IEEE VANCOUVER CONTACT

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Randy Reimann
BC Hydro

Wednesday 08 October
5:00 pm

Room 418
Macleod Building
2356 Main Mall
UBC Point Grey Campus

Information
Paul Lusina, Chair
Management Council
paul.lusina@gmail.com

British Columbia electric power industry: historical context and current outlook

Mr. Reimann will discuss the policy and business context for the electric power industry in BC by way of a historical perspective and moving to the importance of climate change in the current industry. This will include a brief overview of how the current electric power industry structure was established, past considerations of market reform and independent transmission access, issues with reformed markets. The discussion will then focus on BC's Clean Energy Act and the impact on BC Hydro's resource plans. Mr. Reimann will conclude with future issues that are expected to face utilities.

Speaker: Randy Reimann, P.Eng. Randy has been leading the development of BC Hydro's long term energy plans since 2005. His role includes providing expert advice to management on energy planning issues as well as developing the Integrated Resource Plan including the 2013 Integrated Resource Plan, the 2008 Long Term Acquisition Plan and the 2006 Integrated Electricity Plan and Long Term Acquisition Plan. Prior to 2005, Randy had a number of roles within BC Hydro including playing a key role in the development of the BC Transmission Corporation, leading BC Hydro's interests in the development of the first Open Access Transmission Tariff, and acting as a sector manager in the Key Accounts group. Prior to joining BC Hydro, Randy worked as a consulting engineer and with ATCO Power in Alberta. Randy is a Professional Engineer with an MBA from the University of Alberta and a degree in Electrical Engineering from the University of British Columbia. Randy is a member of the Association of Professional Engineers and Geoscientists of B.C.

Michel Ruel
Top Control Inc

When do you need advanced control? How to select the best approach?

This presentation describes how to make advanced control choices when difficult processes need improvement. How does one determine the best approach? The decision-making process involves choosing between a rules-based approach and a model-based approach as well as weighing benefits and drawbacks, complexity and simplicity, investment and results. This paper will present briefly each solution and define terminology for the most common solutions: basic control (single-loop control), advanced regulatory control, model predictive control, and expert systems such as fuzzy logic controllers and neural networks. The article then proposes a decision tree for selecting the most appropriate approach. The decision tree includes a list of questions, a series of tests to validate models, and a series of questions for interviewing operators. Potential solutions and approaches will be organized in a simple schematic by hierarchy. Examples for each solution will be presented and discussed. A table will compare usage, development, commissioning, maintenance and lifecycle costs for each approach. Finally, conclusions and suggestions will summarize the methodology.

Speaker: Mr. Ruel, Process Control Engineer, has over 35 years of experience as consultant and training instructor. He is also the author of many books and publications as well as software designer with regard to instrumentation and process control. He also taught in several colleges and universities. Mr. Ruel is the founding President of Top Control Inc. He worked in numerous countries and is a regular lecturer for several associations. His career began in a paper mill at Paper Crabtree QC. Mr. Ruel developed an extensive expertise in process control and control performance monitoring. With his team, he worked in applying unique and efficient control strategies in several sectors such as pulp and paper, mining and metals, aeronautics, energy, and petrochemical.

Wednesday 01 October
4:00pm - 5:00pm

BCIT Burnaby Campus
Room SW1-1025

Sponsored by IEEE Industry Applications and Joint Control Systems, Robotics and Automation, and Systems, Man, and Cybernetics Societies

Information
CS/RA/SMC
Joint chapter Chair
Ryozo Nagamune
nagamune@mech.ubc.ca

IEEE Industry Applications Society

1951-2011
60th anniversary

IEEE Sections Congress 2014 top three recommendations

After considering over 100 recommendations delegates voted for the following top three:

1 - Include free access to IEEE Digital Library as a member benefit.
2 - Recognize companies that support employee IEEE membership dues.
3 - Recognize membership loyalty with rewards such as publication access, conference fees, standards.

