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Message from the chair

Dear Vancouver section member,

As we near the end of 2011, we can look back on a truly remarkable year for the section – our centennial year. Along with our usual large number of technical activities, this year was full of special centennial activities, events and achievements. The most recent centennial event, the Centennial Technical Symposium, was held on October 21. Attendees appreciated a selection of excellent presentations, and to top it off, City of Vancouver councilor Andrea Reimer proclaimed "Electrical and Electronics Engineering Awareness Week" in the City of Vancouver on behalf of Mayor Gregor Robertson. A summary of this event is provided in this issue of Contact. With the symposium, we conclude the section centennial events for 2011, but a few remaining centennial initiatives will continue into 2012. A more formal report on this year's activities can be found ***here.***

We are working on the realization of the plan for an IEEE monument, as announced during our birthday celebration event this past August (details reported in October 2011 issue of Contact). Also, the IEEE Vancouver centennial booklet is currently being finalized - please sign up to obtain your free copy. An announcement with more details can be found in the current issue of Contact as well as on our website. This limited edition publication will be mailed in December/January to those members who signed up to request a copy. Please consider this as our section's gift to all of you who wish to preserve it as a keepsake. I am delighted to announce that we received a grant from IEEE Canadian Foundation to be used towards the printing and mailing of the booklet.

My term as a section chair is ending with 2011. In this last chair's message, I would like to reflect on IEEE Vancouver's source of strength; our volunteers. Challenges and opportunities that presented themselves throughout this year have put all of our volunteers to the test. Countless hours were spent on planning and executing events for our members. Thousands of emails were exchanged, numerous conference calls and meetings were held. We started off the year with a long wish list, and we managed to achieve our objectives, thanks to the exceptional dedication of our many volunteers. We will recognize all of our volunteers at the upcoming AGM in 2012. My special thanks go out to Gruja Blagojevic, Pieter Botman, and Kouros Goodarzi for their outstanding contributions to the section's centennial year.

With this I would like to conclude my message. It has been my pleasure and great honour to serve you as section chair in 2011.

Mazana Armstrong, IEEE Vancouver chair

Late advisory: Please consult *this* for information about elections of 2012 IEEE Vancouver executives.

Industrial tour at PATTON & COOKE CO

Thursday 24 November

1.00 pm – 3.00 pm

7795 - 128th Street,
Surrey , B.C

Registration required
Jahangir Khan
Jahangir.khan@
powertechlabs.com

As designers and manufacturers of medium voltage cable couplers, substation connectors, and utility cable accessories, Patton & Cooke have a wide range of products that would be of interest to many industry professionals and engineers.

Specifically, those who are likely to find the most value in a visit to this facility would include those members who are involved in the following areas:

- Substation Design Engineering
- Utility Power Distribution Engineering
- Mining and Tunneling Electrical Systems Design and Engineering
- Shore Power Systems Design and Engineering
- Portable / Backup Power Systems Design and Engineering
- Wind and Solar System Design and Engineering

Patton & Cooke is a member of the CSA committee for mine power feeder cables and the IEEE / ISO / IEC high voltage shore power systems standards committee.

In addition to an overview of Patton & Cooke products, some discussion of applicable design and test standards will be conducted as part of this tour.

Further information on Patton & Cooke can be found at: www.pattonandcooke.com (Tel: 604.591.5374 Fax: 604.591.3505 Email: info@pattonandcooke.com)

M. Ramamoorty
Fellow IEEE

12:00 Noon - 1:30 PM
Tuesday 29 November

Edmonds A01
BC Hydro
Southpoint Auditorium

Information
Power and Energy Chair
Glen Tang
Glen.Tang@powerex.com

IEEE PES
Power & Energy Society®

New techniques to improve power quality

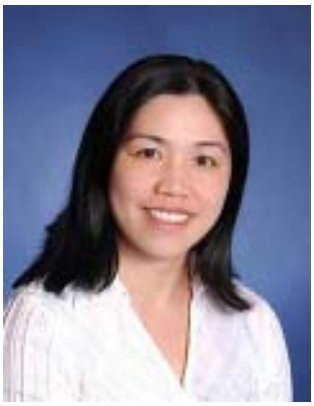
Power quality has become an important Issue with all power utilities. In addition to the Sags, Swells and Distortion of the bus voltages, reliability and security considerations are associated with the measure of Power Quality. Consumer awareness on this aspect has made the power distribution companies to take appropriate measures to satisfy the Power Quality Norms as per the guidelines.

