governance

13f. Nuclear Safety R&amp;D at the NRC and NNSA

13g. Effects of Long-Term Operation on Electrical Cable Aging, Condition Monitoring, and Performance

13h. Safety Aspects of Accident Tolerant Fuels (P)

**14. NUCLEAR NONPROLIFERATION POLICY (NNPD)**

14a. Advancing Global Nuclear Energy and Strengthening National Security (P)

14b. Nuclear Nonproliferation Policy: General

**15. OPERATIONS AND POWER (OPD)**

15a. Advanced Gen-IV Reactors

15b. Energy Storage

15c. New Nuclear Construction Around the World—Status Report (P)

15d. Hybrid Energy Systems

15e. Energy Mix—Fossil, Gas, Hydro, Wind, Solar and Nuclear (P)

**16. RADIATION PROTECTION AND SHIELDING (RPSD)**

16a. Radiation Protection and Shielding: General

16b. Computational Tools for Radiation Protection and Shielding

16c. Radiation Protection and Shielding—Roundtable (P)

16d. Defense Nuclear Nonproliferation Research and Development University Consortia Work Applied to Radiation Shielding

2018 ANNUAL MEETING:  
SESSION TITLES BY DIVISION  
CONTINUED

(P) = Panel

17. REACTOR PHYSICS (RPD)

- 17a. Reactor Physics: General
- 17b. Reactor Analysis Methods
- 17c. The Nuclear Energy Advance Modeling and Simulation (NEAMS) Workbench
- 17d. Advances in Fast Reactor Design and Concepts
- 17e. Reactor Physics Design, Validation and Operational Experience

18. ROBOTICS AND REMOTE SYSTEMS (RRSD)

- 18a. Robotics and Remote Systems: General

19. THERMAL HYDRAULICS (THD)

- 19a. Experimental Thermal Hydraulics
- 19b. Computational Thermal Hydraulics
- 19c. General Thermal Hydraulics
- 19d. Two-Phase and Heat Transfer Fundamentals
- 19e. Multiscale Thermal Hydraulics Simulation and Validation
- 19f. Computational Fluid Dynamics Codes for Nuclear Thermal Hydraulics Applications (P)
- 19g. High-Resolution Multi-Phase Simulations
- 19h. Thermal Hydraulic Analysis in Support of Severe Accident Management
- 19i. Natural Circulation and Reliability of Natural Circulation Phenomena and Associates Systems
- 19j. Molten Salt Thermal Hydraulics and Mass Transport

2018 ANNUAL MEETING: TECHNICAL DIVISIONS

ACCELERATOR APPLICATIONS (AAD)

Peter Hosemann, peterh@berkeley.edu

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Irina Popova, popovai@ornl.gov

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YOUNG MEMBERS GROUP (YMG)

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Nicolas Stauff, nstauff@anl.gov



# ANS

# Embedded Topical

June 17-21, 2018 | Philadelphia, PA | Marriott Philadelphia Downtown

## CALL FOR PAPERS

### Nuclear Fuels and Structural Materials for the Next Generation Nuclear Reactors (NFSM 2018)

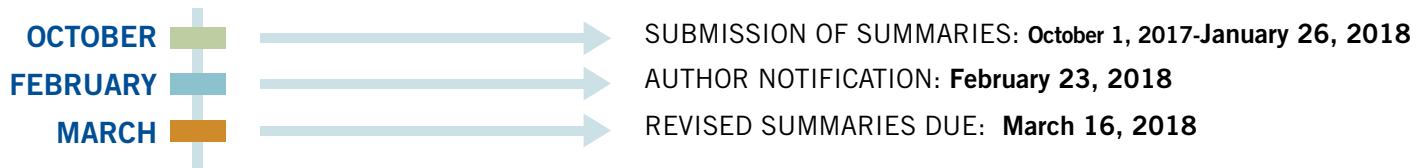
#### OFFICIALS:

##### General Chairs

Heather J. MacLean Chichester, Idaho National Laboratory  
Kurt A. Terrani, Oak Ridge National Laboratory

##### Technical Program Chairs

Giovanni Pastore, Idaho National Laboratory  
Kevin G. Field, Oak Ridge National Laboratory



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#### SUBMISSION WEBSITE

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#### ABOUT THE MEETING

NFSM 2018 will bring together international experts working on development and deployment of next generation fuels and structural materials for current and advanced fission reactors. Experts from national laboratories, industry, and academia are invited to attend and discuss their current research, development directions and latest findings. The meeting will cover a wide spectrum of experimental and modeling research related to fuels and core structural materials across various reactor platforms and throughout the fuel cycle.

NFSM 2018 features a single oral track with talks focused on summaries and directions of ongoing large-scale research programs and upcoming initiatives. Only a limited number of submissions will be scheduled for oral presentations. The majority of technical presentations at NFSM 2018 will be held in a poster session to facilitate detailed discussions. Student attendance is highly encouraged and awards will be provided to the two best student posters. At least one author is required to register and attend the meeting.

Experimental and modeling research activities within the following areas are particularly encouraged for submission to NFSM 2018:

- Fabrication and Characteristics of Advanced Fuel Forms
- Cladding Development for Fast and Thermal Reactors
- Metallic and Ceramic Core Structural Component Development
- Environmental Effects on Core Constituents in Fast and Thermal Reactors
- Irradiation and PIE of Fuel and Core Structural Materials
- In-Pile Behavior of Core Constituents
- Fuel Performance Modeling and Analysis
- Lifetime Management and Sustainability for LWRs
- Used Fuel Management, Storage, and Reprocessing
- Fuel and Core Materials Impact on Reactor Safety
- Accident Tolerant Fuels

Summaries submitted to NFSM 2018 will be reviewed and published electronically to be available at the meeting.