

May 20, 2010

Plenary II (Cheakamus) - Andre Ivanov, UBC, ivanov@ece.ubc.ca and Dan Gale, CMC Microsystems, gale@cmc.ca

8:00-8:30 Ali Hajimiri, hajimiri@caltech.edu, Caltech, The future of high-frequency integrated circuit design

8:35-9:05 Giovanni De Micheli, giovanni.demicheli@epfl.ch, EPFL, Nano-architectures for tera-scale systems

9:10-9:40 Thomas Webster, Thomas_Webster@brown.edu, Brown U, Nanovis, NanoRose, In situ nanotechnology-derived sensors for ensuring implant success

Session 3A– NanoBiotechnology (Sutcliffe A), Robert Sobot, rsobot@uwo.ca, UWO

10:00-10:20 Adam Woolley, awoolley@chem.byu.edu, BYU, DNA-templated nanofabrication for forming electrical circuit elements

10:25-10:45 Mirjam Leunissen, m.e.leunissen@nyu.edu, AMOLF & University of Cambridge, Steering the self-organization of small particles using DNA as a nano-Velcro

10:50-11:10 Steven S. Smith, ssmith@coh.org, NanoLab, Nanotechnology of Emerging Targeting Systems

11:15-11:35 Sandipan Pramanik, pramanik@ece.ualberta.ca, UofAlberta, Organic Nano-Spintronics

11:40-12:00 Shu-jen Han, sjhan@us.ibm.com, IBM, Biodetection using magnetic nanotechnology

12:05-12:25 Jae Sung Lee, jaes@snu.ac.kr, Seoul National University, Sun Il Kwon, Seong Jong Hong, Geiger-mode APD for PET/MRI development

Session 4A – NanoElectronics (Sutcliffe B), Konrad Walus, UBC, konradw@ece.ubc.ca and Kenneth Chau, UBC, Kenneth.Chau@ubc.ca

1:30-1:50 Raymond Laflamme, laflamme@iqc.ca, Institute for Quantum Computing, Recent progress in quantum computation

1:55-2:15 Jeremy Hilton, jphilton@dwavesys.com, D-Wave Systems, www.dwavesys.com, Integrated Multiple-Flux-Quantum Control Circuitry for Scalable Quantum Annealing rf-SQUID Qubits

2:20-2:40 Robert A. Wolkow, rwolkow@ualberta.ca, NINT, UofAlberta, A new beginning for QCA; Controlled Coupling and Occupation of Silicon Atomic Quantum Dots at Room Temperature

2:45-3:05 Pawel Hawrylak, Pawel.Hawrylak@nrc-cnrc.gc.ca, NRC, Semiconductor devices for quantum information processing

3:10-3:30 Gregory Snider, snider.7@nd.edu, U of Notre Dame, Minimum Energy for Computation: Facts and Fiction

3:50-4:10 Alberto Riminucci, a.riminucci@bo.ismn.cnr.it, ISMN-CNR Bologna Italy I. Bergenti, M. Prezioso, D.Brunel, P.Graziosi, A. V. Dediu, ISMN, Potential applications of organic spintronic devices

4:15-4:35 Igor Zutic, zigor@buffalo.edu, UBuffalo, Jaroslav Fabian, Igor Zutic, Hanan Dery, Silicon Spintronics?

4:40-5:00 Andrew Dzurak, a.dzurak@unsw.edu.au, UNSW, Single-Atom Nanoelectronics & Spin Qubits in Silicon

5:05-5:25 Julian Stangl, julian.stangl@jku.at, J.-Kepler University Linz, Quantum Dots: Fabrication and Characterization Techniques

Session 3B – Wireless (Sutcliffe B), Thomas Johnson, UBC, thomas.johnson@ubc.ca and Reza Mahmoudi, TU Eindhoven, R.Mahmoudi@tue.nl

10:00-10:20 John Long, j.r.long@tudelft.nl, TUDelft, Energy-efficient Concepts for Ultra Low Power Radio Front-ends