For more on the recommendations: http://www.ieee.org/societies_communities/geo_activities/sections_congress/2014/sc2014_recommendations.html
For more on Sections Congress 2014: http://www.ieee.org/societies_communities/geo_activities/

Damaging over-voltages from unbalanced open phase condition on the healthy line

Mukesh Nagpal
BC Hydro

Wednesday 29 October
Noon - 1:00 PM

BC Hydro
Edmonds A01
Skytrain Room Auditorium

Shunt reactors are applied to long extra high voltage transmission lines to compensate for their natural capacitance which otherwise could cause over-voltages under light load conditions. However, when the level of compensation approaches around 65% or higher, these reactors themselves can, due to contingency, become the cause of hazardous over-voltages during unbalanced open-phase conditions on the healthy line.

This presentation reports in detail on an overvoltage disturbance from unbalanced open conditions within BC Hydro system. The disturbance was triggered by unintended tripping of a long 500 kV and highly (72%) shunt compensated line under load. In this presentation, the relay and high-speed digital disturbance records will be used to recreate the sequence of events from the initiation of the incident to the eventual line isolation by breaker failure protection after 6.85 seconds. Analyses of the waveforms will be presented to explain equipment failures during this incident. The over-voltages observed are explained using simplified steady-state analysis and validated by transient simulation studies. Results of the study will be presented. Finally, the mitigation methods to avoid damaging over-voltage under similar conditions in the future will be discussed.

Speaker: Mukesh Nagpal received the Ph.D. and M.Sc. degrees in electrical engineering from the University of Saskatchewan, Canada in 1990 and 1986, respectively. Dr. Nagpal is a member of IEEE-Power System Relaying Committee, Chair of an IEEE Working Group on Protective Relaying of Utility-Consumer Interconnections, a senior member of IEEE and a Power & Energy Society (PES) distinguish lecturer.

He is recently appointed as adjunct professor at University of British Columbia and registered member of Association of Professional Engineers and Geoscientists of British Columbia (BC), Canada. Currently, he is a Principal Engineer/Manager with the Protection and Control Planning Group within BC Hydro Engineering. He has 28 years of experience in electrical consulting, utility research and power system protection.

Dr. Nagpal has written about 40 technical papers on power system relaying or related topics. He is recipient of BC Hydro Awards: 2007 Mentorship Award, 2012 and 2013 Innovation Awards and 2013 Safety Award. His presentation received "Best-of-Show" award at BC Hydro's 2007 P&C Telecom Annual Technical Conference.

Information
Joint Power & Energy Chair
Rama Vinnakota
Rama.Vinnakota@bchydro.com

IEEE PES Power & Energy Society®

PES

Martin Huang
BC Hydro

Thursday 25 September
12:00 Noon - 1:00 PM

BC Hydro: Edmonds A01
Skytrain Room Auditorium

Information
Joint Power & Energy Chair
Rama Vinnakota
Rama.Vinnakota@bchydro.com

Challenges in maintaining bulk electric system reliability in the changing industry

The power industry in North America is undergoing fundamental changes. Environmental regulations, development of intermittent resources, fuel prices and new technologies change not only how the bulk electric system is planned, but how equipment and resources are operated, controlled and dispatched. The presentation will highlight some of these changes and discuss the challenges ahead of us in maintaining the level of reliability for the bulk electric system.

Speaker: Martin Huang, Executive Director for Inter-Utility Operations, is responsible for inter-utility affairs, the operations of the wholesale transmission market under BC Hydro's Open Access Transmission Tariff, and reliability compliance for BC Hydro.

Martin has more than 25 years of experience in power system operations and planning with positions such as System Transmission Planning Engineer, Manager of System Control Center, Manager of Real Time Operations and Vice President, Grid Operations.

Martin represents BC Hydro at various external industry forums such as the Western Electricity Coordinating Council and the North American Electric Reliability Corporation.

Martin received his M. Eng degree and BASc degree in electrical engineering from the University of British Columbia and is a licensed engineer in the Province of British Columbia.

IEEE PES Power & Energy Society®

PES DEIS

Life Members address WIE and Young Professionals

The Vancouver chapters of IEEE Life Member, Women in Engineering and Young Professionals (formerly GOLD - Graduates of the Last Decade) affinity groups are planning to host a joint event that will feature life members sharing their experiences, the challenges they faced, the lessons they learned, and provide some practical advice. Life members interested in participating as speakers to the event are encouraged to contact Abhijit Sen at abhijit.sen@kpu.ca.

