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## Another outstanding Vancouver social event!

The 2010 annual social was held on November 22 at the Playhouse Theatre in Vancouver. The event was attended by 70 people including: 35 IEEE members, 3 Life members, 10 IEEE student members and 22 non-member guests.

The evening started with a reception and welcome by Mazana Armstrong, IEEE Vancouver vice-chair, followed by a review of the section's recent achievements by Dave Michelson, section chair. The theatrical performance of the night, "Brief Encounter", complemented this relaxing and entertaining evening.

During the intermission, there were prize draws including flower arrangements and tickets to future Playhouse performances. We would like to thank everyone for attending the event and making it a memorable evening, and for taking their time to provide us with valuable feedback after the event.

**Check out the photos from the social!**

# IEEE Vancouver 2011 centennial gala and AGM

**Saturday 12 March 6 - 10 pm**  
Vancouver Convention Centre  
East Building - (with the sails)  
999 Canada Place

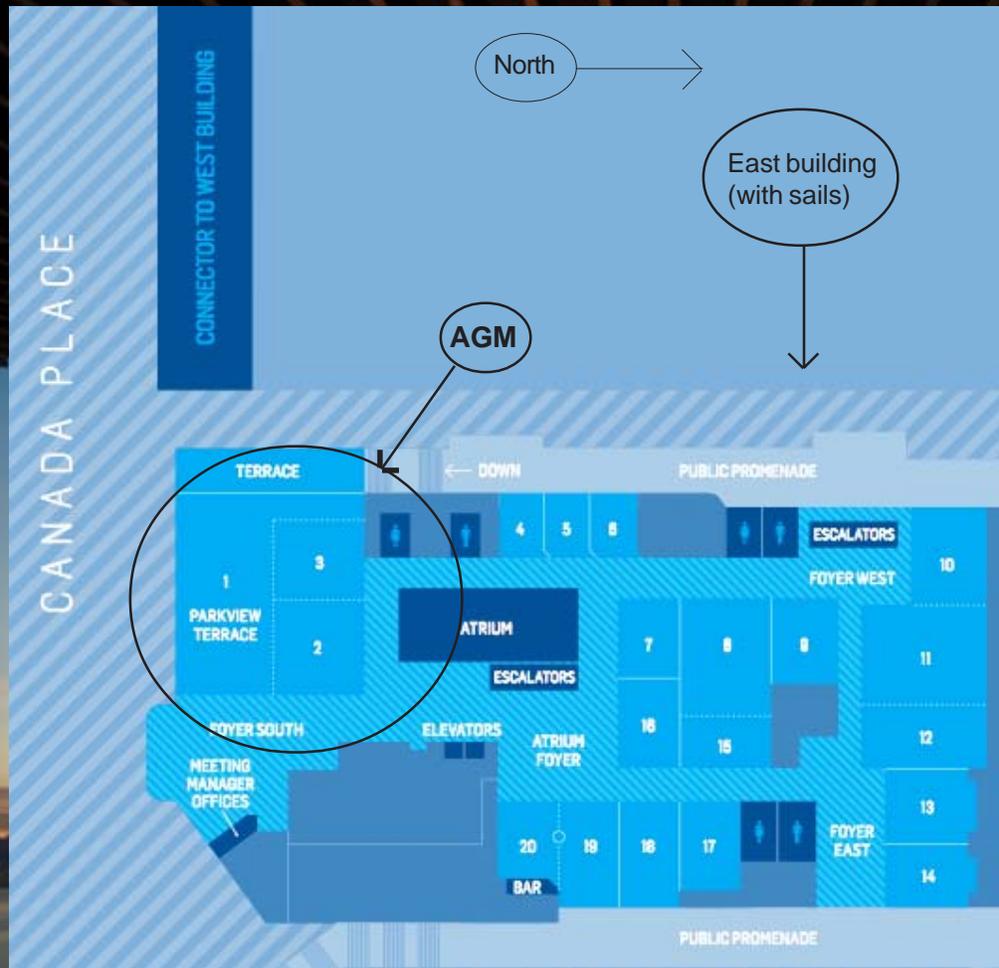
**Reception 6 pm**  
**Celebration events & dinner 7 pm**

2011 is the 100th year of IEEE Vancouver section's establishment. Please come and join us in celebrating a century of achievements dedicated to our IEEE members and volunteers. This celebration will be held in conjunction with the new annual general meeting (AGM) date in March. We have an exciting evening planned for our members and friends - a fabulous location overlooking Burrard Inlet, delicious food, and the opportunity to network with your friends and colleagues.