This talk covers some of the simple and economical methods to improve the Quality of Power supplied to consumers. The quality parameters considered here are the voltage and current distortions in terms of Total Harmonic Distortion (THD). Voltage stability index and an equivalent circuit approach is discussed for prevention of the cascaded tripping of transmission lines during stable power swings following the clearance of a fault and thereby improving the system reliability.

Speaker: Dr. M. Ramamoorty obtained Ph.D. from University of Toronto in 1966. He did his Masters in Engineering from one of the prestigious educational institute, Indian Institute of Science, Bangalore in 1959. He originally graduated from Andhra University in 1956. Dr. M. Ramamoorty joined the faculty of Electrical Engineering at Indian Institute of Technology (IIT), Kanpur in 1967.

In 1976, he joined ABB (India) as Chief of Research and then moved to Central Power Research Institute (CPRI), Bangalore as its First Director General in 1984. He retired from regular service in 1994, continued as Director Electrical Research and Development Association (ERDA) till 2006.

Dr. Ramamoorty has authored seven books, holds four patents and applied for patents for additional four are pending. He guided 22 Ph.D. students and has received a number of Awards from the professional bodies in India. He worked as Visiting Professor at a number of universities outside of India including at the University Of British Columbia (UBC). Presently, he is an Honorary Distinguished Professor at Indian Institute of Technology(IIT) and Osmania University both at Hyderabad and Advisor to a number of Engineering Colleges. He became a Fellow of IEEE in 1987 for his contributions to Power Engineering Research. He is the Life Fellow of Society of Power Engineers and IEEE



Karen C. Cheung
University of British Columbia

Thursday 15 December
2-3PM

Applied Science Building (ASB) 9896,
Simon Fraser University

Catering will be provided by IEEE

Information
Electron Devices Chair
Bonnie Gray
bgray@sfu.ca

Microfluidic cell culture systems with integrated sensors for drug screening

Microscale three-dimensional constructs can more closely mimic the natural extracellular environment than traditional two-dimensional cell culture. Our microfluidic platform, which involves manipulation of very small amounts of liquid, features a 3D matrix which can be formed in situ inside the microfluidic platform, encapsulating the cells in well-defined volumes of hydrogels. This 3D system makes it possible to establish growth in multicellular spheroids which mimic solid tumors and will allow us to monitor the response of individual spheroids to drug treatment.

With the ability to dynamically control the microenvironment, we can create physiological drug profiles. Our work will also integrate a thin-film oxygen sensor with a microfluidic oxygen gradient generator to allow us to study effects of hypoxia on cell response to drug treatment. In future, this technology promises to improve cell-based validation in the drug discovery process, decreasing the cost and increasing the speed in screening large numbers of compounds.

Speaker: Karen C. Cheung received the B.S. and Ph.D. degrees in bioengineering from the University of California, Berkeley, in 1998 and 2002, respectively. From 2002–2005, she was a postdoctoral researcher at the Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland. She is now an Assistant Professor at the University of British Columbia, Vancouver, BC, Canada. Her research interests include lab-on-a-chip systems for cell culture and characterization, inkjet printing for tissue engineering, and implantable neural interfaces.

