

NPSS Chapter, IEEE Toronto Section

Student Innovation Competition (NPSS-SIC)

NPSS – Toronto is pleased to announce a student innovation competition in the area of nuclear & plasma sciences, under the following technical groups:

Radiation & Health Physics: Coordinator – Dr. Anthony Waker

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This area includes (but not limited to) radiation physics, chemistry and biology; medical applications of radiation in therapy and diagnosis; industrial applications of radiation in material processing, sterilization of food and waste; industrial imaging, gauging and resource exploration and management; radiation dosimetry, radiation protection; detector physics and detector design for radiation monitoring and nuclear science.

Control & Safety Engineering: Coordinator – Dr. Hossam A.Gabbar

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This area includes (but not limited to) reactor control systems, reactor control modeling and simulation, improved instrumentation, communications, operator environment, safety design, shutdown systems, fault diagnosis, emergency & disaster management, troubleshooting, recovery operation, sensors and alarm settings, operator support systems, condition monitoring, distributed sensor network, risk-based radiation monitoring, and reliability and maintainability.

Competition Details:

Undergraduate/Graduate students can work individually or in a group to propose an innovative design or experimental concept that addresses a particular problem or issue in one of the technical areas listed above. Ideas and proposals should be accompanied by a proof of principle through the use of a prototype, model, or simulation. Students should select a technical area that matches their interests and submit their report electronically (via email) to the coordinator of that technical group, not later than 1-Mar-2011. The selection / competition and finalists will be announced during the workshop RTMIC2011 (2-3 Jun-2011). Evaluation will be based on soundness of science and engineering principles, innovation, and potential impact of a given application within nuclear and plasma sciences. The review will be conducted by IEEE NPSS members and invited external experts from academia and industry. The application should be

submitted in PDF format (maximum 4 pages), using a template file that can be obtained from the technical group coordinator. The report should include the following headings:

- Problem definition / Background
- Proposed Solution / Approach
- Case Study / System Design
- Results / Discussions

The competition is supported by NPSS Chapter, IEEE Toronto Section, AMEC-NSS, and associated sponsoring organizations.

