

ANS[®] CALL FOR PAPERS

22nd International Topical Meeting on Nuclear Thermal Hydraulics (NURETH-22)

August 22-27, 2027 | Denver, CO | Hilton Denver City Center

EXECUTIVE CHAIRS

SUBMIT AN ABSTRACT

<https://apps.ans.org/esr/nureth2027//>



PROGRAM SPECIALIST

Isabel Brinker

708-579-8290 | epsr@ans.org



General Chairs:

Piyush Sabharwal, INL
Bao-Wen Yang, Delta Energy Group

General Co-Chairs

David Aumiller, Naval Nuclear Laboratory
Jacopo Buongiorno, MIT
Steve Bajorek, US NRC
Annalisa Manera, ETH-Zurich
Hisashi Ninokata, Tokyo Inst. of Technology

Honorary Chairs

N. K. Anand, Texas A&M University
Youssef Ballout, Kadmos Energy Services
Fan-Bill Cheung, Penn State
Francesco D'Auria, University of Pisa
Yassin Hassan, Texas A&M University

Technical Program Chairs:

Jan Vermaak, INL
Donna Post Guillen, INL
Elia Merzari, Penn State

Technical Program Committee Co-Chairs

Mark Anderson, University of Wisconsin
Igor Bolotnov, NCSU
Baris Sarikaya, Constellation Nuclear
Eung Soo Kim, Seoul National University
Mauricio Tano-Retamales, INL
Hiroyuki Yoshida, JAEA

International Steering Committee

Robert Martin, ACRS
Andrew Morreale, CNL
Takashi Hibiki, City Univ. of Hong Kong
Jinzhao Zhang, Tractebel

IMPORTANT DEADLINES

**SUBMISSION OF ABSTRACTS
(NO EXTENSIONS)**
November 1, 2026

**AUTHOR NOTIFICATION OF
ACCEPTANCE (ABSTRACTS)**
December 1, 2026

FULL PAPERS DUE
January 31, 2027

**AUTHOR NOTIFICATION OF
ACCEPTANCE (FULL PAPERS)**
March 31, 2027

**REVISED FULL PAPERS
DUE**
May 31, 2027

ABOUT THE MEETING

NURETH is the premier international forum for experts in nuclear reactor thermal hydraulics and closely related fields. Held biennially, the conference brings together leading researchers, engineers, and innovators to share cutting-edge developments. NURETH-22 will highlight the latest advancements in thermal-hydraulics, including state-of-the-art computational methods, groundbreaking experimental techniques, new data, innovative analysis methods, and the integration of artificial intelligence and machine learning (AI/ML) into thermal-hydraulic analysis. The conference also fosters global collaboration, encouraging partnerships that drive innovation in these rapidly evolving research areas.

GUIDELINES

Abstracts will be solicited in the topic areas on the following page. If your abstract is approved, you will be required to submit a full paper for presentation and publication. Acceptance of abstracts does not guarantee a presentation at the conference. In addition, please follow these guidelines:

- Abstract submission limit is 250 words.
- Full-paper submission limit: 14 pages. Papers exceeding 14 pages will be rejected unless an exception is made.
- Conference proceedings will be distributed digitally. Selected papers will

be published in special issues of Nuclear Technology, Nuclear Science and Engineering, Nuclear Engineering and Design, and/or Fusion Science and Technology.

TECHNICAL TRACKS

1. FUNDAMENTAL THERMAL HYDRAULICS

- 1A. Two-Phase Flow and Heat Transfer
- 1B. Boiling and Condensation
- 1C. Interfacial Area Transport
- 1D. Critical Heat Flux and DNB
- 1E. Natural Circulation in Reactor Systems
- 1F. Thermal Hydraulic Scaling
- 1G. Flow Instability and Related Phenomena
- 1H. Thermal-Hydraulics of Flow-Structure and Material Interaction
- 1I. Microchannel and Heat Transfer Phenomena
- 1J. General

2. COMPUTATIONAL THERMAL HYDRAULICS

- 2A. Thermal Hydraulics System Code Development and Analysis
- 2B. Computational Fluid Dynamics
- 2C. Multiphase CFD
- 2D. Multiphysics Development and Applications
- 2E. DNS for Model Development
- 2F. Multiscale CFD and Coupling with System Codes
- 2G. Subchannel Thermal Hydraulic Analysis
- 2H. Computational Fluid Dynamics Benchmarks
- 2I. General

3. EXPERIMENTAL THERMAL HYDRAULICS

- A. Experimental Methods and Instrumentation
- 3B. Integral Effects Tests
- 3C. Separate Effects Tests
- 3D. Tests for Assessment of CFD
- 3E. Experimental Databases and Preservation
- 3F. Experiments for Advanced and Special Purpose Reactors
- 3G. Rod Bundle Experiments
- 3H. Critical Heat Flux and Post-CHF Experiments
- 3I. UQ Methods and Best Practices for Experiments
- 3J. Advanced Techniques and High-Fidelity Measurement/Data Analysis
- 3K. Low Pressure/Low Flow Rod Bundle CHF and Related Thermal-Hydraulics
- 3L. General

