



WWW.IEECONTACT.ORG

DECEMBER 2013
CIRCULATION 3328

VOLUME 44
NUMBER 12



IEEE prohibits discrimination, harassment and bullying.
Info: <http://www.ieee.org/web/aboutus/whatis/policies/p9-26.html>

- **A message from the Chair**
- **Wind - a never-ending source of energy**
- **Workplace ergonomics and safety**
- **Tour: EVASC Medical Systems**
- **Measuring the arrival quality of real-time packet trains**
- **10th International Workshop on Complex Systems**

Dear Vancouver Section members and friends,

As 2013 is coming to an end soon I would like to thank all of you for your activities and support of IEEE Vancouver. It has been my privilege to represent you over the year at the IEEE Canada Board, our AGM and in the few R6 meetings (IEEE Seattle) I attended this year. There is no comparison, we really rocked this year! In fact we received a request to participate in a survey for being a 'High Vitality' Section.

As of this date we actually grew in membership in spite of the hard economic situation worldwide. Our section events such as the AGM



& social event were well attended and documented. In many cases the whole family of our volunteers contributed in one way or another and I would like to take this opportunity to thank them. Overall the section enjoyed stability and the monthly Executive meetings were attended by both remote and onsite members. In spite of sporadic technical difficulties, teleconferencing worked quite well and no one was left

behind. I have missed a few meetings due to business travel and I thank the rest of the executive meeting for filling the gap in my absence.

In this era of 'New Media' I would like mention the excellent work done by our multimedia team under the guidance of our long-time volunteer Pieter Botman. It is almost unheard of in the IEEE in general and definitely ground breaking work within IEEE Canada.

We have a presence on the web in quite a few locations including our

newsletter 'IEEE Vancouver Contact' and various chapter websites and on the section level. A quick search also revealed some smart phone apps which present our posted information on demand.

This summer we hosted some of the candidates for IEEE 2014 President Elect and the incoming IEEE President for 2014, Roberto De Marca. We are globally recognized as a preferred location for conferences and maintain a good relationship with Tourism Vancouver. This year we also concluded the centennial activities we started two years ago by erecting the 100 years for IEEE Vancouver monument with the help from the City of Vancouver. This initiative was so unique that the IEEE President actually sent a message through IEEE Canada president who participated in the event in person.

We hosted a TISP regional workshop in May and the activity is continuing. In fact we are setting the example and R6 may start similar activities as we offer to mentor them. I would like to welcome all the new volunteers which will carry out the bulk of the activities in the coming year. Thank you and please do not be afraid to ask question and attend the volunteer training which we hold early in the year.

We still have room to improve and I urge you to consider applying for Senior Membership level if you qualify. We are always open to suggestions and welcome visitors in our events. IEEE HQ has discounts in special circumstances (such as job loss) and you get a rebate for any new member you recruit. Although my term as Section Chair will end this year, I hope to see all of you at the IEEE events to come!

Alon Newton P. Eng SMIEEE – IEEE Vancouver Section Chair 2013



Wind - a never-ending source of energy

Mahda J. Jahromi
Endurance Wind Power .

Friday 29 November

11:00 AM to 1:00 PM

Applied Science Building
Room ASB 9896
Simon Fraser University
Burnaby

Although windmills were used in Persia as early as 200 B.C. to draw up water or grind grains it wasn't until the 18th century that a wind turbine was utilized for generating electricity. The first electricity-generating wind turbine was a battery charging machine installed in July 1887 by the Scottish academic James Blyth to light his holiday home in Marykirk, Scotland. Some months later American inventor Charles F Brush built the first automatically operated wind turbine for electricity production in Cleveland, Ohio.

Despite such diverse developments, at the beginning of modern industrialization, the use of the fluctuating wind energy resource was substituted by fossil fuel fired engines or the electrical grid, which provided a more consistent power source. However it was by the first oil price shock in the early 70s that interest in the power of the wind re-emerged. Ever since then more countries have begun to show interest and are investing in the wind industry to the extent that nowadays in addition to providing clean and renewable energy, wind turbines also serve the unconventional roles of technology demonstration, government public relations, and education.

