



Symposium on Plasma And Nuclear Systems SPANS-2017

Notice: 18-Aug-2017

Room: UA1120

UOIT – Oshawa, ON, Canada

**Sponsors: IEEE-Toronto, NPSS Chapter, CNS – UOIT Chapter,
CNS – Fusion Science and Technology Division, CAP – Plasma Physics Division, IEEE-Canada**

Chair: Professor Hossam A.Gabbar (UOIT),

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Information and updates, please visit: www.sege-conference.com/SPANS17CFP.pdf

Canadian Nuclear Society, SEGE

Message from SPANS Chair, Dr. Hossam A. Gabbar



Professor in the Faculty of Energy Systems and Nuclear Science, and cross appointed in the Faculty of Engineering and Applied Science, UOIT

UOIT is welcoming all attendees at SPANS. IEEE NPSS (Nuclear and Plasma Sciences Society), Toronto Chapter has been active in organizing workshops in plasma and nuclear systems since its establishment. The recent workshop was on Real Time Measurement, Instrumentation, and Control (RTMIC). This has been extended with the collaboration with CNS-Fusion Science and Technology Division, CAP – Plasma Physics Division to organize SPANS or Symposium on Plasma and Nuclear Systems. This symposium provides a unique opportunity for fruitful discussions and collaboration between industries and academia. In addition it provides great opportunities for students to present their work and have closer discussions with researchers, scientists, and professionals from industries to add great values to their skills and awareness of real industrial projects.

Student Innovation Competition

- The event will include student competition, please submit your abstract and author list to: Hossam.gabbar@uoit.ca by 1-Jul-2017, and complete the registration (at least one author)

TOPICS

- **Plasma Devices and Applications.**
- **Plasma Experiments, Diagnostics and Control.**
- **Plasma Simulation and Modeling.**
- **Nuclear Power Plant Safety Systems.**
- **Nuclear Power Plant Control Systems.**
- **Nuclear Power Plant Monitoring and Measurement Systems.**

Objectives of Symposium

- **This symposium is providing forum for researchers from academia and industry to present and discuss latest research innovations in nuclear and plasma systems.**
- **SPANS will provide attendees with state-of-the-art research and technologies and engage in active discussions with industry. Also it will provide industry with opportunities to promote their products and business cases.**
- **Attendees from regulators and standards will engage in fruitful discussions on how R&D is linked with regulations and standards.**

Bio - HASSAN A. HASSAN, Ph. D., P. ENG, PMP, Ontario Power Generation, IRI Projects

Dr. Hassan is currently working with the Innovation group, Inspection and Candu Innovation Projects, Ontario Power Generation. The Innovation group participates in different reactor inspection and maintenance projects such as Drone Inspection, Intelligent FME, Single Fuel Channel Replacement (SFCR), C/T replacement, BR projects, etc. Dr. Hassan was assigned to the role of helping the group to introducing new technologies which may result in better performance, reduced radiation and/or cost and enhance performance.

Dr. Hassan received his Ph.D. at 1990 in Industrial Automation. He was then selected to work as an assistant professor of industrial automation and robotic. Dr. Hassan worked as a head of the Robot Research Lab and he has several published researches.

At 1996, Dr. Hassan selected to switch from the academic career to the field of consultancy. He worked in several positions as an Engineering Consultant, until 2006, when he selected to join the nuclear industry, where his industrial and academic experience may be helpful.

Over his academic and industrial career, he has been active in various capacities with several professional organizations, including the Academy of Scientific Research, IEEE, The Canadian Society of Mechanical Engineers, The National Research Center, The Project Management Institute, and the Professional Engineers of Ontario.

