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Dear Members,

Message from the chair

We are nearing the end of the year and it is time to look back at our accomplishments. How well have we done this year?

I will start with our two young subsections, Okanagan and Northern BC. The Okanagan Subsection held six technical events this year, and hosted the 12th Canadian Workshop on Information Theory (CWIT) this past May. The NBC Subsection held four technical events including their two events on April 4 by Richard Stallman (GNU operating system) and Dr. John Mashey (Silicon Valley). Special thanks to the subsections' first chairs Julian Cheng from Kelowna and Jernej Polajnar from Prince George as well as their dedicated volunteers for promoting IEEE and providing service to their local membership during these first years in operation.

Our technical chapters also performed well. Out of fourteen chapters within our section, half of them held four or more technical meetings this year. In total our chapters held around sixty technical meetings to date. The Joint Communications Chapter (Alon Newton, chair) led the way with fifteen technical meetings; a highlight being the joint event with Life members and GOLD affinity groups titled Laser Science at Science World featuring the first laser. Our Power and Energy Society Chapter (Glen Tang, chair) was again recognized this year with a high performance chapter award (2010) from the society which also carries a monetary value of \$1000. In addition to their consistently highly attended technical events, this year they are also bringing back their special event, the PES Annual Banquet on October 24.

All three affinity groups were active this year. Women in Engineering (WIE) affinity group (Zahra Ahmadian, chair) had a truly outstanding year with their many activities, including the implementation of Try Engineering initiative at a local elementary school. The WIE group organized technical and professional skills development meetings, student round tables and a social program for IEEE WIE members. They also attracted external financial funding and organizational support from West Coast Women in Science and Technology

(WWEST) and the University of British Columbia for their outreach activities. Our Life Member affinity group actively participated in centennial events and initiatives this year. A memorable event From Softwood to Software – 100 Years of IEEE and Vancouver was held in June.

Our student branches had a successful year as well. Their Think Engineering annual networking event with industry (organized by UBC, SFU and BCIT student branches) had a record-breaking attendance of 300. The UBC student branch won the George Armitage Outstanding Student Branch Award, and the BCIT student branch placed second in Canada in the IEEE student branch website competition. All three student branches held project, paper, and poster competitions as a part of the section's centennial, as well as receptions for students, faculty and section executive. All three schools and their student branches were recognized by the section with centennial plaques. Our UBC-Okanagan student branch received \$5000 towards establishing the McNaughton Learning Resource Centre supported by IEEE Canadian Foundation (ICF) and their home department. Emily Landry, UBC-O student branch chair, received a \$5000 ICF scholarship for her role in establishing their local McNaughton Centre. This past February the new IEEE student branch at UNBC in Prince George was approved.

The Section has organized a number of centennial events this year with recaps provided in previous issues of the Contact newsletter. Nine events have been held to this point, with the tenth and final centennial event scheduled for October 21 (Centennial Technical Symposium). Our final section event this year is the Social event coming up in November.

I look forward to the last two months of my term as a chair, and I am excited about finalizing the details of the last remaining centennial initiatives – the centennial IEEE monument and booklet. I look forward to seeing you at the upcoming events.

Mazana Armstrong, Chair IEEE Vancouver Section
mazana.armstrong@ieee.org



Dean Hildebrand
IBM Research

Virtualized NAS environments: an unnatural formation

Cloud architectures are moving away from a traditional data center design with SAN and NAS attached storage to a more flexible solution based on virtual machines with NAS attached storage. IDC reports that by 2014, 45% of virtual servers will use NAS or iSCSI. While VM storage based on NAS is ideal to meet the high scale, low cost, and manageability requirements of the cloud, it significantly alters the I/O profile for which NAS storage is designed.

are the two biggest factors that fetter performance in the virtualized server NAS environment. In this talk I will discuss these issues and give a detailed workload analysis of using NFS in virtualized server environments.

Speaker: Dr. Dean Hildebrand is a Research Staff Member in the Storage Systems group at the Almaden Research Center. His research interests include distributed access to large data stores and is the primary researcher of pNFS, an key piece of NFSv4.1 that provides direct storage access to a diversity of parallel file systems while preserving operating system and hardware platform independence. He received a B.Sc. in computer science from the University of British Columbia in 1998 and a Ph.D. in computer science from the University of Michigan in 2007.