In this presentation, after providing a brief overview of

the wind energy status around the world, some of the most common wind turbine designs from an electrical point of view will be presented. The overview of wind turbine topologies will be followed by an introduction to Endurance Wind Power, some of its wind turbine designs and examples of our innovative approach with proven technologies to overcome technical issues that we have faced and experienced.

Speaker: Dr. Mahda J. Jahromi, Endurance Wind Power Dr. Mahda J. Jahromi (S'08, M'12) was born in Shiraz – Iran. He received his B.Sc. degree from Yazd University (1st Class Honors) and his M.Sc. from Shiraz University (Valedictorian). He worked in cement industry for a few years before leaving Iran for Singapore where he started his Ph.D. degree in Electrical and Electronics Engineering. Achieving high academic standards he was selected as Nanyang Technological University Ph.D. student representative at Rolls Royce Company tidal research laboratory in Singapore, where

he worked on the operational and planning aspects of tidal turbines. He moved to Vancouver in 2012 and he is now the lead Electrical Engineer at Endurance Wind Power, one of the world's leading manufacturers of small scale and distributed wind turbines.



Please RSVP by November 28, 11:59 PM

http://vancouver.oc.ieee.org/event/wind-a-never-ending-source-of-energy1?required_login

Information
Power Electronics Chair
Reza Sabzehgar
rsa46@sfu.ca





Brian Campbell of B.C. Federation of Labour

The **tentative** dates are Wednesday/Thursday 18 - 19 December

Building SW1 BCIT Burnaby campus

Visitor parking available Bus stops # 51546: Southbound # 51547: Northbound

Information

IEEE Young Professionals Vice-chair Rahul Khopkar rahul.khopkar@gmail.com

Workplace ergonomics and safety

Repetitive Stress Injuries (RSI) cause untold physical, mental and financial harm to the employee, not to mention lost productivity to the employer. Carpal Tunnel Syndrome, Back and Neck injuries are some of the results of repetitive work motions.

The presentation includes:

- rights and responsibilities of employer, supervisor and workers
- fundamentals of ergonomics
- hazard identification, assessment and control
- hierarchy of controls for ergonomics
- reporting of injuries

Brian Campbell of B.C. Federation of Labour will be showing how to structure your work and workplace to minimize the chances of RSI. This includes the physical layout of the workbench, assembly line as well as the sequencing of work and the choice of appropriate tools. This talk will be useful to all types of workers and supervisors. RSI avoidance is an important component of workplace and occupational safety. If time permits, Occupational Health and Safety Regulations would be discussed.

Speaker: Brian Campbell works at the BC Federation of Labour Occupational Health and Safety Centre and is a member of the USW local 2009. He provides education for workplaces on various health, safety and environmental topics.



* Formerly IEEE GOLD - Graduates Of the Last Decade



Ian McDougall Evasc Medical Systems

Tour: EVASC Medical Systems

The IEEE Engineering in Medicine and Biology (EMB) Vancouver chapter is organizing a technical site tour of Evasc Medical Systems <http://www.evasc.com>.

The tour will be conducted by President and CEO Mr. Ian McDougall

The event is free of charge but requires registration. Registration closes at December 4th.

For registration please email sarak@ieee.org and indicate if you have an IEEE EMB membership. If your registration is successful, you will receive a confirmation on December 6th.

Space is limited to 25 people and priority will be given to IEEE EMB members

About Evasc Medical Systems

Evasc Medical Systems Corp. (EvascTM) is an endovascular medical device company dedicated to creating the most effective, reliable and innovative solutions possible. Evasc provides contract services and licensing opportunities, and has in-house product developments.

Our current primary focus is the development of a unique therapy, EclipsTM, which will help the thousands of people whose brain aneurysm occurs at a bifurcation where one artery branches into two arteries.

