IEEE
NORTHERN CANADA SECTION

August 2016
NEWSLETTER

IEEE Canada
Northern Canada Section

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Teacher in Service Program	Mooney Sherman, Rossitza Marinova, Amar Bollywar
Women in Engineering	Adefeyike Odutayo, Wei Shi, Sahar Pirooz Azad
Young Professionals	Ali Karaja
IEEE Canadian Foundation Liaison	Pankaj Sharma
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ABOUT US

We aim to promote the vision of the IEEE within the membership in our region through sharing of ideas, attendance at conferences and workshops, and ethical practice. The section supports Chapters, special interest groups, student activities and student awards.

MISSION STATEMENT

Our mission as the IEEE Northern Canada Section is to assist and improve the electrical, electronic, computer and information technology industries; in Northern Canada, as well as in Canada and the rest of the world by:

1. Providing practical liaisons between academia and the technical workforce, and

2. Advancing the professional standing of our members and their industry.

In addition, in conjunction with IEEE's grassroots mission, we strive to enhance the quality of life for everyone through improved public awareness of the influences and application of the world's technologies.

IEEE-NCS

Thursday, October 22th, 2015, 5:00 to 7:30pm

Career & Professional Networking Event

A Human Resources Professional provided a brief discussion on a topic relevant to Career & Professional Development in the workplace at Metterra Hotel.

IEEE-NCS, AP/MTT Jt.

Tuesday, October 27th, 2015, 3:00 pm

Magnetic Resonance and Radio Waves or Scepticism in the Highest of Duties

The IEEE Northern Canada Section Antennas & Propagation Society and the Microwave Theory & Techniques Society joint chapter, along with the Department of Oncology (Medical Physics division), had a technical seminar on MRI RF technology. The talk was dealt briefly with the science, psychology and insights to be gained from a rather bruising encounter with entrenched thinking and excessive specialization.

Speaker:

David Hoult received his degrees from Oxford University and has worked there and at the National Institutes of Health, the University of Utrecht and the National Research Council of Canada – always in the field of nuclear magnetic resonance (NMR) spectroscopy and imaging (MRI). He is the recipient of numerous awards, including the Gold Medal of the International Society of Magnetic Resonance in Medicine, of which he is a founding member.

IEEE-NCS, IAS/PES

Tuesday, November 17th, 2015, 6:10 to 9:00pm

Practices of Distribution Insulation Coordination

Topics:

- Overview of Presentation
- The Origin and Shapes of Distribution System Surges
- Where Surges Matter and What They Do
- Insulation Systems and How They Go Bad
- History and Application of Distribution Surge Arresters (Over-Voltage Protection)
- Reality Check

Speaker:

Thomas C Hartman has been with ATCO for three years leading the introduction of new technology such as distribution automation, DMS, advanced system engineering, and telecommunications. His career has spanned more than 38 years in the power system industry. Globally, Tom is recognized for having over thirteen US, Canadian, and international patents. He has served on IEC, IEEE, and ANSI standards committees for the development of international surge arresters standards for which he was awarded the IEEE Standards Medallion.

IEEE-NCS

Thursday, December 17th, 2015, 6:00 pm to 9:00 pm

Christmas dinner

Annual IEEE Northern Canada Section Christmas dinner was hold at the German Canadian Cultural Centre on December 17. This year there were a no-host bar and a plated meal.

IEEE-NCS, IAS/PES

Tuesday, January 26th, 2016, 6:00 to 9:00pm, doors open at 5:30pm

Technical Seminar:

"Hazardous Location Standards for Canada"

Practical applications on area classification were discussed, in particular, typical errors and over classifications that were made and the impact to those facilities. The role of combustible gas detection in area classification was also be included.

Speakers:

Tim Driscoll has been employed at Shell Canada in various positions since graduation. He Currently retired from Shell, and runs a small engineering firm in Calgary, OBIEC Consulting. He has co-authored several papers and is a member of the Association of Professional Engineers and Geoscientists of Alberta. He is a Fellow of the IEEE, and received CSA's Award of Merit in 2015 for work on electrical codes and standards.

