

ANNOUNCEMENT and FINAL CALL FOR PAPERS



2022 IEEE NUCLEAR AND SPACE RADIATION EFFECTS CONFERENCE Short Course and Radiation Effects Data Workshop

July 18-22, 2022

Utah Valley Convention Center
Provo, Utah

www.nsrec.com

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IEEE/NPSS Radiation Effects Committee

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You are cordially invited to attend the 2022 IEEE Nuclear and Space Radiation Effects Conference to be held July 18-22, 2022 at the Utah Valley Convention Center, Provo, Utah. 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 with current relevance offered on July 18, 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-Induced Radiation Effects

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
- 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 Charging
- Predicting and Verifying Soft Error Rates (SER)

Hardness Assurance Technologies, Modeling, and Testing

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

New Developments of Interest to the Radiation Effects Community

PAPER SUMMARY DEADLINE: FEBRUARY 4, 2022

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.

**Summaries must be received by
February 4, 2022**

**Detailed submission and
formatting instructions
will be available after
December 1, 2021
at www.nsrec.com**

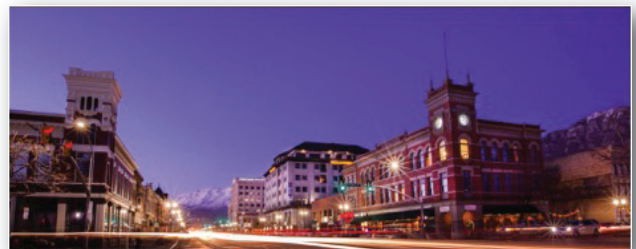
Papers accepted for oral or poster presentation at the technical program are expected to be submitted for publication in the IEEE Transactions on Nuclear Science (January 2023). Selection for this issue will be based on a separate submission of a complete paper. These papers will be subject to the standard 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 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*.

PROVO, UTAH

The location for NSREC 2022 will be the Utah Valley Convention Center, just 45 minutes south of Salt Lake City in historic Downtown Provo, Utah. Provo is situated in the heart of Utah Valley between the eastern shore of Utah Lake and the towering Wasatch Mountains. Mount Timpanogos dominates the northern part of the city at 11,957 feet (3,644 meters); these rugged mountains east of Provo create one of the most picturesque backdrops in Utah. Provo is a small city with a bustling downtown area with its variety of shops and activities and is home to Brigham Young University. It is a city steeped in history, with world-class museums, galleries, performing arts, and family attractions. And, Provo is the ideal starting point to visit the great American Southwest! With the Wasatch to the north, the High Uintas Wilderness to the east and Utah's five magnificent National Parks in the south (and the Grand Canyon just beyond), Provo provides endless opportunities for world-class outdoor activities. Prepare to be amazed! The Utah Valley Convention Center is ideally located in the city center and adjacent to the Provo Marriott and Hyatt Place, offering excellent accommodations. Within minutes, you will be within a thriving district where families and business professionals alike can enjoy the colorful scenery, historic buildings, vintage boutiques and over 50 restaurants. Alternatively, one can break on the roof top garden, offering breathtaking views of the Wasatch Mountains without leaving the venue. Come and join us for NSREC 2022 and experience it for yourself.



Courtesy Utah Valley CVB