



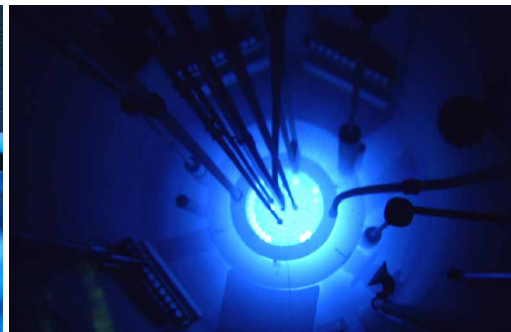
# ANS Annual Meeting

## 2018

### Call for Papers

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*DRIVING THE FUTURE OF  
NUCLEAR TECHNOLOGY*



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



# ANS

# 2018 Annual Meeting

DRIVING THE FUTURE OF NUCLEAR TECHNOLOGY

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

## CALL FOR PAPERS

### EXECUTIVE CHAIRS

#### *Technical Program Chair*

Martin Sattison, Idaho National Laboratory

#### *General Chair*

Dr. Krishna P. Singh, Holtec International

#### *Assistant Technical Program Chair*

Nicholas Brown, Pennsylvania State University

### SUMMARY DEADLINE: FRIDAY, JANUARY 26, 2018

- JANUARY** → SUBMISSION OF SUMMARIES: **Friday, January 26, 2018**
- FEBRUARY** → SUBMISSION OF DESCRIPTION AND PANELISTS/SPEAKERS FOR PREVIEW PROGRAM: **Friday, February 16, 2018**
- FEBRUARY** → AUTHOR NOTIFICATION OF ACCEPTANCE: **Friday, February 23, 2018**
- MARCH** → REVISED SUMMARIES DUE: **Friday, March 16, 2018**
- APRIL** → ANY ADDITIONAL DESCRIPTIONS AND PANELISTS/SPEAKERS FOR OFFICIAL PROGRAM: **Friday, April 17, 2018**

### FORMAT

Authors are now REQUIRED to use the ANS Template at [ans.org/pubs/transactions](http://ans.org/pubs/transactions) 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.

### SUBMIT A SUMMARY

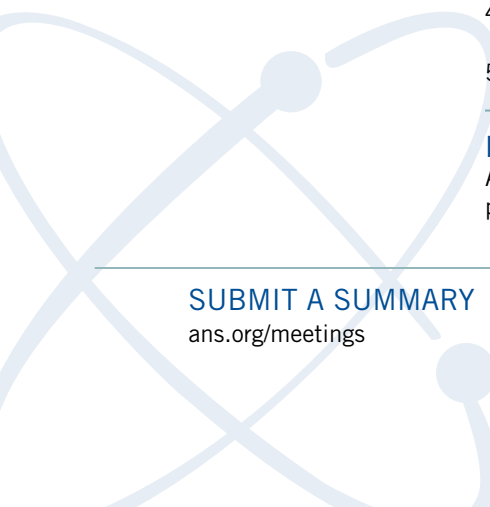
[ans.org/meetings](http://ans.org/meetings)

### TRANSACTIONS COORDINATOR

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### INFORMATION SERVICES

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## SESSION TITLES BY DIVISION

(P) = Panel

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&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)



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DRIVING THE FUTURE OF NUCLEAR TECHNOLOGY

## SESSION TITLES BY DIVISION CONTINUED

(P) = Panel

### 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

### 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

## TECHNICAL DIVISIONS

ACCELERATOR APPLICATIONS (AAD)  
Peter Hosemann, peterh@berkeley.edu

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# ANS

## Nuclear Fuels and Structural Materials for the Next Generation Nuclear Reactors (NFSM 2018) 2018 Annual Meeting Embedded Topical Meeting

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

### CALL FOR PAPERS

#### EMBEDDED TOPICAL MEETING CHAIRS

##### **General Co-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

#### SUMMARY DEADLINE: JANUARY 26, 2018

**JANUARY**



SUBMISSION OF SUMMARIES: **Friday, January 26, 2018**

**FEBRUARY**



AUTHOR NOTIFICATION OF ACCEPTANCE: **Friday, February 23, 2018**

**MARCH**



REVISED SUMMARIES DUE: **Friday, March 16, 2018**

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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.

#### 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.

#### SUBMIT A SUMMARY

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

#### TRANSACTIONS COORDINATOR

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#### INFORMATION SERVICES

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### TOPICS

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EXPERIMENTAL AND MODELING RESEARCH ACTIVITIES WITHIN THE FOLLOWING AREAS ARE PARTICULARLY ENCOURAGED FOR SUBMISSION TO NFSM 2018

1. FABRICATION AND CHARACTERISTICS OF ADVANCED FUEL FORMS
2. CLADDING DEVELOPMENT FOR FAST AND THERMAL REACTORS
3. METALLIC AND CERAMIC CORE STRUCTURAL COMPONENT DEVELOPMENT
4. ENVIRONMENTAL EFFECTS ON CORE CONSTITUENTS IN FAST AND THERMAL REACTORS
5. IRRADIATION AND PIE OF FUEL AND CORE STRUCTURAL MATERIALS
6. IN-PILE BEHAVIOR OF CORE CONSTITUENTS
7. FUEL PERFORMANCE MODELING AND ANALYSIS
8. LIFETIME MANAGEMENT AND SUSTAINABILITY FOR LWRS
9. USED FUEL MANAGEMENT, STORAGE, AND REPROCESSING
10. FUEL AND CORE MATERIALS IMPACT ON REACTOR SAFETY
11. ACCIDENT TOLERANT FUELS

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SUMMARIES SUBMITTED TO NFSM 2018 WILL BE REVIEWED AND PUBLISHED ELECTRONICALLY TO BE AVAILABLE AT THE MEETING.

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