\$25 students and life members  
\$35 members \$45 non-members\*  
For more information or to register please email Kouros Goodarzi at [events-vancouver@ieee.org](mailto:events-vancouver@ieee.org). Please visit our blog at <http://vancouver.ieee.ca/blog> for the latest news on registration and event details.

\*Only one non-member per attending member

For registration, please visit [http://meetings.vtools.ieee.org/meeting\\_view/list\\_meeting/4825](http://meetings.vtools.ieee.org/meeting_view/list_meeting/4825)



Hosts  
Brian Moghadam and  
Glen Tang

## Powerex trade floor tour

A short introductory presentation about the company will be given by Powerex's Business Development Manager, Brian Moghadam, followed by a walkthrough tour of the trade floor. Powerex is the energy marketing arm of BC Hydro. In business since 1988, it buys and sells electricity, electricity products, natural gas and green energy products throughout North America. Powerex is the largest physical marketer of electricity in Western North America.

Powerex Corp  
666 Burrard Street  
(across from Burrard  
Skytrain Station)

**Hosts:** Brian Moghadam is Powerex's business development manager. His broad responsibilities include the development of new trade partners, products, services and markets for Powerex, on the natural gas, electricity side of the business and with renewable energy products. Brian also has a strategic role within Powerex and is a frequent speaker at conferences across North America. Brian's speaking engagements have been around green power development and markets; electricity supply and demand assessments and forecasts in the West; natural gas market drivers, including pricing, supply and demand assessments; liquefied natural gas (LNG) fundamentals and opportunities in North America; and carbon/emission markets.

Commission, BC Utilities Commission, Ontario Energy Board and the US Federal Energy Regulatory Commission.

RSVP is required for this event. Priority will be given to PES and IEEE members if the number of registrants exceeds spaces available.



Power & Energy Society®

### Information

To RSVP or for more info  
Power and Energy Chair  
Glen Tang  
glen.tang@powerex.com

Having been employed in the energy industry since 1981, Brian joined Powerex in 1996 after a long career in Calgary working for Gulf Canada in downstream petroleum marketing, Petro-Canada in natural gas marketing and regulatory affairs, and TransCanada PipeLines. Brian has testified or appeared before Canada's National Energy Board, California Public Utilities Commission, Oregon Public Utilities Commission, Washington Utilities and Transportation

Glen Tang graduated from the Universities of Calgary and Toronto with a Bachelor and Master's Degree in Electrical Engineering respectively. He has previously worked for General Dynamics Canada, ABB Switzerland (Corporate Research), UBC, and BC Hydro. At BC Hydro, his work included the technical and cost evaluation of customer and IPP Interconnections, configuring new and existing substations, annual capital planning, and the evaluation of new technologies.

Glen is presently employed at Powerex where his responsibilities include pricing custom energy deals, modeling renewables integration & services, and the valuation of generation and transmission assets. He is a registered Professional Engineer in BC and has been the Chapter Chair of the IEEE Power & Energy Society in Vancouver since 2008, having previously served as the Vice-Chair. Glen was the GOLD Representative on the PES Governing Board in 2008-2009.



## Introduction to FTTx receivers front end design

This donated presentation was not funded nor published before. It is based upon previous work of Avi Brilliant that is presented in his book Digital and Analog Fiber Optic Communications for CATV and FTTx Applications. A SPIE ISBN: 9780819467577 John Wiley and Sons ISBN: 978-0-470-26276-4 Publication Book Companies In this very technical presentation we will cover the basic considerations which a design engineer needs to take into account to design a fiber to the home front end. *It is highly recommended to search and learn a little bit more about the subject before attending in order to be able to gain the maximum benefit from this event.*

Presented by Alon Newton on behalf of Avigdor Brilliant.

Avigdor Brilliant is a Senior Staff Engineer in Qualcomm Israel. He is involved with wireless video IC architecture and system design for LTE, DVB-H / DVB-T / T-DMB ISDB-T / FLO standards. Prior joining Qualcomm he served as a Senior Technical Contributor in Marvell – DSPC previously Intel – DSPC in Petach Tikva Israel, where he was involved with advanced architectures of CMOS RFICs solutions for cellular applications for 2.5G and 3G.