UBC Vancouver Campus
Kaiser 2020
2332 Main Mall, UBC

Tuesday 22 November
4:00 p.m

At IBM we are revisiting the virtualized NAS storage stack to understand the consequences of architectural quirks such as placing a block layer on top of a file layer and forcing a single I/O request to pass through three separate file systems on its way to and from the disk. These quirks affect the alignment and size of I/O requests to the server file system, which

Information
Computer Society Chair
Sathish Gopalakrishnan
sathish@ece.ubc.ca



Assessing fault sensitivity in MPI applications

Charng-da Lu
Center for Computational
Research

Tuesday 08 November
10:30 a.m.

UBC Vancouver Campus
Kaiser 2020
2332 Main Mall

Today, clusters built from commodity PCs dominate high-performance computing, with systems containing thousands of processors now being deployed. As node counts for petaFLOP systems grow to tens of thousands of nodes, the standard assumption that system hardware and software are fully reliable becomes much less credible. Concomitantly, understanding application sensitivity to system failures is critical to establishing confidence in the outputs of large-scale applications.

output with no user indicators. Encouragingly, even minimal internal application error checking and program assertions can detect some of the faults we injected.

Speaker: Charng-Da Lu obtained his PhD in Computer Science (with a concentration on high-performance computing) and MS in Mathematics from University of Illinois at Urbana-Champaign in 2007. He then worked as a quantitative software developer in a New York financial firm until 2010. Since June 2010, he is a Computational Scientist at the Center for Computational Research at SUNY at Buffalo, focusing on design and implementation of application kernels and benchmarks for the NSF-funded TeraGrid Technology Audit project. His research interests are reliability and performance tuning of large parallel and distributed systems.

Using software fault injection, we simulated single bit memory errors, register file upsets and MPI message payload corruption and measured the behavioral responses for a suite of MPI applications. These experiments showed that most applications are sensitive to even single errors. Perhaps most worrisome, the errors were often undetected, yielding erroneous

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Xi Zhang
Texas A&M

Distinguished Lecturer

Wednesday 02 November
3:00pm

UBC McLeod 418
2356 Main Mall

Information

Joint Communications
Chair Alon Newton
alon.newton@gmail.com

QoS provisionings in cognitive radio networks

Recently, the cognitive radio networks (CRNs) has emerged as an intelligent, flexible, and efficient spectrum accessing based wireless networks to increase the spectrum efficiency by enabling the secondary users (unlicensed users) to opportunistically utilize the vacant spectrum which is not used by the primary users (licensed users).

This talk will start with investigating the motivations and reviewing the state-of-the-art of CRN, including its fundamental theories and key techniques, classification of different spectrum sensing and sharing modes. Then, we will focus on the main challenges of cognitive radio MAC for QoS provisioning in synchronous CRNs, which is critical to many delay-, reliability-, and/or throughput-sensitive QoS-driven CRNs. The problem is challenging in that the QoS performance of the secondary users is not only affected by the time-varying wireless channels, but also constrained by the uncertain incumbency of the primary users. Finally, we will concentrate on our newly developed cognitive radio MAC and its modeling techniques for QoS-driven CRNs with emphasis on PHY and MAC cross-layer optimization. Specifically, we will present the cognitive radio MAC protocols design, its channel sensing policies, and M/G^k/1 queuing modeling techniques for packet delay analysis and control. We will conclude the talk by discussing the potential future research directions in CRNs.

Speaker: Xi Zhang received the B.S. and M.S. degrees from Xidian University, Xi'an, China, the M.S.

degree from Lehigh University, Bethlehem, PA, all in electrical and computer science, and the Ph.D. degree in electrical engineering and computer science (Electrical Engineering-Systems) from The University of Michigan, Ann Arbor. Prof. Zhang is currently an Associate Professor and the Founding Director of the Networking and Information Systems Laboratory, Department of Electrical and Computer Engineering, Texas A&M University, College Station.