EMC testing: troubleshooting techniques

Wednesday 12 November
6:00 to 7:30PM

Alpha Technologies Ltd.
Training Lab B
7700 Riverfront Gate,
Burnaby, BC

Sponsor by
Alpha Technologies Ltd
QAI Laboratories
IEEE EMC, Aerospace
and PSES joint chapter

Finger food and drinks
will be provided

Registration is free
contact
peter.lim@alpha.ca

The need to quickly satisfy today's Electromagnetic Compatibility requirements during product development poses a severe challenge to engineering teams that are forced to do everything faster and more effectively with ever-diminishing manpower and financial resources. In today's environment, the traditional and seemingly endless rounds of testing and failing, trying a "fix", re-testing and failing again is a recipe for business failure.The aim of this presentation is to provide engineers and system designers with a set of practical diagnostic approaches, troubleshooting techniques (both old and new), and cost-effective solutions for the most common types of EMC problems, so that compliance with EMC requirements can be quickly and cost effectively achieved. Armed with this information, you will never need to say "Oh No! It just Failed Radiated and Conducted Emissions AGAIN!!!'

This hour-long presentation will review:

- How to use preliminary scans to find solutions to radiated and conducted emissions failures at both low and high frequencies
- In-house techniques you can use to measure both Common Mode Noise emissions and Differential Mode Noise emissions from your product, and what those measurements will tell you
- Simple, relatively low cost tools that you can buy or construct yourself that can be used to make both Common and Differential Mode Noise measurements (including Near-field "sniffer" Probes, Currents Clamps, LISNs, Differential Mode Rejection Networks (DMRNs), and Ferrite Beads)
- Where, when and how to use Ferrites Beads and Toroid's, Decoupling Capacitors, Two-terminal and Three-terminal Bypass Capacitors, Inductors and Resistors to maximize their useful effects on your product's emission levels
- Techniques that work - and techniques that don't work - for solving EMC problems.The presentation will conclude with a question and answer session.

Speaker: Parminder Singh, EMC Division Manager. Parminder holds a Bachelor of Technology in Electronics, Dip T – Robotics and Dip T – Telecom. Parminder has specialized in EMC compliance testing since 2001. Parminder worked in the engineering department of Unity Wireless and at VSM MedTech on the Magnetoencephalography (MEG) system, a medical imaging system used to measure the magnetic fields produced by electrical activity in the brain. Parminder also worked as an EMC Test Engineer at National Technical Systems in Calgary, as well as at other EMC labs.

Information
Joint Aerospace and
Electromagnetics
peter.lim@alpha.ca

IEEE Joint Aerospace and Electromagnetics Chapter

Peyman Servati
UBC

Wednesday 22 October
2:30PM

Room 9896
Applied Sciences Building
Simon Fraser University

Light refreshments
will be provided

Information
Electron Devices Chair
Bonnie Gray
bgray@sfu.ca

24Sep14

Nanofibrous assemblies for solar energy and wearable electronics

Natural systems, like muscular and nervous systems, are comprised of three-dimensional, complex assemblies of various functional fibers. This talk presents applications of nature-inspired synthetic nanofibers in wearable electronics, solar cells and sensors. Continuous electrospinning of low cost nanofibers with a variety of compositional and morphological properties allows high level of scalability for roll-to-roll manufacturing on a variety of substrates. Sparse and transparent meshes of conductive nanofibers are presented as candidates for replacement of rigid and brittle indium tin oxide (ITO) and fabrication of solar cells on flexible plastic and fabric substrates. Highly sensitive nanofiber based strain and pressure sensors are presented with gauge factors in excess of 50 for design and implementation of wearable health monitoring systems and tactile systems. The nanofibrous sensing textiles are used for monitoring of musculoskeletal movements, pulse and breathing patterns, and neurological disorder such as Parkinson's tremors.

Speaker: Peyman Servati received his PhD in flexible transistors and electronics from the University of Waterloo, Canada in 2004. He is an Associate Professor with the Department of Electrical and Computer Engineering of the University of British Columbia (UBC), Vancouver, Canada, and director of Flexible Electronics and Energy Laboratory (FEEL). His research interests include electronic textile, flexible solar cells and batteries, nanofibers, and wearable electronics for health monitoring.