During his role in DSPC Mr. Brilliant was involved with PMIC (power management integrated circuit) architectures as well. During 1999–2005 he was with LuminentOIC (today Source – Photonics) a subsidiary company of MRV Communications in Chatsworth CA USA. During this time he was the senior FTTx RF architect in LuminentOIC. He established a strong RF and FTTx team and was leading the mixed-signal and analog RF group. Mr. Brilliant was the designer and architect of LuminentOIC integrated triplexer (ITR) and the ITC solution for higher RF power to the curb, bringing it from concept to mass production. This product was elected by Verizon in their largest FTTx deployment in the USA with Tell – Labs and AFC and was elected by Motorola as well. He also helped to drive LuminentOIC to ISO process.

Prior joining MRV, during 1995–1999, Mr. Brilliant was with Optomic Microwaves (Belcom today) in Migdal Ha'Emek Israel in a position of a senior engineer in the fields of VSAT and cellular design and was in the management staff and was in the advisory board of Belcom. During 1993–1995 Mr. Brilliant was with MTI Technology and Engineering at Tel-Aviv in a position of system engineer where he was involved with WLL (wireless local loop) designs as well as COMINT and ELINT systems. Between 1986 – 1993 he was with MicroKim LTD Haifa Israel (previously a subsidiary of M/A-COM) where he was in charge of the MIC amplifies group, member of the frequency sources group and was the head of the Short Range Hunter RPV (remote platform vehicle) C – Band up down link program for the US NAVY Air Arm.

Mr. Brilliant received his Electrical Engineering degree from the Technion Israel Institute of Technology in 1986. He is a Senior Member of the IEEE and published several papers on related subjects and has 7 patents.

He is also an adjacent instructor in the Electrical Engineering Department Communication Laboratory of the Technion. Avigdor Brilliant was born in Haifa Israel in 1960.



Avigdor Brilliant  
Qualcomm Israel

Monday 21 February  
7:00pm - 9:00pm

BCIT Burnaby campus  
SW3-1750

### Information

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



## Developing your leadership brand



Tara Cree  
Knightsbridge

Wednesday 23 February  
7 pm – 9 pm

SFU Harbour Centre  
Room 7000  
515 West Hastings St  
Downtown Vancouver

### Information

Women In Engineering  
chair

Zahra Ahmadian  
zahraa@ece.ubc.ca  
or

Technology Management  
chair

Kouros Goodarzi  
krs@ieee.org

Your leadership brand is what you are known for - your reputation, your strengths, your principles - what distinguishes you from others. By deliberately creating a brand that represents what you want to be known for, you don't have to live with a brand that others have developed for you.

In this session, you will learn about the importance of branding to your success as a professional and as a leader and how to begin the process of defining your own leadership brand.

**Speaker:** Dr. Tara Cree is a Principal and National Capability Lead for Coaching with Knightsbridge Human Capital in Vancouver. Prior to joining Knightsbridge, she held senior consultant positions with a multi-national leadership development firm and two multi-national human resource consulting firms; and was the Executive Director of small consulting group. During this time she partnered with leaders at all organizational levels across many business sectors including financial services, pharmaceutical,

professional services, retail, healthcare, government, and utilities.

Tara combines her Ph.D. in Organizational Psychology with her background as a leadership specialist and organizational development advisor to consult with public and private sector clients on strategic leadership issues. She has identified and developed leadership talent at all levels – from emerging leaders to executives.

Tara is an experienced executive coach, team facilitator, and consultant. She has designed and delivered numerous leadership development programs that include group sessions and one-on-one coaching. The major focuses of Tara's work are helping leaders to develop their potential, building senior leadership teams, and constructing corporate leadership development programs. Tara received her M.A. and Ph.D. in Industrial-Organizational Psychology from the University of Guelph (Ontario) where she focused her research on organizational change. She has also completed the Core Essentials Graduate of Coach U.





## **24th Canadian Conference on Electrical and Computer Engineering**

May 8-11, 2011 – Niagara Falls, Ontario

### **Workshop on Commercialization of Wireless Technology**

Organized by the IEEE Canada Ad Hoc Committee on Wireless Technology

Commercialization has been defined as everything a firm does that transforms knowledge and technology into new goods, processes or services to satisfy market demands. In recent years, governments around the world have devoted considerable effort to identifying the barriers to successful commercialization and to implementing programs that will increase both the rate and success of commercialization in their respective jurisdictions. Such efforts are ultimately intended to increase: 1) the number of high quality jobs available to its citizens, 2) the return on the government's current investment in research and development, 3) the tax revenue that funds the fundamental research that leads to further innovation, 4) the quality of life of its citizens.