10:25-10:45 Aristeidis Karalis, aristos@MIT.EDU, MIT, Wireless Electricity for a world with less cords and batteries

10:50-11:10 Kathleen Philips, Kathleen.Philips@imec-nl.nl, IMEC-NL/Holst Centre, Impulse radio for ultra-low power communication

11:15-11:35 Howard Luong, eeluong@ee.ust.hk, Hong Kong University of Science and Technology, A Single-Chip 3.1GHz – 8.0GHz UWB Transceiver in 0.18-um CMOS Process

11:40-12:00 David Barras, david.barras@ife.ee.ethz.ch, ETHZ, CMOS circuits for carrier-based IR-UWB transceivers

12:05-12:25 Takahide Terada, takahide.terada.kx@hitachi.com, Hitachi, Intermittent Operation Control Scheme for Reducing Power Consumption of UWB-IR Receiver

Session 4B – Wireless (Sutcliffe B), Reza Mahmoudi, TU Eindhoven, R.Mahmoudi@tue.nl and Terry Lee, terry@trl-microwave.com

1:30-1:50 Huei Wang, hueiwang@ntu.edu.tw, NTU, Current Status and Future Trends for Si and Compound MMICs in Millimeter-wave Regime and Related Issues for System on Chip (SOC) and/or System in Package (SIP) Applications

1:55-2:15 Paul van Zeijl, Paul.van.Zeijl@philips.com, Philips Research, Towards medium range 60GHz imaging radar in Bulk CMOS 65nm

2:20-2:40 Ahmad Mirzaei, ahmadm@broadcom.com, Hooman Darabi, Broadcom, RF Passive Mixers

2:45-3:05 Adil Kidwai, adil.a.kidwai@intel.com, Intel, Integration Challenges in Single Chip Radios

3:10-3:30 Woogeun Rhee, wrhee@tsinghua.edu.cn, Tsinghua U, Fractional-N PLLs for Wireline and Wireless

3:50-4:10 Antoine Frappé, antoine.frappe@isen.fr, ISEN, All-Digital RF Signal Generation

4:15-4:35 Robert Wiser, rwiser@sibeam.com, SiBeam, Bandpass RF Filters using Multiple Q-Enhanced Resonators

4:40-5:00 Jeffrey S Walling, nojade@u.washington.edu, David J. Allstot, UWashington, Leveraging Multiple Power Supplies to Improve Average Efficiency: Class-G Amplifiers

5:05-5:25 Thomas Johnson, thomas.johnson@ubc.ca, UBC, Comparison of synchronous and asynchronous sigma-delta modulation techniques for RF switch-mode amplifiers

Session 3C – Nano-Technology (Diamond Head), Shahria Alam, UBC, shahria.alam@ubc.ca and Mani Soma, manisoma@u.washington.edu, U of Washington

10:00-10:20 Karen Kavanagh, kavanagh@sfu.ca, SFU, Structural and Electrical Analysis of Nanostructures

10:25-10:45 Shraddha Avasthy, Gajendra Shekhawat, g-shekhawat@northwestern.edu, and Vinayak David, Northwestern University, Nanoscale Sub-surface Metrology using Ultrasound Holography for imaging buried defects in Advanced Interconnects and Semiconductor Devices

10:50-11:10 Cengiz S. Ozkan, cozkan@engr.ucr.edu, UCR, Chemical vapor deposition of graphene for nanoelectronics

11:15-11:35 Shalini Prasad, Shalini.Prasad.1@asu.edu, ASU, Nanostructured electrochemical devices and their applications in healthcare

11:40-12:00 MP Anantram, anant@ee.washington.edu, **U Washington**, Modeling the electromechanical response of silicon nanowires

12:05-12:25 Pinaki Mazumder, mazum@eecs.umich.edu, **UMichigan**, Plasmonics for VLSI interconnect technologies