He was a research associate at the University of Cambridge, UK (2005-2006), working on synthesis and printing of nanowires and nanotubes, and was involved in successful spin-off of Ignis Innovation Inc. (2004-2005), a leader in novel active matrix organic light-emitting diode (AMOLED) displays. His was the winner of 2005 Doctoral Prize from the Natural Sciences and Engineering Research Council (NSERC) of Canada and Bronze Medal in the XXV International Physics Olympiad, China, 1994.

IEEE Electron Devices Society

Wen-mei Hwu
Univ of Illinois Urbana

Monday 06 October
4:00 p.m.

Kaiser 2020/2030
2332 Main Mall
UBC

Refreshments available
from 3:30 p.m.

Information
Joint Computer
Society Chair
Stephen Makonin
smakonin@IEEE.ORG

26Sep14

Moving towards exascale with lessons learned from GPU computing

The rise of GPU computing has significantly boosted the pace of progress in numeric methods, algorithm design, and programming techniques for developing scalable applications. Much has been learned about of algorithms, languages, compilers and hardware architecture in this movement. I will discuss some insights gained and a vision for moving applications into exascale computing.

Speaker: Wen-mei W. Hwu is a Professor and holds the Sanders-AMD Endowed Chair in the Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign. He is also CTO of MulticoreWare Inc., chief scientist of UIUC Parallel Computing Institute and director of the IMPACT research group (www.crhc.uiuc.edu/Impact). He directs the UIUC CUDA Center of Excellence and serves as one of the principal investigators of the $208M NSF Blue Waters Petascale computer project. For his contributions, he received the ACM SigArch Maurice Wilkes Award, the ACM Grace Murray Hopper Award, the ISCA Influential Paper Award, and the Distinguished Alumni Award in Computer Science of the University of California, Berkeley. He is a fellow of IEEE and ACM. Dr. Hwu received his Ph.D. degree in Computer Science from the University of California, Berkeley.
http://impact.crhc.illinois.edu/People/Hwu/hwu.aspx

IEEE computer society

IEEE Computational Intelligence Society

IEEE Milestone plaque unveiled at MDA 09 September 2014

On September 9th was held the milestone ceremony at the MDA (MacDonald, Dettwiler and Associates) offices in Richmond, BC. There was very good attendance: high level IEEE Canada and Global executive members; executives from the Canadian Space Agency and MDA; the local Member of the Legislative Assembly and a deputy minister; along with distinguished engineers on the original MDA design teams. The ceremony was masterfully organized by Prof. Dave Michelson from UBC.

