



38th Annual Conference of the Canadian Nuclear Society and
42nd Annual CNS/CNA Student Conference

The Nuclear Future: Challenges and Innovation
Notre avenir nucléaire : défis et innovation

2018 June 3 - 6

Sheraton Cavalier Saskatoon Hotel, Saskatoon, SK



Call for Papers

The peaceful application of nuclear science and technology has contributed clean, safe and resilient energy to mitigate climate change challenges; diagnostic and therapy tools that improve individual health; and means that enhance security of the global community.

It is anticipated that enhancement of these benefits through research and development will continue well into the 21st century, accompanied by an increase in public confidence and acceptance of nuclear science and technology.

The Canadian Nuclear Society (CNS) will host its 38th Annual Conference at the Sheraton Cavalier Saskatoon Hotel in Saskatoon, Saskatchewan, Canada, 2018 June 3-6. This conference provides a forum for communication of new ideas, information exchange of progress and achievements, and a forum to discuss energy-related issues in general. Technical topics of interest are listed on the following page. The CNS 38th Annual Conference will feature:

- Plenary sessions with invited speakers to address such topics as large scale refurbishment projects, options for future new-build, etc.
- Technical sessions with subject-matter experts from utilities, suppliers, the regulator, academia, federal laboratories and agencies to present the latest advancements in nuclear science and technology.
- An embedded topical meeting on Small Modular Reactors (SMR) with focused plenary and technical sessions dealing with the potential of and challenges to licensing and deployment of SMR in Canada.
- Exhibits with industrial leaders showcasing their latest nuclear products and technology.
- A Student Conference with student posters
- Social events (such as opening reception, lunches, conference banquet, wine-&-cheese reception, coffee breaks and conference banquet) that facilitate discussions and networking on subjects of common interests.

The 42nd Annual CNS/CNA Student Conference will be held in parallel at the same venue, which facilitates interaction between experts and the future generation of nuclear scientists, engineers, and specialists. The Student Conference will feature a poster session, at which university students will showcase their latest research findings and advancements. A Call for Students' Extended Abstracts will be issued separately.

Important Dates: Revised!

Abstract submission: **2018 February 14**
Draft paper submission: **2018 February 28**
Full paper submission: **2018 April 1**

Submission Guidelines:

- The abstract should be <150 words in length (technical topics of interest are listed on the following page).
- The full paper should present material that is new and significant or represent a state-of-the-art review, and should include sufficient information for a clear presentation of the topic. The required format of submission is electronic (Word or pdf).
- Templates for abstract and full paper are available from the Conference website
<http://www.cns2018conference.org>
- Submission should be made via:
<http://www.softconf.com/h/CNS2018Technical>
- Notes: At least one of the authors must register for the Conference by the "early" registration date (2018 April 16) for the paper to be included in the Conference Proceedings.

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CALL FOR PAPERS – TECHNICAL TOPICS

<p>New Reactors and Construction Challenges</p>	<p>Establishing new build program; International collaborations; Risk-informed safety regulation; Policy; Regulation and risk assessment; Probabilistic & deterministic risk analysis; Addressing life extension and license renewal; Design and construction; Economics and financing; New - site licensing; New developments and designs; Gen-III+ designs/ Gen IV advanced systems and components; Passive safety</p>
<p>New Technology Research and Development</p>	<p>Advanced reactor physics, radiation physics and health physics; Thermal hydraulics; Fusion; Hydrogen production ; Efficiency enhancements; Space and mining applications; New nuclear codes and standards</p>
<p>Small Modular Reactor Embedded Topical Meeting</p>	<p><i>Canada has emerged as a leading market for SMR development, driven by supportive regulatory regimes, research support and numerous deployment opportunities.</i></p> <p><i>Plenary sessions on deployment opportunities, design, licensing and deployment challenges.</i></p> <p><i>Technical sessions on SMR concepts, their applications in mining, remote locations as well as new-build opportunities and related topics.</i></p>
<p>Operation and Aging Management</p>	<p>Refurbishment and life extension; Economics; Maintenance; Reliability; Quality Assurance / Inspection; operational risk assessment; Outage management; Fuel and equipment performance; New developments; Reliability enhancement; Power uprating; Obsolescence; Component replacement; Supply chain; OPEX</p>
<p>Facilitating Energy Policy and Global Consensus</p>	<p>Policy development; Energy mix; Sustainability; Climate change; Public acceptance; Education; Communications; International and regional cooperation; Safeguards; Proliferation-resistant fuels</p>
<p>Enhancing Safety and Security</p>	<p>Post Fukushima perspectives: Extreme events; Severe accidents; Accident management; Emergency planning; Plant security; Human performance; Safety culture; Stress testing; Shielding analysis; Criticality Safety Analysis; Risk assessment; Probabilistic analysis; Regulatory perspective; Nuclear security and non-proliferation</p>
<p>Environmental Protection and Waste Management</p>	<p>Designing for environmental protection; Assessment of environmental effects; Decommissioning and environmental remediation; Waste stream management and reduction; Progress in repository development; Interim used fuel storage strategies; Waste treatment, packaging and transportation</p>
<p>Fuel Cycles</p>	<p>Uranium and thorium mining, milling, refining, conversion and enrichment; Uranium and Thorium fuel manufacturing; Fault tolerant fuel design; Open and closed fuel cycle</p>
<p>Addressing Public Concerns about Radiation</p>	<p>Experience from Fukushima; Social impacts; Educating & partnering with public; Opinion surveys; Radiation protection; Linear-no-threshold issues; Radiation health effects; Lessons learned; Outreach</p>
<p>Competitive Challenges and Cost Reduction</p>	<p>Design and construction; Manufacturing and modularity; Economics and financing; Supply chain assurance; Outage management; Market and competitive challenges</p>
<p>Medical and Biological Benefits</p>	<p>Medical and biological systems; Treatments and protocols; New isotope manufacture; Novel accelerators and target development; Supply assurance; Handling waste streams; Economics; International trends; Isotope production and use; Agricultural applications</p>