Marty Cole has worked for Hubbell Canada over 35 years and been involved with hazardous locations for much of that time. Marty is an IEEE Senior Member, an IAS and IEEE-PCIC Standards committee member, and Chairs the development of the P1673 standard. He is the Canadian Alternate to the IEC Conformity Assessment Board (CAB). He is Chair of the Hazardous Location Products sub-section of Electro Federation Canada's Wiring Products Section. He is a member of IECEx and Convenor or IECEx ExMC WG.

D. George Morlidge is the Chief Electrical Engineer for Fluor Canada Ltd. He has thirty years' experience in operations and consulting engineering in heavy industry in the petroleum, chemical, cogeneration, pipelines, automotive, lumber, mining and food processing sectors. He is a section subcommittee member for sections 2 and 10 and chairman of section 18 of the Canadian Electrical Code. He is a member and past chairman of the Energy Industry Electrical Engineers Association. He is chairman of PCIC 2017 to be held in Calgary.

IEEE NCS AP-S/MTT-S

Wednesday, March 9th, 2016, 3:00 PM to 4:00 PM, NREF 1-003.

First Student Seminar

Topics:

The IEEE Northern Canada Section, Antennas & Propagation Society and the Microwave Theory & Techniques Society (IEEE NCS AP-S/MTT-S) joint chapter hold the first student seminar at university of Alberta. The first presenter, Parinaz Naseri, gave a presentation entitled "Dual-Band Circularly-Polarized Transmit-Array Unit-Cell at X and K Bands", and the second speaker, Hossein Saghlatoon discussed his work in a seminar entitled "RFID: Challenges and Advances".

IEEE IAS ESTMP

Monday to Wednesday, March 14-16, 2016

IEEE IAS ESTMP 2016 Workshop

The IEEE IAS ESTMP Workshop provided a forum for exchanging and advancing industry knowledge in the areas of electrical safety, engineering design, and system reliability as well as the implementation and execution of Mega Projects. The Workshop focus was to share innovative concepts, successes as well as lessons learned in the areas of:

- Advancing the application of state of the art knowledge and best practices,
- Stimulating innovation in creating the next generation of technology and
- Design and implementation of Mega Projects.

IEEE NCS AP-S/MTT-S

Wednesday, March 16th, 2016, 3:00 PM to 4:00 PM, NREF 1-003.

Second Student Seminar

Topics:

The IEEE Northern Canada Section, Antennas & Propagation Society and the Microwave Theory & Techniques Society (IEEE NCS AP-S/MTT-S) joint chapter hold the second student seminar at university of Alberta. The first presenter, Mohammad Mahdi Honari, gave a presentation entitled ""Grooved Antennas On Printed Circuit Boards "", and the second speaker, Stuart Barth discussed a topic entitled "A Uniplanar Metamaterial-Inspired Electromagnetic Bandgap Structure ".

IEEE NCS AP-S/MTT-S

Wednesday, March 23th, 2016, 3:00 PM to 4:00 PM, NREF 1-003.

Student Seminar

Topics:

The IEEE Northern Canada Section, Antennas & Propagation Society and the Microwave Theory & Techniques Society joint chapter hold the second student seminar at university of Alberta. The first presenters, Dennis Ramsawak, Bertie Chen, and Michael Amyotte gave a presentation entitled "Undergraduate Capstone Project", and the second speaker, Mohammad Zarifi discussed a topic entitled "Microwave Planar Resonator Sensors for Nano-scale Phenomena Detection".