Dr. Hassan had his M. Sc. Degree in Material Science (Composite Material) at 1986 and he graduated as a mechanical engineer at 1981. He can be reached at Tel. # (905) 428- 4000 ex. 6017, Or via email at: Hassan.hassan@opg.com

Bio – Dr. Mahmoud Kattan, SNC Lavalin

Graduated from Queen's University with a PhD in Chemical Engineering. Graduate studies was focused on design of controllable chemical plants. Worked in the nuclear, since then, within the area of control and instrumentation dealing with the design of special system and normal operation control systems. During this period, I participated in the design of various CANDU plants such as Wolsong, Pickering A return to service and Romania where I spent 5 years at site. Over the past year, I led the team to prepare SNC Lavalin engineering and procurement scope for the Atucha CANDU 6 project being planned for construction in Argentina. Assumed various technical management roles since the late 1990's and presently the Director of the nuclear steam plant electrical, control, instrumentation and Computers engineering.

Talk Summary: Dr. Mahmoud Kattan

This presentation explains the systematic process for the development of nuclear control systems designs. This process is typical for complex multidiscipline engineering projects. The three phases that engineering adopts, conceptual, preliminary and detailed, are explained. Two of the critical processes (Configuration control and Design Verification) required to ensure the quality of the final design are addressed as well.

SPANS 2017 - Agenda, UA1120

- 08:30 – 09:00** Registration, Coffee
- 09:00 – 09:10** Opening Message, Dr. Hossam A.Gabbar, SPANS Chair, IEEE Toronto NPSS Chapter Chair
- 09:10 – 10:00** Systems Engineering Process for Control System Designs, Dr. Mahmoud Kattan, SNCLavalin
- 10:00 – 10:20** Break
- 10:20 – 11:10** Systems Intelligent Innovations, Dr. Hassan A. Hassan, OPG
- 11:10 – 12:00** Current status of electricity generation in the world and future developments in nuclear power industry, Dr. Igor Pioro, Professor, UOIT
- 12:00 – 13:00** Lunch
- 13:00 – 14:00** Instruments and Methods for Nuclear Safety Systems, Dr. Anthony Waker, Professor, UOIT
- 14:00 – 14:20** Advances in Safety and Control Systems for Plasma and Nuclear Applications, Dr. Hossam A.Gabbar, Professor, UOIT
- 14:20 – 14:35** Experimental RF Plasma Generation using PAG Technology, Daniel Bondarenko, APEL, UOIT
- 14:35 – 14:50** Study on RF Plasma Generation using PAG Technology, Sameh Hegazy, APEL, UOIT
- 14:50 – 15:10** Break
- 15:10 – 15:25** NDE Drone Performance Improvement - Battery Performance and Time Endurance Enhancements, Mohamed Mohamed EI-Hendawi, ESCL, UOIT
- 15:25 – 15:40** Intelligent Tools For Inventory Management In NPP Using Radio Frequency Identification, Manir Isham, ESCL, UOIT
- 15:40 – 15:55** Thermal Plasma in Catalytic and Non-Catalytic Thermoplastic Pyrolysis, Mohamed Aboughaly, APEL, UOIT
- 15:55 – 16:10** Integrated Gasification Process Systems, Stefano Russo, APEL, UOIT (Politecnico Di Torino)
- 16:10 – 16:20** Closing

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Call for Papers

Please send abstracts for papers to: hossam.gaber@uoit.ca

Presentations are organized by subtopics of this symposium

Abstract Deadline

1-July, 2017

SPANS-2017

Registration Fees: \$50

(Discount fee of \$30 for students, IEEE, CNS, and CAP Members)

Space is Limited (60 to 100 max)

(please send registration information to: hossam.gaber@uoit.ca)

Registration

For Registration:

www.sege-conference.com/SPANS.html

Public Transportation

- From Toronto:
GO Train from Union Station to Ajax GO Station,
Durham Transit Bus (No. 915 East) from Ajax Station
direct to UOIT Campus.

Train and Bus schedules are available at:

[GO Schedule](#)

[Durham Transit](#)

Select schedules from Toronto to Oshawa and vice versa. Choose "Lakeshore East" from the pull down menu.

Public Transportation

- From Airport:
You can use public transportation to move from airport to reach UOIT: [See Details](#)