This workshop will allow commercialization experts to share recent progress in advancing the commercialization of wireless technology by wireless startup companies and small and medium enterprises (SMEs) in Canada with members of the wireless research community. Topics of interest include, but are not limited to: 1) efforts by the federal government, such as the National Research Council's Industrial Research Assistance Program (NRC-IRAP) and various programs conducted by the Department of Foreign Affairs and International Trade (DFAIT), 2) the efforts of provincial and municipal governments and regional commercialization accelerators such as Wavefront, Communitech, and Prompt-Quebec, 3) recent success stories amongst the startups and SMEs themselves and 4) aspects of university-industry relations relevant to wireless commercialization.

Authors who wish to present at the workshop should submit a manuscript in IEEE conference format to the workshop co-chairs for review by the workshop program committee. Prospective authors are encouraged to contact the workshop co-chairs in advance and indicate their intention to submit a manuscript.

Standard conference registration at IEEE CCECE 2011 allows up to four pages to be included in the manuscript. Up to two additional pages may be included with a surcharge of \$50.00 per page.

#### **Deadlines and Important Dates**

Submission of Papers for Review	Friday, February 25, 2011
Notification of Acceptance (by email)	Wednesday, March 2, 2011
Author's Registration Deadline	Friday March 4, 2011
Final Paper Submission Deadline	Friday March 18, 2011
Copyright Form Submission Deadline	Friday March 18, 2011
Advance Registration Deadline	Friday April 1, 2011

For more information, please contact the Workshop Co-Chairs,  
Prof. Dave Michelson, [davem@ece.ubc.ca](mailto:davem@ece.ubc.ca)  
Brad Lowe, [brad.lowe@wavefrontac.com](mailto:brad.lowe@wavefrontac.com)

18 Nov 2010



## IEEE Vancouver - 2011

Chair .....	Mazana Armstrong	Mazana.Armstrong@ieee.org
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Secretary .....	Steven McClain	StevenMcClain@ieee.org
Past chair .....	Dave Michelson	dmichelson@ieee.org
Northern BC (subsection chair) .....	Jernej Polajnar	jernej.polajnar@gmail.com
Okanagan (subsection chair) .....	Andrew Labun	alabun@netlistphysics.com

### Chapters

Joint Aerospace & Electromagnetics .....	Dave Michelson	dmichelson@ieee.org
.....	Steven McClain	StevenMcClain@ieee.org
Joint Applied Physics .....	Ewart Blackmore	ewb@triumf.ca
.....	Michael Hughes	michael.hughes@honeywell.com
Circuits and Systems .....	Ljiljana Trajkovic	ljilja@cs.sfu.ca
Joint Communications .....	Alon Newton	anewton@ieee.org
Joint Computing .....	Sathish Gopalakrishnan	sathish@ece.ubc.ca
Joint Controls and Automation .....	Ryozo Nagamune	nagamune@interchange.ubc.ca
Electron Devices .....	Bonnie Gray	bgray@sfu.ca
Engineering in Medicine and Biology .....	Rob Rohling	rohling@ece.ubc.ca
Joint Industry Applications & Electronics .....	Jahangir Khan	jahangir.khan@powertechlabs.com
Joint Management .....	Kouros Goodarzi	krs@ieee.org
Oceanic Engineering .....	Tristan Crees	TCrees@Cellula.com
Joint Power and Energy .....	Glen Tang	Glen.Tang@powerex.com
Power Electronics .....	Rasvan Mihai	rasvanm@analyticssystem.com
Signal Processing .....	Jane Wang	zjanew@ece.ubc.ca
.....	Mehrdad Fatourehchi	mehrdadf@ece.ubc.ca
Joint Solid-State Circuits & Technologies .....	Shahriar Mirabbasi	shahriar@ece.ubc.ca