12:30-12:50 Jurriaan Schmitz, J.Schmitz@utwente.nl, **UTwente**, New technologies on top of CMOS - from single photon detection to plasmon generation

Session 4C – Microelectronics (Diamond Head), Shahria Alam, UBC, shahria.alam@ubc.ca

1:30-1:50 Paul D. Franzon, paulf@ncsu.edu, **NCSU**, Creating 3D specific systems

1:55-2:15 Ron Gutmann, rgutmann@ecse.rpi.edu, **RPI**, Wafer-Level 3D Integration: Technology, Platforms, and Applications

2:20-2:40 Mariam Sadaka, msadaka@soitecusa.com, **Soitec**, Building Blocks for Wafer Level 3D Integration

2:45-3:05 Jim Vinson, JVINSON@intersil.com, **Intersil**, Electrical Overstress: The Nemesis of Semiconductor Devices

3:10-3:30 Alan Mantooth, mantooth@uark.edu, **UArkansas**, Analog & Mixed-Signal IC Design for Extreme Environments

3:50-4:10 Tetsuya Hirose, hirose@eedept.kobe-u.ac.jp, **Kobe U**, Reference Circuit Design for Nano-Power Subthreshold CMOS LSIs

4:15-4:35 JB Kuang, kuang@us.ibm.com, Fadi H Gebara, **IBM**, Understanding and Characterizing Process Variation Through the Use of On-Chip Monitoring Circuits

4:40-5:00 Bipul C. Paul, bpaul@tari.toshiba.com, **Toshiba**, ROM based Logic Design: A Low Power Design Perspective

Session 3D – Memories (Black Tusk), Chong Ong, chong.ong@intel.com, Intel and Mohammed Ismail, ismail@ece.osu.edu, Ohio State U

10:00-10:20 Toshiaki Kirihaata, kirihaata@us.ibm.com, **IBM**, Embedded Dynamic Random Access Memory: Power7™ L3 Cache and Beyond

10:25-10:45 Ken Lee, kanghol@qualcomm.com, **Qualcomm**, 45 nm embedded STT-MRAM as a complete SOC memory solution

10:50-11:10 Santosh Kurinec, skkemc@rit.edu, Sankha Mukherjee and Archana Devasia, **RIT**, Nanoscale Materials Engineering for Phase Change and Magnetoresistive Nonvolatile Memory

11:15-11:35 Kenneth Goodson, goodson@stanford.edu, **Stanford U**, Electrothermal phenomena in phase change memory (PCRAM)

11:40-12:00 Michael Kozicki, michael.kozicki@asu.edu, **Arizona State University**, Nanoionics and the road to low energy memory

12:05-12:25 Albert Chin, albert_achin@hotmail.com, **NCTU**, Novel Ultra-Low Energy High-Speed Non-Volatile Memory with Good Retention and Endurance

Session 4D – Sensors (Black Tusk), Fabrice Retiere, Triumph, retiere@triumf.ca

1:30-1:50 Jan Iwanczyk, jan.iwanczyk@dxray.com, **DxRay**, E. Nygård, W.C. Barber, N.E. Hartsough, N. Malakhov, and J.C. Wessel, High Count-Rate Energy Dispersive CdTe and CZT Detector Arrays for X-ray Imaging Applications

1:55-2:15 Gian-Franco Dalla Betta, dallabe@disi.unitn.it, **Università degli Studi di Trento**, Development of modified 3D sensor technologies for HEP experiments

2:20-2:40 Hadong Kim, HKim@rmdinc.com, **RMD Inc.**, Developing Larger TIBr Detectors-Detector Performance

2:45-3:05 Rebecca Nikolic, nikolic1@llnl.gov, **Lawrence Livermore National Lab**, Si Based Pillar Structured Thermal Neutron Detectors

3:10-3:30 Feruz Ganikhanov, Feruz.Ganikhanov@mail.wvu.edu, **West Virginia University**, Integrated nonlinear optical system for sensing and imaging

