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nets2027/](https://apps.ans.org/esr/nets2027/)



PROGRAM SPECIALIST

Isabel Brinker
708-579-8290 | ibrinker@ans.org

Nuclear and Emerging Technologies for Space (NETS 2027)

May 2-5, 2027 | Cleveland, OH | Huntington Convention Center of Cleveland

EXECUTIVE CHAIRS

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SUBMISSIONS DUE: NOVEMBER 6, 2026 (NO EXTENSIONS)

**ABSTRACTS AND FULL
PAPERS DUE
NOVEMBER 6, 2026**

**AUTHOR NOTIFICATION
OF ACCEPTANCE
DECEMBER 18, 2026**

**REVISED ABSTRACTS
AND FULL PAPERS DUE
JANUARY 29, 2027**

ABOUT THE CONFERENCE

Papers and abstracts are solicited for Nuclear and Emerging Technologies for Space 2027, to be held May 2-5, 2027 in Cleveland, OH at the Huntington Convention Center of Cleveland. This event is organized by the American Nuclear Society (ANS). Authors and presenters are cordially invited to participate in this event to exchange ideas and knowledge, develop strong relationships across organizations, and establish collaborations to solve challenging problems.

FORMAT, PRESENTATIONS, AND PUBLISHING

Paper and abstract acceptance will be based upon originality of the work, rigor of the methods or models, quality of results, and impact of the scientific advances to the field of nuclear and emerging technologies for space. There are two options for submittal using the Electronic Paper Submittal and Review (EPSR) system:

Full Paper/Standard-Length Presentation Option. Submit a single-page abstract to the full-paper session in one of the tracks or special sessions. If accepted, you will be expected to provide a full paper (maximum of 8 pages) and accompanying standard-length presentation at the conference.

Short Abstract/Lightning Talk Option. Submit a 150-word abstract to the Lightning Talk session in one of the tracks or special sessions. If accepted, you will provide a brief Lightning Talk at the conference. For this option, you will not submit a full paper later.

Templates for abstracts and papers will be available on the NETS 2027 webpage. NETS 2027 will consist of four tracks and two sessions of special programming. When you submit your paper or abstract, please indicate where you would like your work to be considered.

- **Track 1: SR-1 and Spacecraft Reactors.**
- **Track 2: LR-1 and Planetary Surface Reactors.**
- **Track 3: Dragonfly and Radioisotope Power Systems.**
- **Track 4: Building the Space Nuclear Industrial Base.**

All accepted and presented papers and abstracts will be published in the conference proceedings. Authors of select papers may be invited to submit updated or expanded versions to a special edition of Nuclear Technology or Nuclear Science and Engineering. Journal submissions undergo further peer review and invitation is not a guarantee of acceptance.

NETS 2027 TRACKS

1. SR-1 AND SPACECRAFT REACTORS

Spacecraft reactor systems and missions, including SR-1 topics; reactor physics; fuels and materials; power conversion; thermal management and heat rejection; control systems and autonomy; spacecraft integration; ground testing and qualification; launch vehicle and complex compatibility; and civil, commercial, defense, and science mission applications.

2. LR-1 AND PLANETARY SURFACE REACTORS

Planetary surface reactor systems and infrastructure, including LR-1 and MR-1 topics; lunar and Mars surface power architectures; deployment and operations; power management and distribution; heat rejection in surface environments; surface integration with habitats, mobility, ISRU, science payloads, and commercial infrastructure; reliability; maintainability; testing.

3. DRAGONFLY AND RADIOISOTOPE POWER SYSTEMS

Dragonfly mission topics and radioisotope power and heat technologies, including radioisotope power systems; radioisotope heater units; isotope production and processing; fuel fabrication and heat-source production; power conversion; materials; component and system testing; ground operations; safety; mission operations; and future RPS-enabled science and exploration missions.

4. BUILDING THE SPACE NUCLEAR INDUSTRIAL BASE

Cross-cutting topics for scaling the space nuclear enterprise, including technology R&D; nuclear infrastructure and facilities; isotope, fuel, materials, manufacturing, testing, evaluation, and qualification supply chains; launch approval; policy, regulatory, and governance frameworks; space nuclear safety; mission applications; workforce; standards; programmatic; procurement; and industrial partnerships.

SPECIAL PROGRAMMING

2nd WORKSHOP - FISSION INSTRUMENTATION AND CONTROLS FOR SPACE (FICS)

NETS is excited to welcome the 2nd Workshop for Fission Instrumentation and Controls for Space. Non-export controlled papers (full & lightning talks) can be submitted and will be considered for inclusion in the FICS-2 Workshop Special Sessions. Topics include instrumentation (sensors), controls (actuators and software), and conditioning electronics for fission reactor systems relevant to Space. Additional workshopping activities will be planned and held concurrently with other NETS Programming.

INNOVATIVE APPROACHES TO ACHIEVING SPACE REACTOR SYSTEMS

This Special Session focuses on cutting-edge approaches to spacecraft structure and thermal systems design tailored for nuclear propulsion and power systems. Topics include deployable assemblies, structural assembly, vehicle aggregation, innovative system designs, and concepts supporting the use of in-space assembly and mission flexibility. The session aims to showcase forward-leaning approaches that enable larger, more capable, and more adaptive nuclear space systems. Papers can be submitted and considered for inclusion in a series of special sessions on this topic.

The technical committee especially welcomes papers that connect hardware, missions, safety, licensing, infrastructure, and industrial-base readiness, and that identify practical pathways from research and demonstration to mission adoption.