### Committees

Advertising .....	Gruja Blagojevic	grujab@ieee.org
Archivist .....	Fiorenza Albert-Howard	fiorenza@shaw.ca
Awards .....	Valentina Dabic	Valentina.Dabic@bchydro.com
Communications .....	Pieter Botman	p.botman@ieee.org
Conferences .....	Eugen Trandafir	trandi@telus.net
Contact editor .....	Nick Keenan	n.keenan@ieee.org
Continuing education ....	Nikola Stanchev	stanchev_n@ieee.org
GOLD .....	Andy Tsai	andytsai@ieee.org
History .....	Dave Michelson	dmichelson@ieee.org
Industry liaison .....	Dave Michelson	dmichelson@ieee.org
Life member .....	Shail Mahanti	smahanti@cobaltengineering.com
Membership .....	Jesse Malm	jmalm@ieee.org
Publicity .....	Gruja Blagojevic	grujab@ieee.org
Student activities .....	Meliha Selak	melihass@ieee.org
Web administration .....	Jesse Malm	jmalm@ieee.org
.....	Victor Tsang	victor.kc.tsang@ieee.org
Women in engineering .	Zahra Ahmadian	zahraa@ece.ubc.ca

### Student branches

Counsellor BCIT .....	Glenn Pellegrin	glenn_pellegrin@bcit.ca
Chair BCIT .....	Koji Otomo	koji.otomo@ieee.org
Vlce chair BCIT .....	Chad Watson	guitarzan.chad@gmail.com
Treasurer BCIT .....	Christan Beharrell	triden@gmail.com
Secretary BCIT .....	Masaru Ho	kei605@hotmail.co
Co-counsellor SFU .....	Glenn Chapman	glenncc@cs.sfu.ca
Co-counsellor SFU .....	Bonnie Gray	bgray@sfu.ca
Chair SFU .....	Duncan Chan	dchana@sfu.ca
Vice co-chair SFU .....	Steve Pierce	skp6@sfu.ca
Vice co-chair SFU .	Mohammad Akhlaghi	mohammad.sfu@gmail.com
Treasurer SFU .....	Laxmi Subedi	Isa38@sfu.ca
Webmaster SFU .....	Hadi Hadizadeh	hha54@sfu.ca
Counsellor UBC .....	Joseph Yan	josephy@ece.ubc.ca
Chair UBC .....	Frankie Angai	frankiea@ieee.org
Vlce chair UBC .....	Michelle Siu	mwksiu@ieee.org
Treasurer UBC .....	Samiul Islam	samiul@ieee.org
Secretary UBC .....	Harshul Srivastava	harshul@ieee.org
Counselor UBC-O .....	Jonathan Holzman	jonathan.holzman@ubc.ca
Chair UBC-O .....	Nima Farrokhsiar	morteza.farrokhsiar@ubc.ca
Vlce chair UBC-O .....	Emily Landry	emily.l.landry@gmail.com
Treasurer UBC-O .....	Andre Johnson	andre.johnson14@gmail.com
Secretary UBC-O .....	Erin Johnston	eejohnston@hotmail.com

### Joint chapter societies (IEEE official joint designations in italics)

#### Joint Aerospace and Electromagnetics Chapter

*Jt. Chapter AES-10/AP-03/GRS-29/EMC-27/MTT-17/PSE-43/RL-07*

- Aerospace and Electronic Systems • Antennas and Propagation
- Geoscience & Remote Sensing • Electromagnetic Compatibility • Micro-wave Theory & Techniques • Product Safety Engineering • Reliability Society

#### Joint Applied Physics Chapter

*Jt. Chapter IM-09/MAG-33/NPS-05/UFFC-20*

- Instrumentation and Measurement • Magnetics • Nuclear and Plasma Sciences • Ultrasonics, Ferroelectrics and Frequency Control

#### Joint Communications Chapter

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

- Broadcast Technologies • Communications • Information Theory • Intelligent Transportation • Photonics • Vehicular Technology

#### Joint Computing Chapter

*Jt. Chapter C-16/CIS-11*

- Computer • Computational Intelligence

#### Joint Controls and Automation Chapter

*Jt. Chapter CS-23/RA-24/SMC-28*

- Control System • Robotics and Automation • Systems, Man and Cybernetics

#### Joint Industry Applications and Electronics Chapter

*Jt. Chapter IAS-34/IE-13*

- Industry Applications • Industrial Electronics

#### Joint Management Chapter

*Jt. Chapter TMC-14/E-25/PC-26/SIT-30*

- Technology Management Council • Education • Professional Communication
- Society on Social Implications of Technology