3:50-4:10 Marco Battaglia, MBattaglia@lbl.gov, **UCSC and LBNL**, Pixel Detectors in Silicon-On-Insulator Technology for Application in Accelerator Particle Physics and Imaging

4:15-4:35 Woon-Seng Choong, WSChoong@lbl.gov, **LBL**, The role of solid-state photodetectors in radionuclide imaging

4:40-5:00 Jim Christian, **RMD**, JChristian@rmdinc.com, C.J. Stapels, X.J. Chen, S. Mukhopadhyay, E. Chapman, G. Alberghini, K. Shah, P. Dokhale, M. McClish, and F.L. Augustine, CMOS Solid-State Photomultipliers and Applications

5:05-5:25 Keiichi Ogasawara, kogasawara@swri.org, S. Livi, M.A. Dayeh, F. Allegrini, M.I. Desai, and D.J. McComas, **Southwest Research Institute**, Avalanche photodiode arrays enable medium-energy particle detection

Session 3E—Circuits (Cheakamus), Olivier Trescases, ot@ele.utoronto.ca, **U of Toronto and Kazuya Masu**, **Tokyo Institute of Technology**, masu.k.aa@m.titech.ac.jp

10:00-10:20 Tor Sverre Lande, bassen@ifi.uio.no, **University of Oslo**, Exploring CMOS beyond digital

10:25-10:45 Bradley Minch, bradley.minch@gmail.com, **Olin**, Static and Dynamic Translinear Circuits

10:50-11:10 Maria Kurchuk, maria@cisl.columbia.edu, Yannis Tsvividis, **Columbia U**, Digital signal processing in continuous time

11:15-11:35 Yusuf Leblebici, yusuf.leblebici@epfl.ch, **EPFL**, Subthreshold Source-Coupled Circuit Design for Ultra-Low-Power Applications

11:40-12:00 Hanh-Phuc Le, phucl@eecs.berkeley.edu, Seth Sanders, Elad Alon, **Berkeley**, Fully-Integrated Voltage Conversion for High Performance Digital ICs

12:05-12:25 Wai Tung Ng, ngwt@vrg.utoronto.ca, **U of Toronto**, Smart Power ICs

Session 4E – Circuits (Cheakamus), Kazuya Masu, **Tokyo Institute of Technology**, masu.k.aa@m.titech.ac.jp and **Olivier Trescases**, ot@ele.utoronto.ca, **U of Toronto**

1:30-1:50 Jared Zerbe, jared@rambus.com, **Rambus**, Wireline Equalization & High-Speed Transceiver Design

1:55-2:15 Alexander Huber, alex.huber@fhnw.ch, **FHNW**, 40 Gb/s Quarter Rate CDR with Data Rate Selection

2:20-2:40 Tony Chan Carusone, tcc@eecg.toronto.edu, **U of Toronto**, Injection-Locking for High-speed Wireline Communication

2:45-3:05 Yasuo Hidaka, yasuo.hidaka@us.fujitsu.com, **Fujitsu**, Sign-based-Zero-Forcing Adaptive Equalizer Control

3:10-3:30 Koji Fukuda, koji.fukuda.jf@hitachi.com, **Hitachi**, Low-power chip-to-chip interconnection for 100Gb Ethernet and portable devices: 12.3-mW 12.5-Gb/s Transceiver for 10-inch PCB trace in 65-nm CMOS

3:50-4:10 Rajit Manohar, rajit@csl.cornell.edu, **Cornell U**, FPGAs operating at GHz speed

4:15-4:35 Sana Rezgui, Sana.Rezgui@actel.com, **Actel**, RT ProASIC3: The Low-Power, Non-Volatile, Re-programmable and Radiation-Tolerant Flash-based FPGA

4:40-5:00 Milosz Sroka, milosz.sroka@toshiba.co.jp, **Toshiba**, A Power, Performance Scalable Multi-Core Media Processor for Mobile Multimedia Applications