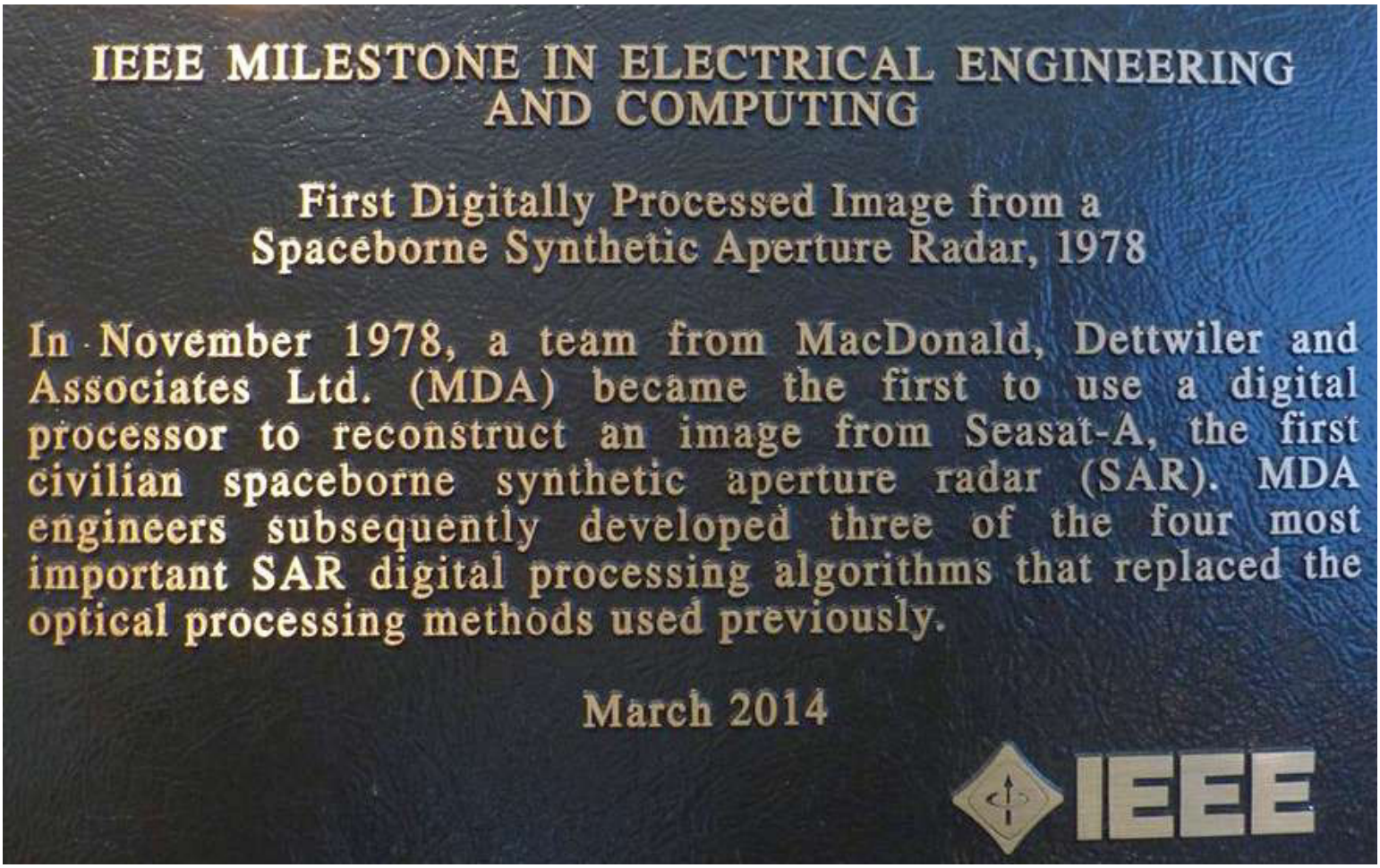
There were many worthwhile speeches. In one of them, it was pointed out that Canada punches above its per capita weight in terms of IEEE Milestones received, and that Vancouver is at the top of the Canadian charts, an observation that drew a good round of applause from the attendees.

These presentations led to one of the highlights of the ceremony, the speech by Mr. MacDonald himself. The MDA co-founder regaled the audience with his many anecdotes and stories going back forty years, covering the evolution of the technology, the people, the politics both internal and geopolitical, the products, the business cases, and more.

The plaque was then unveiled in presence of many of the original team members who contributed to the achievement of the first such SAR Image in 1978.

Several members of the Executive Committee of the IEEE Vancouver Section were delighted to attend as well. We should all be very proud of the accomplishments of these outstanding engineers in our community who have had brilliant careers and who are outstanding role models for our younger engineers.

John MacDonald



IEEE Vancouver Kinect and Structure Sensor Hackathon

IEEE Vancouver Joint Computing Chapter and the BCIT School of Computing and Academic Studies are excited to announce that Microsoft and Occipital are co-sponsoring a hackathon in Vancouver on November 8th!

This workshop gives students, faculty, and other attendees full access to experts from both Occipital and the Microsoft Kinect team and enables them to focus on creating something using the Kinect for Windows v2, Structure Sensor, or both! Come hack a project together over a 28-hour period and work solo or in teams (max five people per team).

You are encouraged to bring your own computer or mobile device*, but there will be plenty of Surface Pros, Kinect for Windows v2 sensors, and Structure Sensors for teams to borrow and use at the event.

This event will be held at BCIT. We are still working out the details on start time and agenda but plan for the event to be all day on Saturday, November 8th and wrap up in the afternoon on Sunday, November 9th.

All information will be made available on the registration website before registration opens.

Registration opens October 15th at 8:00am sharp. Space is limited to the first 100 people who register. There will be a $20 registration fee to cover the cost of food. Students may register for $10 (must present current student ID).