He was an Assistant Professor and the Founding Director of the Division of Computer Systems Engineering, Department of Electrical Engineering and Computer Science, Beijing Information Technology Engineering Institute, China, from 1984 to 1989. He was a Research Fellow with the School of Electrical Engineering, University of Technology, Sydney, Australia, and the Department of Electrical and Computer Engineering, James Cook University, Australia, under a Fellowship from the Chinese National Commission of Education. He was with the Networks and Distributed Systems Research Department, AT&T Bell Laboratories, Murray Hills, NJ, and with AT&T Laboratories Research, Florham Park, NJ. He has published more than 200 research papers in the areas of wireless networks and communications systems, mobile computing, network protocol design and modeling, statistical communications, random signal processing, information theory, and control theory and systems. He is an IEEE Communications Society Distinguished Lecturer.



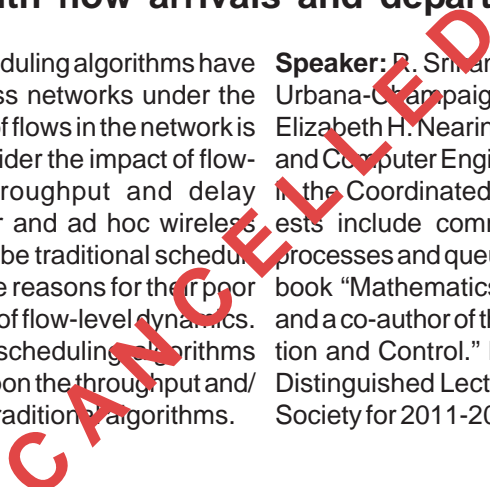
R. Srikant
University of Illinois

Distinguished Lecturer

Scheduling in wireless networks with flow arrivals and departures

Throughput-maximizing scheduling algorithms have been well-studied for wireless networks under the assumption that the number of flows in the network is fixed. In this talk, we will consider the impact of flow-level dynamics on the throughput and delay performance of both cellular and ad hoc wireless networks. First, we will describe traditional scheduling algorithms and identify the reasons for their poor performance in the presence of flow-level dynamics. Then, we will present new scheduling algorithms which significantly improve upon the throughput and/or delay performance of the traditional algorithms.

Speaker: R. Srikant is with the University of Illinois at Urbana-Champaign, where he is the Fredric G. and Elizabeth H. Nearing Endowed Professor of Electrical and Computer Engineering and a Research Professor in the Coordinated Science Lab. His research interests include communication networks, stochastic processes and queueing theory. He is the author of the book "Mathematics of Internet Congestion Control" and a co-author of the monograph "Network Optimization and Control." He is a Fellow of the IEEE and a Distinguished Lecturer of the IEEE Communications Society for 2011-2012.



Tuesday 15 November
11:00am
Rm 2020 Kaiser Bldg
2332 Main Mall UBC

Information

Joint Communications
Chair Alon Newton
alon.newton@gmail.com



Jt. Chapter BT-02/COM-19/IT-12/ITS-38/PHO-36/VT-06

ED 13NOV11

Motion perception in displays

Scott Daly
Dolby Laboratories

Tuesday 25 October

3:30 - 4:30pm

ASB 10900 (IRMACS
Presentation Studio)
Simon Fraser University
Burnaby, BC

Co-sponsor
Victoria Chapter
Circuits and Systems
Society

Information
Circuits and Systems
chair Ljiljana Trajkovic
ljilja@cs.sfu.ca

This talk will begin by covering the basics of Liquid Crystal Displays (LCDs) as applied toward television, referred to as LCTV. After setting the foundation for several dimensions of image quality such as spatial, color, temporal, and dynamic range, as well as the corresponding human visual system capabilities along those dimensions, the tutorial will focus in on the main problem that has hindered the LCTV: motion.

Since their introduction, LCDs were known for having a slower and asymmetrical temporal response compared to CRTs, which led to motion blur and flicker, respectively. For many years this hindered the use of LCD technology for television. Improving the temporal response time and the use of digital overdrive techniques led to a substantial reduction in motion blur. Still, some residual blur was visible in panned textures and scrolling text. Further analysis considering human visual system smooth pursuit eye tracking combined with the hold-type temporal aperture used with LCTV has identified the remaining sources of blur. New techniques such as backlight flashing, black data insertion, and frame rate conversion reduce the motion blur to that of CRT levels.

However, the CRT is not necessarily the ultimate benchmark, as it suffers from other motion artifacts, especially with slow velocities. This talk will describe the key spatiotemporal properties of the visual system relevant to motion blur, and the various approaches used in LCTV technology toward improving overall moving picture sharpness.

