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- Bonding and grounding what, why and how?
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<section-header>

A range of programs and learning resources are available for working technology professionals, professors, teachers, and students:

Pre-University Education

University Education

Continuing Education

IEEE Educational Board Activities and Awards

IEEE-ETA Kappa NU --IEEE Honor Society





Sae Won Lee Simon Fraser University

Thursday 04 December 2-3 pm ASB9896 Simon Fraser University

Light refreshments served

Information **Electron Devices Chair** Bonnie Gray bgray@sfu.ca

Polymer MEMS self-assembly for on-chip millimeter-wave antennas

the millimeter-wave frequencies. This talk presents tics. a self-assembly technique using a polymer MEMS used to create out-of-plane on-chip antennas structures to achieve excellent radiation efficiency on low resistivity substrates. SU-8 negative photoresist is used as the only structural material and the resulting micro-scale. This presentation discusses on the plications.

The operating frequencies for wireless communica- development of the fabrication process for creating a tions have increased well beyond 60 GHz, and self-assembled monopole and helical antennas and on-chip antennas provide a better solution for low- the simulations and the measurements of the cost production and simpler system integration at monopole antenna's radiation pattern characteris-

fabrication process for making on-chip antennas Speaker: Sae-Won Lee received PhD in microelecwith high efficiency. The self-assembly technique is tronics from Simon Fraser University, Canada in 2012. He is currently a research associate in Communications Research Group of the School of Engineering Science at Simon Fraser University, working on development of 3D on-chip millimeterself-assembled curvatures are defined lithographi- wave high-gain antennas. His research interests cally allowing fabrication of uniquely shaped antenna focus on novel fabrication processes of MEMS and structures that were previously difficult to achieve in microfluidic devices for wireless and biomedical ap-

IEEE Electron Devices





Michel Meunier Polytechnique Montréal

Monday 08 December 3 pm Room P8445 Simon Fraser University

> Light refreshments served

Cosponsors: SFU Graduate School and Northern Telecom

Information **Electron Devices Chair** Bonnie Gray bgray@sfu.ca or Karen Kavanagh kavanagh@sfu.ca

Plasmonics and ultrafast laser for nanomedicine

clinically useful devices and approaches to the medical world. At Polytechnique Montreal, we develop biosensors, ultrafast laser nanosurgery and nanoprocessing techniques with the long term ob-Plasmonics nano-alloys for therapeutic tools in the clinic more details: hyperspectral bio-imaging: We report on a new size and composition-controlled synthesis of Speaker: Michel Meunier obtained his PhD in Mateising for chromatic labelling of biological materials imaging of cells tagged with these nano-alloys will be by ultrafast laser beam produces highly localised people and has published over 330 papers.

Nanomedicine is the branch of nanotechnology that processes on the nanoscale in the biological surdeals with bringing research biomedical tools and rounding medium, yielding to the nanosurgery of cells. These nanoparticles could be functionalised to target specific biological entities, thus performing and model new plasmonic nanostructured multiple targeted surgeries on the nanoscale. A complete physical model was developed to determine the basic mechanism underlying this new nanosurgery jective to introduce new technologies for process. Our laser multi-nanoscapel shows promnanomedecine applications, such as imaging, ises as an innovative tool for fundamental research in biodetection and therapy. After a brief introduction to biology and medicine as well as an efficient alternananoplasmonics, I will discuss two applications in tive nanosurgery technology that could be adapted to

monodispersed AuAg nano-alloy. These are prom- rials Science from MIT in 1984 and is Professor of Engineering Physics at Polytechnique Montréal since because of their composition-dependent plasmon 1986. He was awarded an NSERC Synergy Prize in resonance. Examples of hyperspectral 2D and 3D 2006 for his fruitful university-industry collaborations with LTRIM Technologies, a company he co-founded. presented. Plasmonics ultrafast laser multi- He is Fellow of SPIE, OSA and the Canadian Acadnanoscapel: Irradiating plasmonics nanostructures emy of Engineering. He has a research group of ~20

IEEE Electron Devices Society



IEEE Vancouver Young Professionals Affinity Group presents A Double Header



Thomas Ruth **BC** Cancer Research

Wednesday 03 December 6:00 - 7:30 pm

BCIT Burnaby SW1-3555

Medical imaging isotope crisis

With the shutdown of the Chalk River Nuclear Reac- search in the physical and biological sciences. He methods to produce these isotopes.