For more information (e.g., directions), please contact: Bonnie Gray, bgray@sfu.ca

IEEE Electron Devices Society

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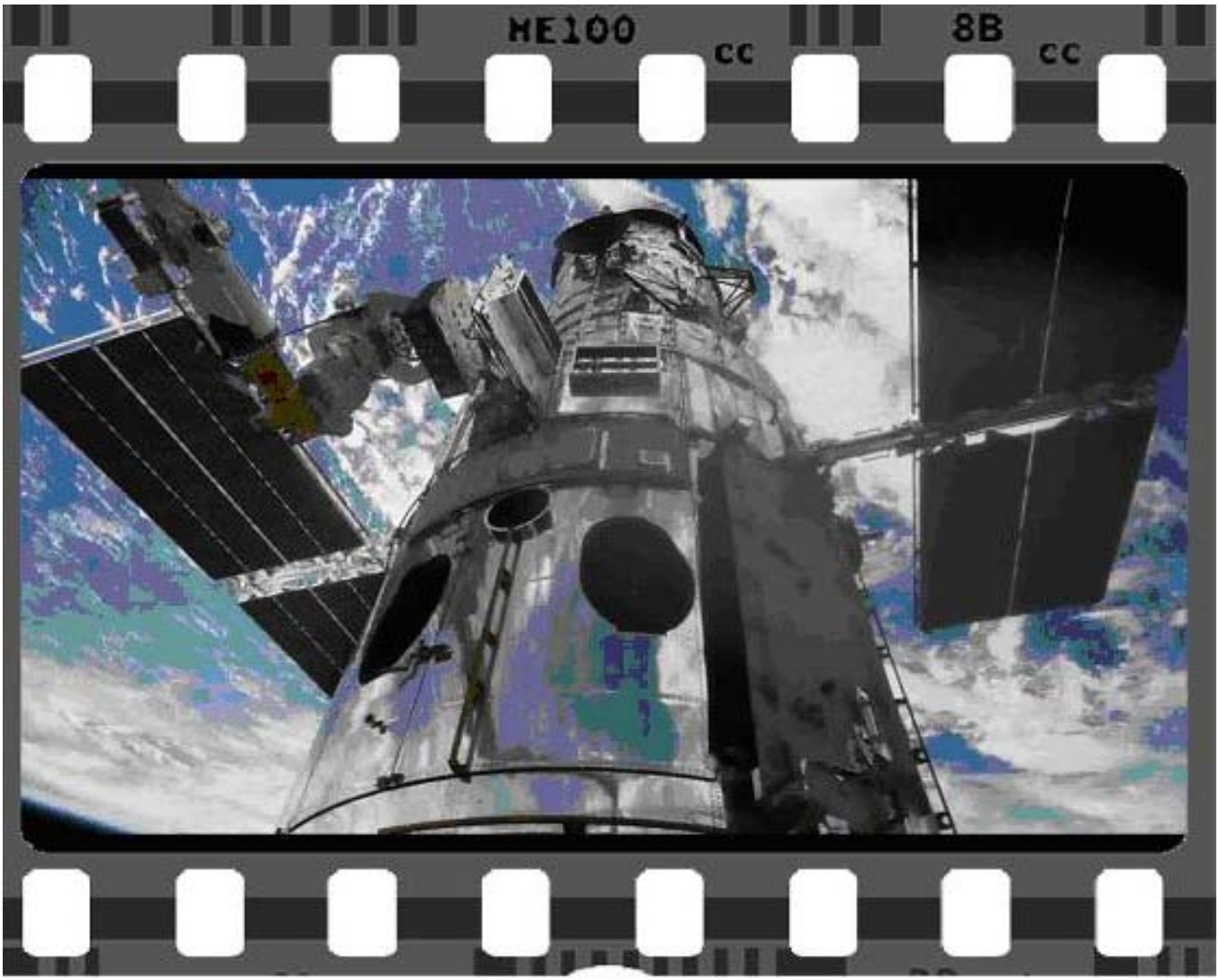
IEEE Vancouver
2011 annual social event



We have an exciting evening planned for our members and their guests. Please join us for a pre-show reception and good conversation at Science World at Telus World of Science and experience an enormous and immersive film experience presenting the Hubble story at the OMNIMAX theatre. Past years' events have sold out in a matter of weeks! Attendance is limited, please register at: http://meetings.vtools.ieee.org/meeting_view/list_meeting/8887.