Speaker: Scott Daly received a B.S. EE degree in 1980 from North Carolina State University, and then worked for a number of years with early high-resolution laser scanning systems at Photo Electronic Corporation in West Palm Beach, Florida. Shifting from hardware to wetware, he obtained an M.S. in Bioengineering from the University of Utah in 1984, where he was engaged in retinal neurophysiology, completing a thesis on the temporal information processing of cone photoreceptors. He then worked from 1985 to 1996 in the Imaging Science Division at Eastman Kodak in the fields of image compression, image fidelity models, and image watermarking.

The years 1996-2010 were spent at Sharp Laboratories of America in Camas, Washington, where he led a group on display algorithms. Eventually becoming a research fellow and leader of the Center for Displayed Appearance, he had opportunities to apply visual models towards digital video and displays, with numerous publications on spatiotemporal and motion imagery, including starts in human interaction with wall-sized displays, audio perception and stereoscopic displays. These topics led him to recently join Dolby Laboratories in 2010 to focus on overall fundamental perceptual issues, and toward applications whose aim is to preserve artistic intent throughout the entire video path to reach the viewer. He is currently a member of IEEE, SPIE, and SID.



Spyros Thomas
Schneider Electric

Tuesday 25 October
6:00pm - 8:00pm

BCIT Burnaby Campus
Lecture theatre
SW5 building
(SW5-1850)

Information
Technology Mgmt chair
Adam Krolak
a.krolak@ieee.org

Quality management - best practice

*How Schneider Electric, a global energy management company,
handles quality control to help products be safe and reliable.*

Design for safety and reliability can be improved through rigorous adoption of stringent safety & design rules and processes within a quality framework. During this talk we will provide an inside how from concept & specification we arrive to the lessons learned for the design of the next generation focusing on the risk mitigation process as well as the applied design activities to meet the high standards.

Speaker: Mr. Thomas is leading Corporate Quality, Customer Support & Services at the Renewable Business Unit of Schneider Electric and based in Vancouver since July 2009. Mr. Thomas is responsible for developing, deploying and sustaining medium and long term strategic approaches to realize breakthrough process improvements which significantly optimize organizational performance and operational success at Renewable Business Unit. Mr. Thomas joined Schneider Electric in 1999 as Commercial

Channel Development Manager in Greece. Since then, Mr. Thomas has undertaken several leading positions in Product Management, Sales and Project Management.

Before moving to Renewable Business Unit he was responsible for Quality & Customer Satisfaction first in Greece and afterwards in Central & Eastern Europe. Prior to joining Schneider Electric Mr. Thomas was at AEG Energietechnik (ALSTOM) in the High Voltage Power transmission group as Project Manager in Sales responsible for Latin America.

Mr. Thomas holds a Bachelor of Electrical Engineering degree and a master in electrical distribution from the Technical University of Thessaloniki, Greece as well as a Master in Business Administration from the Marketing Academy in Hamburg, Germany and has obtained the BB in Six Sigma.



Meet and Learn

Technical Society Reporting

Tuesday 15 November

4:30pm to 6:00pm

Centre Auditorium – BC Hydro's Edmonds Office
6911 Southpoint Drive, Burnaby, BC

The IEEE Vancouver Section Industry Applications Society Chapter and the BC Hydro Office of the Chief Engineer are pleased to co-sponsor this technical society reporting out event. The purpose of this event is to share and transfer knowledge gained from attending technical society meetings, conferences etc. with others in the profession. The three presentations associated with this event will review the history/background of the topic covered at the technical

meeting, the current state of the art of the topic, the relevance of the key lessons learned, and the value to the power industry and utilities. Each presentation will be 30 minutes long. Please come and meet the local experts on topics relevant to the power industry. Food and refreshments will be provided.

Registration is encouraged and the event is free-of-charge



4.30 - 5.00

Condition Monitoring

Bob Stewart

Bob Stewart of BC Hydro will report out on his attendance of the spring 2011 Electric Power Apparatus Committee meeting of the Association of Edison Illuminating Companies (AEIC). The theme

of this AEIC meeting was Asset Management of Transmission Transformers and Circuit Breakers. Bob's presentation will concentrate on condition monitoring as part of an asset management program.

Bob is a Principal Engineer responsible for the Electrical area at BC Hydro with 30 years of experience in the Transmission, Generation and Distribution areas. He is also BC Hydro's representative on the Electric Power Apparatus Committee of AEIC. He is a Senior IEEE member and is registered as a Professional Engineer in the province of BC.