production and application of radioisotopes for re- reviewed papers and book chapters.

tor in 2016, almost half of the world's supply of has served on a multitude of national and interna-Medical Imaging Isotopes is going to disappear, tional committees, including the Institute of Medicine's causing a crisis in Medical Imaging! Dr. Ruth will talk Committee on Medical Isotopes (1995) and on the on the looming shortage of imaging isotopes and National Academy of Science's Committee on the State of the Science in Nuclear Medicine (2009), the panel for the Production of Medical Isotopes without Speaker: Thomas Ruth, PhD, is Emeritus Senior Highly Enriched Uranium (2010) and the Nuclear Research Scientist at TRIUMF and Emeritus Senior Physics Decadal Report 2010-2020. He serves as an Scientist at the British Columbia Cancer Research expert on radioisotope production for the IAEA. Most Centre. Dr. Ruth holds Adjunct Professorships in recently he served on the Subcommittee of the Nu-Chemistry at Simon Fraser University, Physics at clear Science Advisory Committee's Subcommittee the University of Victoria and Medicine at the Univer- on Isotopes for the Nuclear Physics Program of the sity of British Columbia. He is a leader in the US DOE. He has published more than 280 peer



Ahmed Hussein UNBC Wednesday

03 December 7:30-8:30pm

BCIT Burnaby SW1-3555

Dual fluid reactor

and safe shutdown of nuclear reactors.

The Dual Fluid Reactor (DFR), is a novel nuclear reactor concept based on the Generation IV Molten- Speaker: Dr. Ahmed Hussein, a co-inventor of DFR ment that the molten-salt fuel is not used as coolant Visitor Emeritus at TRIUMF in Vancouver.

The Fukushima Nuclear Reactor disaster has put but the heat is removed in a separate liquid-lead loop. Reactor Safety in the public eye. A cascading chain DFR has a negative fission rate temperature coeffiof failures caused by an earthquake generated cient; if the lead (coolant) circulation slows down, the tsunami has led to an increased focus on Reliability fission rate slows down as well. This prevents a runaway fusion reaction which may lead to core meltdown and radioactive discharge.

Salt Reactor (MSR) concept and the liquid-metal reactors, is a Professor Emeritus at the University of cooled reactors (SFR, LFR) with the major improve- Northern British Columbia (UNBC) and a Resident

IEEE members are asked to register for these events at http://vancouver.ieee.ca/ and registration for non-members is at the door at a cost of \$5.00 For more information please contact Rahul Khopkar rahul.khopkar@gmail.com



Ark Tsisserev, P.Eng. EFS Engineering Solutions Ltd.

Bonding and Grounding - What, Why and how?



Time & Date: 4:00 pm – 5:00 pm, Monday December 8th, 2014 **Location:** E 103, <u>Okanagan College</u>, 1000 KLO Rd., Kelowna, BC V1Y 4X8 (parking info.)

Talk Abstract: Understanding the objective of bonding of electrical equipment and methods of bonding. Difference between grounding of electrical equipment and grounding of electrical systems. Specific functions of bonding and grounding conductors. Particular requirements for grounding of High Voltage Installations. Issues of step and touch potential in HV installations. Fundamentals of understanding requirements for High Voltage station and station ground electrode. Principal difference between bonding, grounding and neutral conductors and their sizing.

Speaker Biography: Arkady Tsisserev is the President of the EFS Engineering Solutions Ltd, electrical and fire safety consulting company. Before joining the world of the electrical consulting business, Ark was the Electrical Safety Regulator for more than 25 years. Since 1993 he has held the position of the Electrical Safety Manager, Chief Electrical Inspector & City Electrician for the City of Vancouver. Before moving to the City of Vancouver he was Head of Electrical Section for the City of Winnipeg Inspections Department. Ark has written and published many articles, course notes, and taught various CE Code and fire alarm and emergency system courses at UBC, University of Manitoba and via other venues, such as industry associations and community colleges. Ark writes by-monthly columns for the "International Association of Electrical Inspectors News" and for "Electrical Line" journals. Ark is an active member of many industry associations and is involved in numerous technical committees with such organizations as CSA, NFPA, IEEE, ULC, SCC, SFPE and IEC. Mr. Tsisserev was for many years chairing the BC Electrical Code Adoption Committee. Ark is Chair of the CSA Technical Committee for the development of the CE Code and Chair of the CSA Strategic Steering Committee for the Requirements of Electrical Safety. He also actively participates in the ULC Technical Committee for the development of ULC S500 series standards. Ark represents the CSA on the NEC Technical Committee, and he chairs the Canadian National Committee on the IEC TC 64. Ark started his work in the electrical industry in 1962 as a construction electrician. Ark is a certified electrical inspector in the Province of BC and a member of various provincial engineering associations in Canada. He has obtained his PhD Degree in Electrical Engineering from the State University in Kharkov, Ukraine in 1972 and Master's Degree in Electrical Engineering from the University of Manitoba in 1984.