IMPORTANT NOTICE: This event is reserved for IEEE members and their guests (limit two guests per attending member). When registering on-line, each attendee has to register separately providing their IEEE membership number (or their host's membership number if attending as a guest). The only method of payment for online registration is credit card (or Paypal). Please contact Kouros Goodarzi at krs@ieee.org if you would like to arrange for other modes of payment or invite more

Location Science World at Telus World of Science
1455 Quebec Street, Vancouver
Date Friday 25 November
Time 05:30PM to 09:00PM (3.50 hours)
Program

5:30 - 6:00 Door opens
6:00 - 6:30 Pre-show reception & section centennial announcements
6:30 - 7:00 Electricity in Our World Gallery
7:00 - 8:00 Feature presentation: Hubble at OMNIMAX
8:00 - 9:00 Socializing in Our World Gallery

Inaugural IEEE Global Humanitarian Technology Conference
October 30 – November 1, 2011
Seattle, WA, USA

The IEEE Global Humanitarian Technology Conference (GHTC) is the latest initiative from IEEE to promote awareness and engagement within IEEE on technology's humanitarian role. IEEE's commitment to humanitarian work was expressed by our president Moshe Kam in his opening remarks.
Dr. Kam announced that IEEE would ear mark $1 million dollars which would act as a 'spring board' for collaboration with other organizations. He encouraged the participants to take home the issues discussed at the conference and to become active in defining IEEE's role in humanitarian work. Currently there is a consensus that the institute should focus on large scale project with long term impact, however Dr. Kam emphasized that discussions have only begun.

Tony Majoram, the former UNESCO programme specialist for engineering advocated for a paradigm shift in the UN and in society. Engineering needs to be seen as an integral part in meeting the UN millennium goals. He encouraged IEEE as the biggest professional organization in the world to act as a unifying force for the efforts of the many initiatives already in progress.

Panel discussions, technical presentations, and poster sessions provided a mix of industry, government, volunteer and academic organizations. Several common themes emerged:

- A successful humanitarian project should be defined and led by the local community.
- Trust and partnership is key in implementing any program.
- A long term view is required to establish partnerships and in measuring success.
- Humanitarian projects require interdisciplinary collaboration at both a technical and social level.
- Recognition of humanitarian technology research is needed in both industry and academia.
- Humanitarian projects are high risk, and professional literature should recognize this.

Already initiatives are taking root which bring together technical and humanitarian organizations. Engineers for Change (E4C) is a community of engineers, technologists, social scientists and NGOs who share expertise in documenting and developing humanitarian projects. Engineers without Boarders, the IEEE Foundation and several professional American engineering societies have begun to participate.

President Kam's message has resonated with the IEEE Vancouver executive. In January 2012, an invitation will be sent out asking for ideas and participation in defining how our section could best address the challenge of applying engineering technology to humanitarian needs.