5.00 – 5.30

Generator Step-up Transformers

Muhammad Arshad

Muhammad Arshad of BC Hydro will report out on his attendance of the Transformer Committee at 2011 Doble conference. He is presently BC Hydro Generation Engineering's representative on this committee. Doble offers diagnostic instruments,

services, and the world's premier library of statistically significant apparatus test results for the benefit of energy generation and delivery companies and industrial power users worldwide.

Agenda

Muhammad's presentation will concentrate on the various lessons learned to help manage BC Hydro's large fleet of generator step-up transformers.

Muhammad is a Division Manager in BC Hydro's Generation Engineering responsible for the Electrical, Protection and Control Division. He holds a PhD in Electric Power Engineering, plus he is a Senior IEEE member and a registered Professional Engineer in the province of BC.



5.30 – 6.00

Marine Energy Systems

Jahangir Khan

Jahangir Khan of Powertech Labs will report on his attendance of the 2011 IEEE PES General Meeting/ Marine Systems Subcommittee, IEC TC 114 (Marine Systems) Plenary Meeting, and other conferences. His presentation will include Powertech's involvement in various national and international platforms, particularly relating to marine energy technologies, projects and systems.

Jahangir Khan is with Powertech Labs, Smart Utilities (Power System Studies) Business Unit. He holds a PhD in Electrical Engineering. He is currently the Chair of IEEE Vancouver's Joint IAS/ IES Chapter.

For more information please contact Bob Stewart of BC Hydro at bob.stewart@bchydro.com or Jahangir Khan, IAS Chapter Chair at jahangir.khan@powertechlabs.com

IEEE Industry Applications Society



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)



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A11-507

For 50 years, BC Hydro has been providing clean, reliable electricity to our customers. B.C. continues to grow and so has our need for power. Today, we are planning for the next 50 years by investing in new projects, upgrading existing facilities and working with our customers to conserve energy through Power Smart.

Learn more at bchydro.com/regeneration



Welcome.. recent arrivals to the best IEEE section on Earth! *

Pooyan Abouzar Djirandehi	GS	Mehdi Karimibiuki	M	Zhen Liang Seow	ST
Shahzad Ahmed	M	Ophir Kendler	GS	Esther Soko	ST
Farzad Aminravan	ST	Mike Kent	M	Greg Stortz	GS
Maryam Azimi	GS	Hanieh Khalilian	GS	Chris Struthers	M
Ken Baxter	AM	Parastoo Kheirkhah Dehkordi	ST	Ho Ming Tay	ST
Harman Brar	M	Farah Khurram	ST	Annelies Tjebbes	ST
Joshua Brenner	ST	Woo Soo Kim	M	Michael Trasolini	M
Anna B Brounstein	M	Stephen Kong	M	Steven Truant	ST
Ambrose Chan	GS	Xiaorong Lai	M	Gary Tse	ST
Yingjie Chen	GS	Justin Lammi	ST	David Turner	GS
Billy Cheung	GS	Carol Ya Ting Lee	M	Yuval Uriel	M
Eric Chu	ST	Yubo Lei	GS	Sima Valizadeh	GS
Justin Clapperton	ST	Honghua Li	GS	Joel Vandergrindt	ST
Jarrold Connolly	AM	Soliman Mahmoud	M	Andrew Verhoeven	AM
Gordon Davidson	M	Amar Manj	ST	Michael Vincent	ST
Alireza Dibaienya	ST	John Mollica	ST	Yan Wang	GS
Lisa Dorval	ST	Kristopher Montpetit	ST	Weing Kai Wee	ST
Vairavanathan Emalayan	GS	Steven Nguyen	ST	Sultan Wehaibi	ST
Guy Esselen	M	Viorel Nica	M	Christopher Wilson	M
Pooyan Fazli	GS	Binglai Niu	GS	Peiran Wu	ST
Charles Foell	GS	Theodore Noyes	ST	Meng Yang	ST
Rajvir Gill	GS	Ali Palizban	M	Weilong Yang	M
David Gloyn-Cox	M	Ting Pan	ST	Hamidreza Younesy	GS
Rick Godwin	AM	Glenn Parsons	M	Sheldon Young	M
Christopher Green	ST	Ravinder Paul	GS	Ge Yu	GS
Soroush Haeri	GS	Harry Pigot	ST	Yang Zhang	M
Gavin Han	ST	Shristi Pradhan	ST	Ruibing Zhao	ST
Xiaolei Hao	GS	Anca Simona Radu	GS	Slobodan Vukadinov	M
Lawrence Harris	M	Michael Randall-Stevens	AM	Jiesheng Wei	GS
Mike Henrey	GS	Ken Rarama	M	Michael Wiltshire	ST
Isha Isha	ST	Sarah Rastkar	GS	Yi Ran Wu	ST
Camille Jaggernauth	GS	Daniel Richter	ST	Andy Wu	GS
Paria Joker	GS	Greg Roy	M	Joseph Yu Mu	ST
Michael Jones	ST	Isaac Scheffers	ST	Cheng Zhang	GS
Avery Jones	M	Michael Sedlmair	M		