4. VERIFICATION, VALIDATION AND UNCERTAINTY QUANTIFICATION (VUUQ)

- 4A. Verification and Validation of Systems Codes
- 4B. Verification and Validation of Subchannel Codes
- 4C. Best Practices in CFD
- 4D. Uncertainty Quantification and Propagation Methods
- 4E. BEPU Methodologies, Analysis, and Challenges in Licensing
- 4F. General

5. PLANT OPERATIONS AND INNOVATIONS IN INDUSTRYMANAGEMENT (FCWMD)

- 5A. Water Chemistry and Plant Operation
- 5B. BWR Instabilities and Nonlinear Dynamics
- 5C. Plant Simulating, Analysis, and Operator Training
- 5D. Spent Fuel Heat Transfer
- 5E. Thermal-Hydraulics Challenges for Power Uprate, Licensing Renewal, and Life Extension
- 5F. Fuel Fragmentation Relocation and Dispersion
- 5G. Time at Temperature
- 5H. Thermal Stratification and other Operational Phenomena
- 5I. General

6. SEVERE ACCIDENTS

- 6A. Severe Accident Scenarios and Source Term
- 6B. In-Vessel Corium and Debris Bed Coolability
- 6C. Ex-Vessel Corium Interaction and Coolability
- 6D. Containment TH, Hydrogen and Fission Product Behavior
- 6E. Design Features to Prevent Severe Accidents
- 6F. Uncertainty in Severe Accident Modeling
- 6G. Severe Accidents in Advanced Reactors and Nuclear Installations
- 6H. General

7. NEXT GENERATION REACTOR TECHNOLOGIES

- 7A. Gas Cooled Reactors
- 7B. Liquid Metal Cooled Reactors and Heat Transfer in Liquid Metals
- 7C. Molten Salt Reactors Thermal Hydraulics and Molten Salts Thermophysical Properties Characterization
- 7D. Supercritical Water-Cooled Reactors
- 7E. Microreactors
- 7F. Reactors for Non-Land Based Applications: Space
- 7G. Reactors for Non-Land Based Applications: Maritime
- 7H. Thermal Hydraulics of Fusion Reactors
- 7I. General

8. LWR, SMR, AND MMR

- 8A. Small Modular LWRs
- 8B. Thermal-Hydraulics, Performance, and Reliability of Passive Safety Systems
- 8C. Advanced Fuel Designs for SMR/AMR/MMR
- 8D. Two-Phase Flow Instability, Natural Circulation, and Low Pressure/Low Flow Phenomena
- 8E. Coupled RCS-Containment Interactions
- 8F. Thermal Hydraulics Challenges in Helical Coil Steam Generators, Compact and Advanced Heat Exchangers
- 8G. Instability in BWR-type SMRs and Chimney Recirculation
- 8H. Active and Passive Systems Interactions
- 8I. Thermal-Hydraulics and Multiphysics Simulation for SBF Reactors
- 8J. General

9. ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING (AI/ML) FOR NUCLEAR THERMAL HYDRAULICS

- 9A. Data-Driven and Physics-Informed Modeling and Closures
- 9B. Surrogate Models, Neural Operators, and ML-Accelerated Simulation
- 9C. AI/ML for Experiments
- 9D. Monitoring, Diagnostics, Control, and Digital Twins
- 9E. UQ, V&V, and Trustworthiness of ML Models
- 9F. General

10. SPECIAL TOPICS

- 10A. Advanced Reactor Fuel Thermal Hydraulics
- 10B. Heat Pipe Testing and Simulation
- 10C. Multiphysics Methods for Reactor Modeling
- 10D. Fluid-Structure Interaction: Methods, Analyses, and Experiments
- 10E. Thermal-Hydraulics in Research Reactors: Analyses Methods, Irradiation Experiments, and Medical Isotope Production
- 10F. Innovative Reactor Fuels
- 10G. International OECD and IAEA Benchmark Efforts
- 10H. International Benchmark on Experimental/Analytical Reflood Project – ISP-53
- 10I. Integrated Energy Systems and Process Heat Applications
- 10J. Thermal Energy Storage
- 10K. Decommissioning
- 10L. Reliability of Passive Systems
- 10M. Plant Operations
- 10N. Digital Engineering, Digital Twins, Reduced Order Modeling
- 10O. Rod Bundle Heat Transfer
- 10P. The Power of Failure: Lessons Learned from Unsuccessful Experimental and Numerical Efforts



한국원자력학회
Korean Nuclear Society



Sociedad Nuclear Mexicana