IEEE-NCS, IAS/PES

Tuesday, April 5th, 2016, 6:00 to 8:30pm, doors open at 5:30pm

Technical Seminar:

"Designing Electrical Systems for On-Site Power Generation"

Co-sponsored by Cummins Power Generation

Topics:

- Proper generator sizing for motor loads accounting for locked rotor kVA:
  - in "across the line" motor starting applications.
  - in VFD motor starting applications.
- Generator short circuit characteristics and their effects on arc flash incident energy.
- Grounding (system and/or equipment) and ground fault detection of on-site power generation systems:
  - When to switch the neutral in emergency standby systems
  - Grounding and ground fault detection schemes for paralleled generator sets in both grid connected and islanded applications

Speaker:

Rich Scroggins is a Technical Advisor in the Application Engineering group at Cummins Power Generation. Rich has been with Cummins for 18 years in a variety of engineering and product management roles. Rich has led product development and application work with transfer switches, switchgear controls and networking and remote monitoring products and has developed and conducted seminars and sales and service training internationally on several products and is an Active member of IEEE 1547 working group.

IEEE-NCS, IAS/PES

Edmonton on Tuesday, May 31th, 2016, 5:30pm to 9:00pm, doors open at 5:30pm

Technical Seminar:

"Partial Discharge in Electrical Insulation"

Topics:

- What is PD and under what conditions does it occur
- Examples of PD in power cables, transformers, switchgear and stator windings PD measurement as factory acceptance test of equipment
- Off-line PD testing at site
- On-line condition monitoring of power cables, transformers, switchgear and machines.

Speaker:

Dr. Greg Stone was one of the developers of on-line partial discharge test methods to evaluate the condition of the high voltage insulation in stator windings. From 1975 to 1990 he was a Dielectrics Engineer with Ontario Hydro. Since 1990, Dr. Stone has been employed at Iris Power L.P. in Toronto Canada. He is a Past-President of the IEEE Dielectrics and Electrical Insulation Society, and continues to be active on many IEEE standards working groups. He has published two books and more than 200 papers concerned with rotating machine insulation. He has awards from the IEEE, Cigre and IEC for his technical contributions to rotating machine assessment.

IEEE-NCS, COMP/COM JT.

Wednesday, June 1th, 2016, 6:30 pm to 7:30 pm

Edmonton Data Science Meetup #1

Presentations:

- "Data Science at Granify"- Marcin Mizianty
- "A/B testing or: how I learned to stop worrying and love statistics" - Joshua Mitra
- "Resource assignment using clustering" - Koosha Golmohammadi

IEEE-NCS, COMP/COM JT.

Wednesday, July 6th, 2016, 6:30 pm to 7:30 pm

Edmonton Data Science Meetup #2

Presentations:

- “What's said and what's understood: the need of text understanding in analytics" – Denilson Barbosa (Associate Professor, CS @ UofA)
- "Kaggle and Machine Learning Competitions" - Luke Wang (Data Scientist, Granify, in top 50 Kaggle ranking)
- "Problems and Surprising Solutions on some Darkhorse projects" - Eugene Chen (Director, Darkhorse Analytics)

IEEE-NCS, COMP/COM JT.

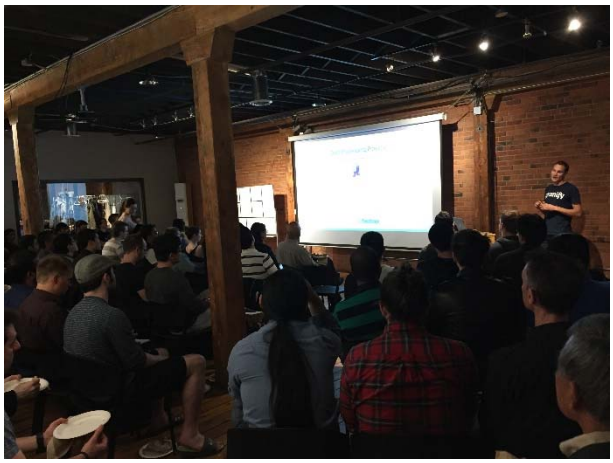
Wednesday, August 3th, 2016, 6:30 pm to 7:30 pm

Edmonton Data Science Meetup #3

Presentations:

- “Predicting Army Combat Outcomes in StarCraft” – Graham Erickson (Data Scientist @ Granify)
- “Topic Analysis on Software Engineering Data” – Abram Hindle (Assistant Professor @ University of Alberta)
- “A Practical Tutorial on Amazon EMR” – Frank Huang (Data Scientist @ Granify)

These events have been very popular and fully booked in the past three months with over 100 attendees per event.