Refreshments will be provided. For further information please contact: Youry Khmelevsky (email: youry@ieee.org). Registration Page: <u>http://is.gd/dRCB8Q</u>



IEEE SPS / UBC ICICS Summer School on Signal Processing and Machine Learning for Big Data

Earlier this year, the IEEE SPS Van- In addition to the technical program, couver Chapter organized a Summer participants were also invited to a School on Signal Processing and social event - a visit to the Capilano Machine Learning for Big Data. The River Hatchery and the Stanley Park. School took place at the UBC Van- The event capitalized on the fantascouver campus between July 29th tic weather we have this time of year and August 1st, 2014. The School in Vancouver. Out-of-town guests featured 14 lecturers by prominent were especially impressed by the scholars in the field and attracted scenery and Vancouver's proximity about 100 attendees of which 77 to nature. were registered attendees.

in North America, Asia and Europe. Saeedi, and Ivan Bajic) would like to All lecture slides are posted on the thank all lecturers and participants School's website sites.google.com/site/ event.SpecialthanksgototheIEEE s3pbigdata2014/), and are freely ac- vancouver Section's multimedia cessible. Moreover, all lectures have team (Ron Heaps, Lead, Zulfiquar been recorded and are currently in Bhotto, and Victor Mateescu) and the process of being edited and student volunteers (Xun Chen, Joyce uploaded to SigView. Due to the high Chiang, Aiping Liu, Huan Qi, Hiba interest and registration count, the Shahid, Yue Sun, Yiming Zhang, School was financially successful. The feedback from attendees was the School would not have been highly positive.

The School organizers (Rabab Participants came from 6 countries Ward, Z. Jane Wang, Parvaneh (https:// for being a part of this memorable and Jiannan Zheng), without whom possible.









A BIG THANK YOU

IEEE Vancouver Kinect and Structure Sensor Hackathon

The IEEE Vancouver Joint Computing Chapter would like to thank **Microsoft** and **Occipital** for sponsoring our 28-hour Hackathon, which took place on November 8–9. Their group of engineers and support staff truly brought us a very successful unforgettable event. I would like to especially thank Microsoft's Ben Lower and David Torres; their hackathon expertise made for a worry-free, fun event. We would also like to thank IEEE member Rahul Khopkar for his suggestion and persistence in wanting a hackathon and IEEE Vancouver Past Chair Alon Newton for connecting the various groups. Thank you, **Michelle Cavallo**, BCIT Events Coordinator, for her help and **Chris Koroneos** (and his team) at BCIT Food Services for providing good food. Thank you, **Shebia Leung** and **Dean Hildebrand**, BCIT School of Computing for support and gifts. Special thanks to IEEE Member **Thomas Au** for volunteering.

With sincerest gratitude,

S. Makonin

Dr. Stephen Makonin, Chapter Chair.

An important message from the IEEE Vancouver 2015 Nomination Committee

The lists below represent candidates for Section officers and Chapter chairs for IEEE Vancouver 2015 as recommended by the IEEE Vancouver 2014 Executive. Except for the chair of the Consultant Network affinity group no other position is being contested. We will hold an election for the CN chair. If you wish to become a member of the CN affinity group and have not done so, please email the current chair jbmckay@telus.net and myself, anewton@ieee.org, before the end of this month. Remember you must be an IEEE member in good standing in order to hold office and to vote. Thank you for your membership and please consider volunteering in 2015. Have a happy and successful new year everyone! *Alon Newton P.Eng smIEEE, IEEE Vancouver Past Chair & 2015 Election Committee Chair*