AF Affiliate - AM Associate Member - F Fellow - GS Graduate Student Member - LF Life Fellow
LM Life Member - LS Life Senior - M Member - SM Senior Member - ST Student Member

* IEEE Vancouver named Outstanding Large Section for 2009!

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



Office of the Mayor
CITY OF VANCOUVER
BRITISH COLUMBIA

Proclamation

"ELECTRICAL AND ELECTRONICS ENGINEERING AWARENESS WEEK"

- WHEREAS Electrical, electronic and computing fields of engineering and related areas of science and technology are the foundation of modern civilization;
- AND WHEREAS Institute of Electrical and Electronics Engineers (IEEE) is the world's largest professional association for the advancement of technology;
- AND WHEREAS IEEE has 400,000 members worldwide;
- AND WHEREAS IEEE and its members inspire a global community through IEEE's highly cited publications, conferences, technology standards, and professional and educational activities;
- AND WHEREAS IEEE's core purpose is to foster technological innovation and excellence for the benefit of humanity;
- AND WHEREAS The members of the IEEE Vancouver Section have been instrumental in the development of the province of British Columbia;
- AND WHEREAS The Vancouver Section has grown to over 2,000 members since 1911;
- AND WHEREAS IEEE is celebrating 100 years in Vancouver and British Columbia:
- NOW, THEREFORE, I, Gregor Robertson, Mayor of the City of Vancouver, DO HEREBY PROCLAIM the week of October 21st to 28th, 2011 as

"ELECTRICAL AND ELECTRONICS ENGINEERING AWARENESS WEEK"

in the City of Vancouver.

Gregor Robertson
MAYOR



Terahertz technology for space and earth applications



Peter de Maagt
European Space Agency

Distinguished Lecturer

Tuesday 01 November
16:30 - 17:30

UBC ECE
McLeod 413

Information

Joint Aerospace and
Electromagnetics chairs
Dave Michelson
davem@ece.ubc.c
Steven McClain
StevenMcClain@ieee.org

If you would like to join
us for dinner immediately
after the presentation,
please let Dave know.

ED 24OCT11

The terahertz (THz) part of the electromagnetic spectrum falls between the lower frequency millimetre wave region and, at higher frequencies, the far-infrared region. The frequency range extends from 0.1 THz to 10 THz, where both these limits are rather loose. As the THz region separates the more established domains of microwaves and optics, a typical THz technique will incorporate aspects of both realms, and may even draw on the best of both. The two bounding parts of the spectrum also yield distinct sets of methods of generating and detecting THz waves. These approaches can thus be categorised as having either microwave or optical/photonic origins.

As a result of breakthroughs in technology, the THz region is finally finding applications outside its traditional heartlands of remote sensing and radio astronomy. Extensive research has identified many attractive uses and has paved the technological path towards flexible and accessible THz systems. Examples of novel applications include medical and dental imaging, gene theory, communications and detecting the DNA sequence of virus and bacteria. The presentation will discuss the range of THz applications and will present the components and systems that are utilised for the frequency region.

Speaker: Peter de Maagt was born in Pauluspolder, The Netherlands, in 1964. He received the M.Sc. and Ph.D. degrees from Eindhoven University of Technol-

ogy, Eindhoven, The Netherlands, in 1988 and 1992, respectively, both in electrical engineering. In the period 1992/1993 he was station manager and scientist for an INTELSAT propagation project in Surabaya, Indonesia. He is currently with the European Space Research and Technology Centre (ESTEC), European Space Agency, Noordwijk, The Netherlands.

