

ANNOUNCEMENT and FINAL CALL FOR PAPERS



2021 IEEE NUCLEAR AND SPACE RADIATION EFFECTS CONFERENCE Short Course and Radiation Effects Data Workshop

July 19-23, 2021
Shaw Centre
Ottawa, Canada

www.nsrec.com

Sponsored By
IEEE/NPSS Radiation Effects Committee

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You are cordially invited to attend the 2021 IEEE Nuclear and Space Radiation Effects Conference to be held July 19-23, 2021 at the Shaw Centre, in Ottawa, Canada. 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 19, 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 5, 2021

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 5, 2021**

**Detailed submission and
formatting instructions
will be available after
December 1, 2020
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 2022). 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*.

OTTAWA, CANADA

The Westin Ottawa with the adjoining Shaw Centre is the location for NSREC 2021. Ottawa is Canada's capital, a dynamic showcase city of more than one million people. Located in Ontario at the Quebec border, it's a place where you'll hear English and French spoken in the streets; where you can discover Canada's proud heritage at impressive national sites and famous landmarks, including the Rideau Canal, a UNESCO World Heritage Site. It's a city steeped in culture, with world-class museums and galleries displaying stunning national collections and special exhibitions from Canada and around the world.

This city is a uniquely beautiful place: an urban centre on the edge of nature where you can enjoy the great outdoors either just outside your hotel room or nearby in the surrounding countryside. There's an easy cosmopolitan vibe here, and Ottawa is known for being both welcoming and walkable. Explore the distinctive local neighbourhoods, including the historic ByWard Market: by day this area boasts a bustling farmers' market and chic shops, by night it hums with activity at the restaurants, pubs, and nightclubs.

This is also a city that enjoys the finer things in life, with a culinary community that's earning wide acclaim, unique boutiques and shopping districts, a lively local music and art scene, and always exciting nightlife. The Westin Ottawa is ideally located right downtown, mere steps away from the historic sites and landmarks, and only a short drive from Ottawa's international airport.

This is Ottawa, Canada's capital. Please join us for NSREC 2021 and experience it for yourself.



Courtesy of Tourism Ottawa