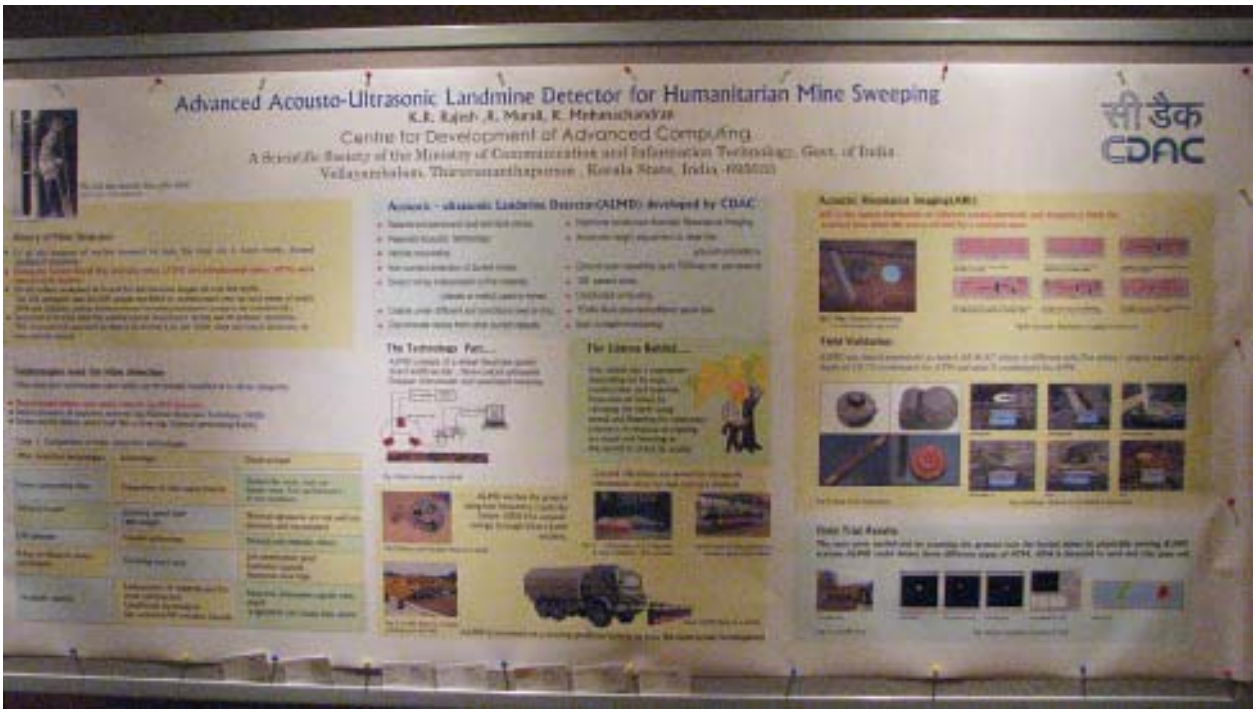
Many thanks to the conference chair Paul Kostek for all his work in making the first GHTC conference a success. I would also like to thank IEEE Vancouver for sponsoring me for this event.

Sincerely,
Paul Lusina, Ph.D., P.Eng.

If you would like to be involved in the planning of the Vancouver Section Humanitarian Technology meeting, please send your contact information to: Paul Lusina - paul.lusina@ieee.org

Other Links:

- Engineers for Change: www.engineeringforchange.org/home
- IEEE Global Humanitarian Technology Conference, 2011: www.ieeeghtc.org
- International Conference on Information Systems for Crisis Response and Management: www.sfu.ca/~iscram12/callforpapers.html



IEEE Vancouver centennial publication and keepsake

As this year of celebration draws to a close, the Vancouver section is preparing a brochure on the history of the section to celebrate its 100th anniversary. The publication will be informative and provide a precious keepsake for members. It will contain a reprint of earlier history articles about the Vancouver section, an updated history article, details of centennial celebrations and lists of IEEE Vancouver chairs and award recipients.

To receive a free copy of the publication please register at http://goo.gl/FO1RS

Centennial Technical Symposium Higlights

On October 21, 2011 nearly 100 IEEE members participated in the Centennial Technical Symposium. In addition to excellent presentations and tasty food, there was a surprise announcement by the City of Vancouver Councillor Andrea Reimer. The City of Vancouver formally proclaimed the week of Oct 21-28 to be "Electrical and Electronics Engineering Awareness Week", in recognition of the contributions made by engineers to society, the City and Province.

Volunteers: Zahra, Nasim and Dana

PES DL speaker Miroslav Begovic, Georgia Tech: *"The Future of Renewable Energy: a Case for Photovoltaics"*

Speakers and section executives (left to right): Kouros, Mazana, Cheong, Ljiljana, Jose, Miroslav, Philippe, Ark and Gruja

City of Vancouver Proclamation

Philippe Kruchten, UBC: *"Why is Software so Bad? (Is it?)"*

Ark Tsisserev, Stantec: *"Interconnection of Life Safety Systems with a Building Fire Alarm System"*

Section Chair Mazana Armstrong, Symposium Chair Gruja Blagojevic with Councillor Reimer

Ljiljana Trajkovic, SFU: *"Understanding Communication Networks"*

David Neely, GE Energy: *"Smart Grid and Smart Cities – Concepts to Reality"*

Cheong Siew, BC Hydro: *"Grid Modernization"*

Jose Marti, UBC: *"The Transparent Grid: Transition to Green Technologies and User Awareness"*

Google, iPhone, … what's next?

