



**Ottawa
Section**



Seminar organized by Joint IEEE Ottawa-Montreal Section DEIS Chapter,
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The IEEE Ottawa Section is inviting all interested IEEE members and other engineers, technologists, and students to a seminar on dielectrics and electrical insulation.

ATMOSPHERIC ICING OF POWER NETWORKS: STATE OF OUR KNOWLEDGE, PROTECTION METHODS AND FUTURE CHALLENGES

by

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DATE: Monday, December 12, 2011

TIME: 10:40 a.m. Registration and Networking; 11:00 a.m. – 12:00 p.m. Seminar.

PLACE: National Research Council, Building M-50, Room 115, 1200 Montreal Road, Ottawa, ON, Canada.

PARKING: No fee at the visitor's parking. Please respect restricted areas. Map: to view the map, click [here](#).

Abstract In many parts of the world, overhead power lines and outdoor substations are affected by atmospheric icing, sometimes causing serious failures and damage with major socioeconomic consequences. The disruptive effects of atmospheric icing are mainly the result of the excessive accumulation of ice or snow, and the subsequent jumping of cables and conductors following sudden ice shedding. Other potential sources of failure are dynamic phenomena such as galloping and bundle rolling or electrical faults like flashovers across insulators or between phase conductors and the ground or ground wires.

Major icing events in the last decades sparked sustained and substantial research as well as development projects in several countries, many in collaboration with academia and industry. Above all, this resulted in considerable advancement of knowledge in many areas of atmospheric icing, bringing innovation and improvement to overhead power network design, construction and operation. However, in spite of the progress made, the knowledge base on this complex and unpredictable phenomenon is still lacking. Furthermore, continuous increase in energy consumption and the need for upgrading existing networks, and constructing more reliable transmission lines, call for innovative solutions to icing issues.

This presentation is an overview of the state of our knowledge on atmospheric icing of power networks, including the main phenomena involved, methods for securing these networks, and future challenges.

Professor Masoud Farzaneh is Director-Founder of the International Research Center on Atmospheric Icing and Power Network Engineering (CENGIVRE), as well as Chairholder of the CIGELE NSERC/Hydro-Quebec Industrial Research Chair and of the INGIVRE Canada Research Chair, Tier 1, on Engineering of Power Network Atmospheric Icing at Université du Québec à Chicoutimi (UQAC). His research is in the field of power engineering, including atmospheric icing of power network equipment, outdoor insulation and physics of discharge. He authored or co-authored some 900 publications including 500 technical papers, and 18 books or book chapters. Throughout his career, he has so far trained more than 200 highly qualified persons including 40 Ph.D. and 44 M.Sc. students, and 29 postdoctoral fellows. Active in IEEE and CIGRE for many years, Dr Farzaneh is IEEE DEIS Technical Vice-President, Chairman of the IEEE DEIS Outdoor Insulation Committee and member of the editorial board of IEEE Transactions on Dielectrics and Electrical Insulation. He has also been Convenor of CIGRE WG B2.29 and WG B2.44 as well as member of CIGRE Canada Executive Committee. Professor Farzaneh is a member of a number of learned societies. He is Fellow of IEEE, Fellow of The Institution of Engineering and Technology (IET) and Fellow of the Engineering Institute of Canada (EIC). His contributions and achievements in research and teaching have been recognized by the attribution of a number of prestigious prizes and awards at national and international levels.

Admission: Free. Registration required for security reasons,

To ensure a seat, please register by e-mail contacting: Mahmoud.Abou-Dakka@nrc.ca