Address

Evasc Medical Systems Corp. 107-1099 West 8th Avenue, Vancouver

Monday 09 December

4:00pm to 5:00pm

Evasc Medical Systems 107-1099 West 8th Ave Vancouver

INFORMATION

Engineering in Medicine & Biology Vice-chair Sara Khosravi sarak@ieee.org or sarak@ece.ubc.ca



Measuring the arrival quality of real-time packet trains - a global perspective



Ulrich Speidel
University of Auckland

Monday 02 December
2:00 pm to 3:30 pm

ASB 10900 (IRMACS)
Simon Fraser U, Burnaby

Light refreshments
served.
Open to public.

Please register (aids our
estimating attendance)

Information

Circuits and Systems
Chair Ljiljana Trajkovic
ljilja@cs.sfu.ca

Real-time applications on the Internet include everyday applications such as Voice over IP telephony, but also more advanced technologies such as remote manipulation, e.g., for remote surgery. These applications work best if their packet trains arrive with minimum latency, low packet loss, constant inter-arrival times and all packets in the order in which they were transmitted. Latency is largely unavoidable due to the physical distance, but not meeting the remaining requirements perfectly requires applications to buffer packets until sufficient data for meaningful processing (e.g., audio playback) has accumulated at the receiver.

Conventional "improvements" to Internet infrastructure, such as the addition of new links and load balancing can be a double-edged sword: While they create extra bandwidth and reduce congestion and sometimes latency, they also create additional router queues and alternative paths, potentially affecting inter-arrival times and in-order delivery. This is in particular a problem if the destination is served by long thin networks. Our project is a longitudinal study

that attempts to track the long-term global trend in the arrival quality of real-time long distance packet streams.

Speaker: Ulrich Speidel is a senior lecturer in the Department of Computer Science. He holds a PhD in Computer Science and an MSc in Physics from Auckland, and held a visiting associate professorship at the University of Tokyo in 2010. He works in information theory, variable-length coding, information measurement and web technologies and applications of all these fields.

His main project in the last two years has been to establish of an international network of computers for active network measurement to investigate long-term trends in the smoothness of long-distance real-time data flows.



10th International Workshop on Complex Systems and Networks

SFU Harbour Centre
December 11-13, 2013

<http://iwcsn2013.eie.polyu.edu.hk/Home.html>

The International Workshop on Complex Systems and Networks (IWCSN) is a strongly interdisciplinary workshop intended to bring together mathematicians, physicists, biologists, social scientists, and engineers working on different aspects of network dynamics. The focus of IWCSN 2013 will continue to be devoted to the impact of network structure on systems dynamics. This area continues to be a hot research topic in all branches of science and technology.

The objectives are to provide opportunities for participants to learn about state-of-the-art research in various related yet disparate fields. We plan to have both tutorial talks and in-depth technical talks describing the latest research results and ongoing projects. Furthermore, these workshops provide opportunities for researchers and students from diverse disciplines to interact, find common ground, share results and insights, and foster collaboration.

Some of the questions that we have and would like to address in this workshop are: What are the universality properties of complex networks? For a particular application, what is the best complex network to deploy? How does the topology of the network influence various aspects of the underlying system? What can we learn from biological and social networks that may be useful in engineering networked systems and vice versa? What network models can be analyzed mathematically yet capture the salient features of the underlying ensemble systems? Can we build a taxonomy of complex network models that facilitates the identification of phenomena in ensemble systems?

The 2013 IWCSN will be divided into two main sections: theoretical works with a special focus on mathematical modeling and careful analytical studies a wide range of problems emanating from various applications in physics, chemistry, life sciences, engineering, and communications. There will be an opportunity for junior researchers and students to present their work including a session where researchers may pose interesting open questions.

Local organizer: The IRMACS Centre, Simon Fraser University

Sponsors: IEEE Circuits and Systems Society Centre for Chaos and Complex Networks, City University of Hong Kong, Hong Kong; IEEE Vancouver Section and IEEE Circuits and Systems Society joint Chapter of the Vancouver/Victoria Sections; Faculty of Applied Science and School of Engineering Science, Simon Fraser University

Inquiry: Ljiljana Trajkovic (Email: ljilja@sfu.ca)