Yong Lian
University of Singapore

Thursday 08 December
5:00 pm

Rm2020 Kaiser Building
2332 Main Mall, UBC

Co-sponsored by the IEEE SSCS and Technologies Joint Chapter of the Vancouver Section and IEEE CASS Joint Chapter of the Vancouver/ Victoria Sections

Information
Circuits and Systems chair Ljiljana Trajkovic
ljilja@cs.sfu.ca
or
Solid-state Ciruits Chair Shahriar Mirabbasi
shahriar@ece.ubc.ca

Internet has created several waves in recent years. From email, eBook, eBay, eCitizen to iGoogle, iPhone, iTunes, and iPad. These cool gadgets change our lifestyle, connect us to people, and make information more accessible. What will be the next wave?

Picture this: You are fully equipped with smart wireless sensors which will continuously capture vital parameters from your body and sending the data to your smart phone which will then relay the data to a diagnosis centre where doctors with the help of computer programmes, can identify early signs of potential disease. If any abnormalities are discovered, the doctor will alert you to visit the clinic. This is the scenario for future healthcare, where prevention is the norm rather than waiting till symptoms appear. In many unfortunate instances, there may not even be symptoms.

Take for example, cardiovascular disease, the leading cause of death globally which is projected to cause 23.6 million deaths worldwide every year by 2030. By building a Body Sensor Network around or inside a human body, wireless health facilitates continuous monitoring by providing more information about a person's health than isolated snapshots obtained when visiting the hospital or clinic. Wireless health is envisaged to revolutionise the healthcare system to meet our future health needs. In this lecture, Professor Lian will draw up on previous works and on-going studies at the Department of Electrical & Computer Engineering of NUS to reveal novel circuit and signal processing techniques that can help shape future healthcare.

Speaker: Yong LIAN received the PhD degree from the Department of Electrical Engineering of NUS in 1994. He worked in industry for 10 years and joined NUS in 1996. Currently, he is a Provost's Chair Professor and Area Director of Integrated Circuits and Embedded Systems in the Department of Electrical & Computer Engineering, NUS. His research interests include low power circuit techniques, computationally efficient signal processing techniques, and wireless miniaturised biomedical devices. Dr. Lian is the recipient of the 1996 IEEE CAS Society's Guillemin-Cauer Award for the best paper published in the IEEE Transactions on Circuits and Systems II, the 2008 Multimedia Communications Best Paper Award from the IEEE Communications Society for the paper published in the IEEE Transactions on Multimedia, and many other awards. He is also a recipient of the 2009 and 2010 NUS Annual Teaching Excellence Awards. Dr. Lian is the Founder of ClearBridge VitalSigns Pte Ltd, a start-up for wireless wearable biomedical devices.

Dr. Lian is the Editor-in-Chief of the IEEE Transactions on Circuits and Systems II, Steering Committee Member of the IEEE Transactions on Biomedical Circuits and Systems (BioCAS), Chair of DSP Technical Committee of the IEEE Circuits and Systems (CAS) Society. He was the Vice President for Asia Pacific Region of the IEEE CAS Society from 2007 to 2008, Chair of the BioCAS Technical Committee of the IEEE CAS Society (2007-2009), the Distinguished Lecturer of the IEEE CAS Society (2004-2005). Dr. Lian is a Fellow of IEEE.

IEEE CIRCUITS AND SYSTEMS SOCIETY
IEEE SOLID-STATE CIRCUITS SOCIETY
IEEE COMPONENTS, PACKAGING, AND MANUFACTURING TECHNOLOGY SOCIETY
IEEE

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