



# IEEE Canada

## Northern Canada Section



### IEEE-NCS, IAS/PES Presents

Wednesday, January 21<sup>st</sup>, 2015, 6:00 to 9:00pm, doors open at 5:30pm

## **“Battery and Chargers for Electrical Substation and Process Back-up”**

### Abstract:

When the time comes to select batteries and chargers for an electrical substation or process backup there are many factors that will influence the reliability and the service life of the d.c. system as a whole.

This seminar will cover:

- The evolution of stationary batteries, their chemistry and construction, the various technologies available on the market, their respective advantages, disadvantages and failure modes. We will also examine capacity, sizing and why all Ampere hours are not equal.
- Compare the classic charger model with modern chargers and the various functionalities that have been developed over the last 10 or 15 years.
- Factors that will influence the design of the dc system, including system architecture, component and battery selection.

For more details for the event or registration questions or concerns please contact Alex Nassif [alexandre.nassif@atcoelectric.com](mailto:alexandre.nassif@atcoelectric.com).



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### Biography:



Yves A. Lavoie , IEEE Member

After studying at Ottawa University in Marketing and Communications in the early 80's Yves joined Varta Batteries Inc. Trained in battery manufacturing, he moved to sales and service of traction batteries. After 2 years he was given responsibility for stationary batteries in Eastern Canada. Later he worked for two other battery companies and finally joined Primax Technologies as Sales Manager in October 2001.

As an active member of the IEEE Stationary Battery Committee, Yves is involved with the review of:

- IEEE 1189 Standard on Stationary Battery Selection.
- IEEE 946 Recommended Practice for the Design of DC Auxiliary Power Systems.

Along with other members of the battery charger industry, Yves is also active on a newly opened PAR: P2405 - Standard for the Design of Battery Chargers Used in Stationary Applications. This new Charger Standard is meant to supplement the outdated NEMA PE-5.

Yves has been married for 35 years and is the proud grandfather of 3 girls and 2 boys. His hobbies include: music, the design and construction of Hi Fi speakers and gourmet cooking



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### *YP Speaker:*

To promote IEEE's Affinity Group of Young Professionals (YP) we will have a 15 minute opening presentation from an YP Guest Speaker on Harmonic Mitigation. This presentation will follow up on the successful presentation delivered in November 2014 by Prof. Halpin.

### **A Technique to Mitigate Zero-Sequence Harmonics in Power Distribution Systems**

This presentation presents a technique to mitigate zero-sequence harmonics in power distribution systems. The method is based on the concept of passive zero-sequence harmonic filters. However, its basic configuration has been expanded to create a double-tuned filtering feature. This feature makes it possible to trap two harmonics with one filter. Common utility service transformers can be used to construct the filter. As a result, it constitutes a practical and low-cost solution to mitigating zero-sequence harmonics. A method for sizing and loading assessment of filters will also be presented. As an example application, the proposed filter package has been applied to mitigate a telephone interference problem. Issues, such as filter location, the number of filters required, and the effectiveness of filtering harmonics produced by distributed residential loads will be investigated. The results show that the proposed filter is a very promising technique to reduce zero-sequence harmonics in primary power distribution systems.

### **Bio**

Pooya Bagheri received the B.Sc. degree in electrical engineering from Sharif University of Technology, Tehran, Iran, in 2010 and the M.Sc. degree in electrical engineering from the University of Alberta, Edmonton, AB, Canada, in 2013. Currently, he is with the Electrical Engineering Department, Oil & Gas segment, Stantec Consulting Ltd., Edmonton, AB, Canada. His research interests are power quality and power distribution systems



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### **Agenda:**

At the Door Registration, Cash Bar Social with Appetizers:	5:30pm
YP Speaker Presentation with Q&A:	6:00 – 6:25pm
Main Speaker Presentation with Q&A:	6:30 – 9:00pm

### **Online Registration (December 16<sup>th</sup> – January 14<sup>th</sup>)**

<https://meetings.vtools.ieee.org/m/30945>

### **Registration**

IEEE Members: \$20  
Non-IEEE members: \$30  
IEEE Student Members: \$10  
Non-IEEE Student: \$12.50  
IEEE Life Members: Free

### **At the Door Registration** - (Payable by cash or cheque)

IEEE Members: \$25  
Non-IEEE members: \$35  
IEEE Student Members: \$15  
Non-IEEE Student: \$17.50  
IEEE Life Members: Free

Please have your **IEEE membership card** ready to obtain the discount.

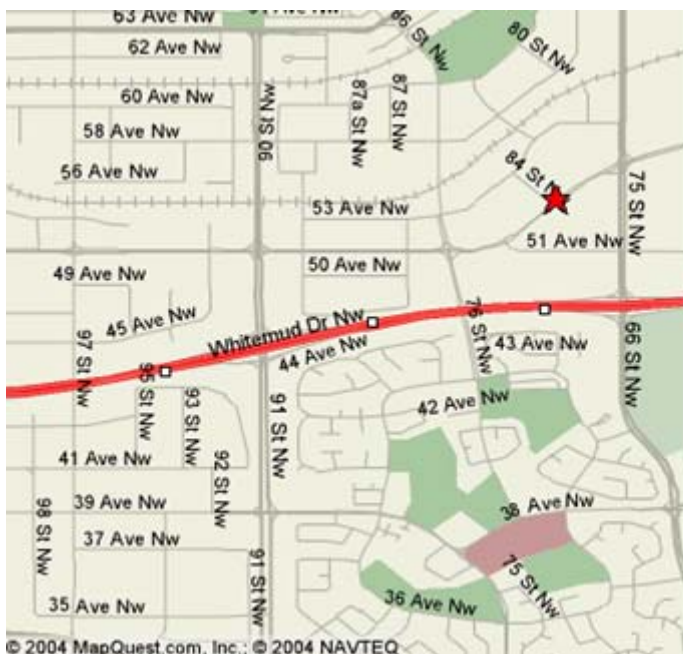


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**Location:**

German Canadian Cultural Centre  
8310 Roper Road, Edmonton



**Contact:**

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