#### Joint Power and Energy Chapter

*Jt. Chapter PE-31/DEI-32*

- Power and Energy • Dielectric and Insulation

#### Joint Solid-State Circuits & Technologies Chapter

*Jt. Chapter SSC-37/CPMT-21/CE-08*

- Solid-State Circuits • Components, Packaging and Manufacturing Technology
- Consumer Electronics



# IEEE Okanagan Subsection Presents

## Martin Mallinson

ESS Technology

## A Short Course on Analog Circuit Design



Session 1: February 25, 2011, Room ASC 130

Session 2: March 4, 2011, Room ASC 140

Session 3: March 11, 2011, Room ASC 140

Session 4: March 18, 2011, Room ASC 140

\*All sessions will be presented 3:30 pm – 5:00 pm on  
UBC Okanagan campus

### **Course Abstract:**

The general theme is to communicate the excitement of electronic design: hopefully some attendees will be moved to learn more. They will have the increased confidence of having seen how relatively easy it is to understand electronic devices when they have the ability to visualize the operation of the circuit. Each presentation will end with a 15-minute interactive question and answer session.

In the first presentation the focus is on creating the "mental model" of how electronic devices operate, largely ignoring detailed mathematics: that mathematics is secondary to an understanding of electronic systems, first comes the "picture" of how the circuit works. We will be able to appreciate simple logic gates easily, we will be able to show how a phase shift oscillator works without any analysis. It will be clear why CMOS Logic has come to dominate digital design. We will learn how to think about a semiconductor - what exactly is the magic of silicon? Using this hand-waving sense of how devices work will allow us to understand how the most common electronic amplifier works before we reach the end of the first 90 minutes.



The second presentation builds on the first and shows how the tools that the designer uses support the "mental model" of the device operation: why we talk of signals moving up and down, how the design engineer actually spends his or her day at work. We will do real, live design and simulation of some simple CMOS circuits and show what the problems are. We will briefly outline the remarkable "band gap" circuit and how it works. We will look at the ubiquitous "Gilbert Multiplier" and say a little of how designers such as Barrie Gilbert come up with such circuits. We will learn why some circuits are very profitable for companies, and talk a little about the business of electronics. We will speak about the breathtaking advances in electronic manufacturing over my working lifetime - where will it end? We will conclude the second session with a review of the "classic" circuits of electronics: op-amps, PLL's, radio receivers, ADCs and DACs.

The third session begins at a higher level: we have seen how to make elements such as amplifiers from basic FET devices, but a great deal of electronic innovation is at a level above this. What for example, is a Sigma Delta Modulator and why is it important? Where do ideas come from and why is innovation important? This third session is designed to stand on its own and although an integral part of the four sessions, it will be possible for a person interested in the art of innovation to attend just this presentation. We will learn how one of the most difficult aspects of design begins with a steam engine, what the grasshopper escapement has to teach us about electronic systems and why a clock and a bandgap diode are so similar. In this session we will look at a real example, designed right here in Kelowna: the HyperStream modulator and the "Sabre DAC" that uses it - a device that has come to dominate the high-end audio business world wide - what is it? How was it invented? As a part of this we will look at system simulation tools and learn to visualize systems in the frequency domain.

The fourth session returns to electronic devices in detail. How for example, shall we make an audio headphone driver with long battery life? We will look at Class D circuits and how they work with delta modulators, how to measure and optimize an op-amp for low power and low noise operation. Then we introduce the magic of innovation: can we "break the constraint" of this design? Where is innovation good and where is it bad? This session will run real simulations, perform real analysis of the noise, make optimizations and try to remind the designer to always ask exactly why a



certain trade-off is present in a circuit. We will end where we began: with our "mental model" of how circuits work we will look at the innovation of others: the Strongarm Comparator, the Cherry Hopper amplifier and a review of the AD797 - one of the world's best op-amps. Why is it so good? This final session ends with a short discussion of the engineering world that the younger attendees may choose to work in: quantum devices are coming - who will design these machines and what do they promise?

### **Instructor Biography:**

Martin Mallinson has been designing silicon chips for the past 30 years in the UK, EU, USA and now Canada. His chips control the engines of jet aircraft, take X-ray images in hospitals, search for underground oil, power the majority of DVD players, and are used in all the latest high end audio equipment. Martin has 47 patents in the USA and more worldwide. He now lives and works in Kelowna and will share his knowledge and methods of CMOS electronic design in a series of presentations designed to show how to think about electronics and design innovative, valuable solutions to real-world problems.