His research interests are in the area of millimetre and submillimetre-wave reflector and planar integrated antennas, quasioptics, electromagnetic bandgap antennas, and millimetre- and submillimetre-wave components. Dr. de Maagt was co-recipient of the H.A. Wheeler Award of the IEEE Antennas and Propagation Society for the best applications paper of 2001. He was granted a European Space Agency Award for innovation in 2002. He was co-recipient of the LAPC 2006 and IWAT 2007 best paper award. In 2008 he received as a co-recipient the H. A. Wheeler Award for the Best Applications Paper for a second time.

Dr. de Maagt is an active member of the IEEE, serving as an Associate Editor for the IEEE Transaction on Antennas and Propagation since 2005. Dr. de Maagt is currently also a Distinguished Lecturer for the IEEE APS and a member of the AP ADCOM. He is also a member of the IET (formerly IEE) Antenna and Propagation Professional Network Executive Team since 2002.



IEEE Joint Aerospace and
Electromagnetics Chapter

Business etiquette for women in engineering and computing science

Unsure of how to make yourself stand out during an interview?

Want to learn to be fully prepared in networking situations?

Uncertain on negotiating for salary and benefits at a job?

Then come join us in our work etiquette speaker panel designed for women in engineering and computing science! Learn tips to bring you from the interview stage to the workplace, including interview impressions and skills, effective communication, workplace protocol tips and much more from top experts Anja Lanz (Autopro Automation Consult-

ants), Helen Iosfin (Senior Project Manager, BC Hydro) and Rim N. Slim (Director, MDA). This is also a great opportunity to network with other amazing women from IEEE WIE, SFU WEG and SFU WICS. We will also have distinguished guests from BC Hydro and UBC in the audience

Friday 18 November

5:30 - 7:30 pm

SFU Harbour Center - Room 7000

515 West Hastings Street, Vancouver

Refreshments provided

This is an informal social gathering for students and professionals currently working in engineering and computing science fields.

All are welcome and attendance is free but please RSVP at: http://meetings.vtools.ieee.org/meeting_view/list_meeting/9201

Note that space is limited so please make sure of your availability before registration.

Be one of the first 40 to register to secure your spot.

The Panelists

Anja Lanz - Autopro Automation

Anja loves challenges and variety in her work environment. During her education, she worked in the following areas: hydrogen fuel cells, locomotives, automotive batteries, and human



robot interaction. After graduation, she was employed at Imasco Minerals Inc. as a project and research engineer developing new ways to produce expanded microspheres such as Perlite. Her recent position in the electrical engineering field is as a junior engineer with Autopro Automation Consultants where she designs systems using automation and controls. Anja is President, Women in Engineering (Vancouver region). Anja likes

travel, driving, history, professional development, yoga, and psychology. She holds a B.A.Sc. in engineering physics from the University of British Columbia.

Rim N. Slim - MDA

Rim N. Slim is currently director of Richmond services and human resources at MDA, a company she joined over 20 years ago as an intermediate-level software engineer. She is also



leading the competency management program to disseminate best practices and promote relevant skills development in operations management, engineering, business development, strategic development, procurement, human resources and IT, for the information systems division. A member of APEGBC, Ms. Slim has over 25 years experience in software engineering, technical training, project management, and operations management. She holds the

certificate in management from SFU, B.Eng. and master's degree in electrical engineering from Carleton University.

Helen Iosfin - BC Hydro

BC Hydro Sr. project manager responsible for number of large customer projects in Customer Care and Conservation group and has been with BC Hydro for over 12 years. In 1999 Helen joined



the company from H.A. Simons where she was working as a power system specialist. In 2003 she assumed management responsibilities for distribution planning and provided leadership in organizing and building a team of the new distribution planning department. From 2009 she worked as a director of distribution asset management. Helen has over 25 years experience in various aspects of Power Systems.

Helen actively represents BC Hydro on a number of industry committees including Edison Electric Institute (EEI) as executive member, the Energy Task Force in Whistler, and represents Canada in CIGRE (a forum for large electrical utilities). In addition Helen has published a number of technical papers. Helen is a professional engineer with a Master of Sc. electrical engineering degree.



Information

Women In Engineering

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