IEEE-NCS

Saturday, August 13th, 2016, 1:30 pm to 5:00 pm

Summer BBQ

Annual IEEE Northern Canada Section Barbeque was hold at Emily Murphy Park site 1 in Edmonton at August 13 from 1:30 to 5 pm. This event was free to IEEE members and their families.

Upcoming Events:

IEEE-NCS, COMP/COM JT.

Wednesday, September 7th, 2016, 6:30 pm to 7:30 pm

Edmonton Data Science Meetup #4

Edmonton Data Science (EDS) meetups are a platform for data science enthusiasts and professionals to:

- learn about big data techniques and tools
- discuss best practices in big data and data science
- promote big data and data science among university students and local tech community learn about practical applications of data science methods
- learn about companies that use data science as the foundation of their business processes

In these meetups we intend to a) share best practices and knowledge of data science-based start-ups and corporations with university students, b) introduce research works on big data and data science to the local tech community. We aim to connect the students to companies and make them more aware of

our vibrant local tech community. We also invite professors and researchers to present their work on data mining and machine learning methods to the professional community.
Each meetup will start with a presentation introducing a company who is using data science techniques, followed by two presentations about big data, data science and machine learning techniques.

IEEE-NCS, IAS/PES Presents

Tuesday, September 27th, 2016, 6:00 to 8:30pm, doors open at 5:30pm

Technical Seminar:

"Getting on Top of High Voltage Grounding"

Topics:

- Introduction
- Basic concepts – Grounding Fundamentals
  o Where is the ground?
  o Types of Grounding
  o Economics and design
- Finding the real problems
- Testing Fundamentals
- Standards and Guides
- From the past to the future of grounding.

Speaker:

Carl Moller is a professional engineer with over 10 years' experience in design, testing, investigation and studies in high voltage grounding. Carl has developed a range of skills in addition to grounding such as protection and control, fault studies, substation design and lightning shielding. Carl has experience implementing high voltage grounding and design related projects in hydro, thermal, mining, SAGD facilities, urban transmission and distribution assets ranging from 600V to 500kV. Recently, Carl has been an active member and contributor on several related IEEE substation committee working groups which produce the following IEEE guides: 80,
81, 837 and 998.

YP Speaker:

To promote IEEE's Affinity Group of Young Professionals (YP) there was an opening presentation from an YP Guest Speaker. This presentation was covered with the following topic by William York:
"Celestial Batteries"

IEEE-NCS, Educational Activities Presents

Friday, October 7th, 2016, 6:00 to 1:00 pm

Guided tour of the University of Alberta's District Energy System

Join fellow members of the IEEE NCS for a guided tour of the U of A District Energy System.

The University of Alberta, located in Edmonton, Alberta, Canada, has one of Canada's largest district energy systems. Come and hear about how utilities services are centralized and how this leads to cost savings and reduced environmental impact. Tour the Heating Plant which generates steam for heating the campus and has two steam turbine generators. Tour the Cooling Plant, where medium voltage chillers produce chilled water for the campus. Tour the underground corridors and see the mini-motorbikes trades staff use. See the 13.8kV switchgear, switches, cables, protective relaying and metering. Learn how the U of A's 13.8 kV power distribution system topology provides a high degree of flexibility and reliability.

IEEE NCS WIE Presents

Thursday, October 13th, 2016, 6:00 PM to 8:00 PM

Industry Mixer

IEEE NCS WIE, UA-WISE and WISER will host the annual Industry Mixer on Thursday, October 13th, 2016 from 6:00 PM to 8:00 PM at the University of Alberta ETLC Solarium 116 St NW, Edmonton, AB T6G 2V4. This event is to bring together undergraduate, graduate, and early-career professionals in science, technology, engineering and mathematics (STEM); for an evening of networking, informal discussions, and exposure to career opportunities in industry, academia and government. Rossitza Marinova, Professor in Mathematics and Computing Science at Concordia University of Edmonton, as our guest speaker, will share inspirational stories about her career path.