Bob Gill Chair Vancouver Ophir Kendler Treasurer Vancouver Rama Vinnakota Secretary Vancouver Rama Vinnakota Secretary Vancouver Mathew Reid Chair Vancouver Mathew Reid Chair Northern BC Youry Khmelevsky Chair Northern BC Youry Khmelevsky Chair Okanagan Julian Cheng Vice Chair Okanagan Bonnie Gray Chair Engineering in Medicine and Biology EMB18 Boave Michelson Chair Engineering in Medicine and Biology EMB18 Bave Michelson Chair Joint Aerospace & Electromagnetics AES10/GRS29/RL07/PSE43/MT117/EMC27/AP03 Ahmed Hussein Chair Joint Aerospace & Electromagnetics MEG10/GRS29/RL07/PSE43/MT117/EMC27/AP03 Michael Hughes Vice Chair Joint Applied Physics M009/MAG33/NPS05/UFFC20 Michael Hughes Vice Chair Joint Circuits and Systems CAS04 P	Name	Office		Section/sub-section
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Pan Zhao Vice Chair Joint Control, Robotics, and Cybernetics CS23/RA24/SMC28 Ljiljana Trajkovic Vice Chair Joint Control, Robotics, and Cybernetics CS23/RA24/SMC28 Carlo Menon Vice Chair Joint Control, Robotics, and Cybernetics CS23/RA24/SMC28 Jeff Bloemink Chair Joint Control, Robotics, and Cybernetics CS23/RA24/SMC28 Jeff Bloemink Chair Joint Industry Applications and Electronics IE13/IA34 Pooya Taheri Vice Chair Joint Industry Applications and Electronics IE13/IA34 Darrell Koskinen Chair Joint Management TM14/PC26/E25/SIT30 Tristan Crees Chair Joint Power & Energy PE31/DE132 Dipendra Rai Chair Joint Power & Energy PE31/DE132 Shahriar Mirabbasi Chair Joint Solid State Circuits & Technology SSC37/CE08/CPMT21 Rasvan Mihai Chair Power Electronics PE135 Dan Petrulian Vice Chair Signal Processing SP01 Name Office Affinity group Life membership	Ryozo Nagamune	Chair	Joint Control, Robotics, and Cybernetics	CS23/RA24/SMC28
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Abhijit Sen Chair	Life membership
Parastoo Dehkordi Chair	
Sean Garrity Chair	



CCECE 2015

The 28th IEEE Canadian Conference on Electrical and Computer Engineering

> Technically Sponsored by IEEE Canada IEEE Canada Atlantic Section

May 3-6, 2015, Halifax, Nova Scotia Canada

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Call for Papers

Celebrating 30 Years of Ocean Frontiers

The 2015 IEEE Canadian Conference on Electrical and Computer Engineering (CCECE 2015) will be held in Halifax, Nova Scotia Canada, May 3-6, 2015, which offers a medium for researchers and practitioners to exchange and explore the issues and opportunities of electrical and computer engineering research and development from Canada and around the world. All papers accepted by CCECE 2015 will be indexed by **EI** and included in **IEEE Xplore**. Papers are invited, in French or English, for the following symposia.

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All submissions (including papers, proposals of invited sessions) should be completed via

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Nov. 15, 2014	Submission of full papers in PDF and organized session proposals
Dec. 1 , 2014	Submission of tutorial and workshop proposals
Jan. 15, 2015	Notification of paper acceptance
Feb. 28, 2015	Submission of final camera-ready papers

http://ewh.ieee.org/reg/ccece15/ or http://www.ccece2015.org

Watch for these upcoming events..!!

Youry Khmelevsky - Chair, Okanagan Sub-section has a couple of potential events on the table youry@ieee.org

- December, 2014 (date is not confirmed yet): Raghwa Gopal, Executive in Residence - Accelerate Okanagan: "Angel Investing for Technology Companies" (https://www.linkedin.com/in/ raghwagopal)
- We are still not sure we have just tentative confirmation for 5 pm on Friday, December 5th. GPN-Perf: Investigating performance of game private networks, WTFast and COSC, Okanagan College (including COSC 470 Capstone SE Project). NSERC CCI ARD Level 1 Grant (\$24,990). This talk is supported by the COSC Department, OC as well.