

ANNOUNCEMENT and FIRST CALL FOR PAPERS



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2025 IEEE NUCLEAR AND SPACE RADIATION EFFECTS CONFERENCE

Short Course and Radiation Effects Data Workshop

July 14-18, 2025

Renaissance Nashville Hotel
Nashville, Tennessee

You are cordially invited to attend the 2025 IEEE Nuclear and Space Radiation Effects Conference to be held July 14-18, 2025 at the Renaissance Nashville Hotel, Nashville, Tennessee. The conference features a technical program consisting of eight to ten technical sessions of contributed papers describing the latest observations in radiation effects, a Short Course on radiation effects issues, a Radiation Effects Data Workshop, and an Industrial Exhibit. The technical program includes oral and poster sessions.

Papers on nuclear and space radiation effects on electronic and photonic materials, devices, circuits, sensors, and systems, as well as semiconductor processing technology and design techniques for producing radiation-tolerant (hardened) devices and integrated circuits, will be presented at this meeting of engineers, scientists, and managers. International participation is strongly encouraged.

We are soliciting papers describing significant new findings in the following or related areas:

Basic Mechanisms of Radiation Effects in Electronic Materials and Devices

- Single-Event Charge Collection Phenomena and Mechanisms
- Ionizing Radiation Effects
- Displacement Damage
- Radiation Transport, Energy Deposition, and Dosimetry
- Materials and Device Effects
- Processing Related Radiation Effects

Hardness Assurance Covering Piece Parts, Systems, and Testing Approaches

- New Modeling and Testing Techniques, Guidelines, and Hardness Assurance Methodologies
- Unique Radiation Exposure Facilities, Test Facility Developments, Novel Instrumentation Methods
- Dosimetry

Radiation Effects on Electronic and Photonic Devices, Circuits, and Systems

- Single Event Effects, Total Dose, and Displacement Damage
- MOS, Bipolar, and Advanced Technologies
- Systems on a Chip, GPUs, FPGAs, Microprocessors, and Neuromorphic Devices
- Isolation Technologies, such as SOI and SOS
- Methods for Hardened Design and Manufacturing
- Modeling and Hardening of Devices and Circuits
- Cryogenic or High Temperature Effects
- Novel Device Structures, such as MEMS and Nanotechnologies
- Emerging Modeling and Experimental Techniques for Hardening Systems

Space, Atmospheric, and Terrestrial Radiation Effects

- Characterization and Modeling of Radiation Environments
- Space Weather Events and Effects
- Spacecraft Surface and Internal Charging
- Predicting and Verifying Soft Error Rates (SER)

New Developments of Interest to the Radiation Effects Community

Paper Summary Deadline: February 7, 2025

PROCEDURE FOR SUBMITTING SUMMARIES

Authors must conform to the following requirements:

1. Prepare a single Adobe Acrobat file consisting of a cover page and an informative two to four page summary describing results appropriate for 12-minute oral or poster presentation. The cover page must provide an abstract no longer than 35 words, the title, name and company affiliation of the authors, and company address (city, state, country). Identify the author presenting the paper and provide telephone, and email address. The summary must include sufficient detail about the work to permit a meaningful technical review. In the summary, clearly indicate (a) the purpose of your work, (b) significant new results with supporting technical material, and (c) how your work advances the state of the art. Show key references to other related work. The summary must be no less than two and no more than four pages in length, including figures and tables. All figures and tables must be large enough to be clearly read. Note that this is more than an abstract, but do not exceed four pages.
2. Prepare your summary in single-column or IEEE TNS standard two-column format, using 11 point or greater font size, formatted for either U.S. Standard (8.5 x 11 inch) or A4 (21 x 29.7 cm) page layout, with 1 inch (2.5 cm) margins on all four sides.
3. Obtain all corporate, sponsor, and government approvals and releases necessary for presenting your paper at an open attendance international meeting.
4. Summary submission is electronic only, through www.nsrec.com. The submission process consists of entering the paper title, author(s) and affiliation(s), an abstract no longer than 35 words, and uploading the summary. Authors are prompted to state their preference for presentation (oral, poster, or data workshop poster) and for session. Details of the submission process may be found at www.nsrec.com. The final category of all papers will be determined by the Technical Program Committee, which is responsible for selecting final papers from initial submissions.

Papers accepted for oral or poster presentation at the technical program are expected to be submitted for publication in the IEEE Transactions on Nuclear Science (January 2026). Selection for this issue will be based on a separate submission of a complete paper. These papers will be subject to the standard full peer review given all papers submitted to the IEEE Transactions on Nuclear Science. Further information will be sent to prospective authors upon acceptance of their NSREC summary. It is not necessary to be an IEEE member to present a paper or attend the NSREC. However, we encourage IEEE and NPSS membership of all NSREC participants.

RADIATION EFFECTS DATA WORKSHOP

The Radiation Effects Data Workshop is a forum for papers on radiation effects data on electronic devices and systems. Workshop papers are intended to provide radiation response data to scientists and engineers who use electronic devices in a radiation environment, and for designers of radiation-hardened systems. Papers describing new simulation techniques and results, or radiation facilities are also welcomed. **The procedure for submitting a summary to the Workshop is identical to the procedure for submitting NSREC summaries.** Radiation Effects Data Workshop papers will be published in a Workshop Record and are not candidates for publication in the Conference issue of the *IEEE Transactions on Nuclear Science*.

NASHVILLE, TENNESSEE

The NSREC 2025 is at the Nashville Renaissance in downtown Nashville adjacent to the famous 5th and Broadway. Nashville, nicknamed Music City, is the capital of the U.S. state of Tennessee and home to Vanderbilt University. Legendary country music venues include the Grand Ole Opry House, home of the famous "Grand Ole Opry" stage and radio show. The Country Music Hall of Fame and Museum and historic Ryman Auditorium are steps away from the Renaissance.

Music is the universal language and there is no better place to experience music than in Nashville, a city of storytellers and dreamers. It is a city where all are welcome with an authentic, friendly, creative spirit. It's a city for you to discover all it has to offer and you can write your own Music City story. Nashville is the culinary destination of today, with chef-driven restaurants and classic dining spots serving up hot chicken, barbecue, and of course, meat and three. With nearly 200 new restaurants opening in the past two years, a one-of-a-kind culinary adventure awaits.

Beyond the music, food and drink, there is never a shortage of inspiring things to do. From the museums, the arts, sports and shopping, there is an "only in Nashville" experience waiting for you.

Please join us and find your Nashville inspiration. Experience the creative energy. Discover the neighborhoods. Seek out the hidden gems. Uncover the history and history in the making. And of course, enjoy the music.

Summaries must be received by February 7, 2025
Detailed submission and formatting instructions will be available after December 1, 2024 at www.nsrec.com



Courtesy Nashville Convention & Visitors Corp