Register at https://meetings.vtools.ieee.org/m/27203

Hosts

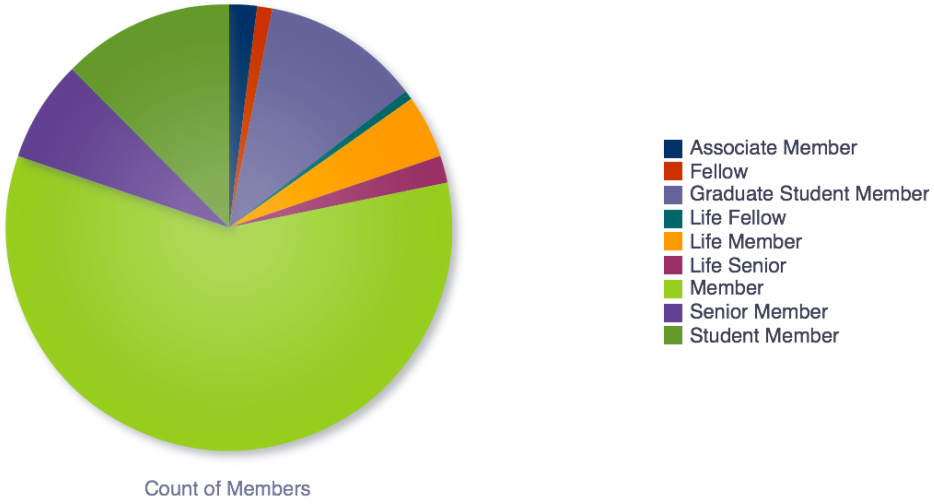
Sponsors

*Running the Kinect for Windows v2 SDK requires Windows 8/8.1, an i5 or better processor, a DirectX 11 capable GPU, and USB 3.0. The Structure SDK is iOS only and requires Xcode 5 and a compatible iOS device (A5X or better processor and Lightning port). Developing with the Structure Sensor is also possible on Windows, Android, Linux or OSX using OpenNI2.

Years: **2007 to 2014** **Yearly Total Members Summary (incl. Net Changes) Report**

(Note: The current year show totals as of the current month)

Year	Totals for Memberships by Grade												Year End Section		New Members
	StM		GSM		AM		M		SM		F		Total	Net	
2007	195		171		95		1326		139		29		**1955**		
2008	196	1	192	21	91	-4	1388	62	152	13	29		**2048**	93	
2009	262	66	253	61	74	-17	1419	31	158	6	31	2	**2197**	149	
2010	223	-39	252	-1	78	4	1434	15	164	6	31		**2182**	-15	
2011	212	-11	255	3	65	-13	1373	-61	165	1	29	-2	**2099**	-83	
2012	293	81	256	1	56	-9	1358	-15	175	10	31	2	**2169**	70	**310**
2013	302	9	222	-34	39	-17	1416	58	173	-2	31		**2183**	14	**269**
2014	185	-117	167	-55	42	3	1335	-81	176	3	32	1	**1937**	-246	**179**



INTELEC 2014 - *Resilient communications energy for our connected world*

The 36th annual conference to be held, from September 28 - October 2, at the Vancouver Convention Center in Vancouver. This year's keynote address entitled "Time for Reflection: Telecommunications and Electric Power Resilience" will be given by Alex Tang, a leading consultant on earthquake engineering of lifelines, such as telecommunications and electric power. In addition, daily plenary sessions from industry leaders Victor Goncalves, P.Eng, FEC (Chief Technology Officer Alpha Technologies LTD), Dr. Ewart Blackmore (Senior Research Scientist, TRIUMF), and Power Electronics legend Bruce Carsten (President, Bruce Carsten Associates) will provide their insights and industry perspectives on hot topics for the entire audience The technical program using oral presentations, poster sessions, workshops and daily plenary presentations will cover all of today's compelling topics such as:

- Resilient Power Systems
- Architectures for energy storage
- High efficiency and high density power supplies
- Remote line power
- Renewable energy generation
- DC/DC topology
- Islanded and grid-connected autonomous power systems
- Cooling techniques
- Power systems for commercial offices and data centersBattery technologies
- AC/DC converters
- 400V DC architecture
- Techniques and strategies for energy management
- Physical and thermal design
- Fuel cell technology
- Line powering of telecommunications systems Energy Storage

This Conference, which serves the broad community of researchers, suppliers and operators, explores new technologies presents the latest developments in communications energy systems and related power-processing devices and circuits. of power conversion, energy storage and systems design for telecom applications. To register for the conference, please go to www.intelec2014.org/registration. For more information including Conference Venue, Technical Program, Exhibition and Social Program, please visit www.intelec2014.org.