Proceedings of 2010 IEEE International Symposium on Circuits and Systems

(ISCAS 2010)

Paris, France
30 May-2 June 2010

Pages 1-736

IEEE Catalog Number: CFP10ISC-PRT
ISBN: 978-1-4244-5308-5

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Time: Monday, May 31, 2010, 9:30 - 11:00
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A6P-R Continuous-Time Signal Processing (Poster)

Time: Monday, May 31, 2010, 11:20 - 12:50
Place: Times Square 2
Chair(s): Albert Wang, *University of California, Riverside*

A6P-S Amplifiers, Filters & Sensor Interfaces (Poster)

Time: Monday, May 31, 2010, 11:20 - 12:50
Place: Times Square 3
Chair(s): Maysam Ghovanloo, *Georgia Institute of Technology*

A6P-T Analog Techniques (Poster)

Time: Monday, May 31, 2010, 11:20 - 12:50
Place: Times Square 4
Chair(s): Shahriar Mirabbasi, *University of British Columbia*

A6P-U Nonlinear Oscillators & PLL II (Poster)

Time: Monday, May 31, 2010, 11:20 - 12:50
Place: Times Square 5
Chair(s): Zeljko Ignjatovic, *University of Rochester*

A6P-V Nonlinear Circuits & Systems IV (Poster)

Time: Monday, May 31, 2010, 11:20 - 12:50
Place: Times Square 6
Chair(s): Toshinori Yamada, *Saitama University*

A6P-W Nonlinear Circuits & Systems III (Poster)

Time: Monday, May 31, 2010, 11:20 - 12:50
Place: Times Square 7
Chair(s): Henry Leung, *University of Calgary*
Yoshifumi Nishio, *Tokushima University*

A6P-X Signal Analysis & Systems for Health Care Applications (Poster)

Time: Monday, May 31, 2010, 11:20 - 12:50
Place: Times Square 8
Chair(s): Joseph Chang, *Nanyang Technological University*
Pau-Choo Chung, *National Cheng Kung University*

A7P-Q Live Demonstrations of Circuits & Systems I (Poster)

Time: Monday, May 31, 2010, 14:10 - 17:30
Place: Times Square 1
Chair(s): Tobi Delbruck, *ETH Zürich*

A7P-R Live Demonstrations of Circuits & Systems II (Poster)

Time: Monday, May 31, 2010, 14:10 - 17:30
Place: Times Square 2
Chair(s): Tobi Delbruck, *ETH Zürich*

Tuesday, June 1, 2010

B1L-A SPECIAL SESSION: Emerging Technologies for Giga-Scale FPGA Applications (Lecture)

Time: Tuesday, June 1, 2010, 9:30 - 11:00
Place: Grand Ballroom E
Chair(s): Wei Wang, *University at Albany, State University of New York*
Hai-Gang Yang, *Chinese Academy of Sciences*

B1L-B Successive Approximation ADCs (Lecture)

Time: Tuesday, June 1, 2010, 9:30 - 11:00
Place: Grand Ballroom F
Chair(s): Randall Geiger, *Iowa State University*

B1L-C Ultra-Low Power VLSI Design (Lecture)

Time: Tuesday, June 1, 2010, 9:30 - 11:00
Place: Grand Ballroom G
Chair(s): Gwee Bah Hwee, *Nanyang Technological University*
Vasily Moshnyaga, *Fukuoka University*

B1L-D Wireless Communications Systems I (Lecture)

Time: Tuesday, June 1, 2010, 9:30 - 11:00
Place: Grand Ballroom H
Chair(s): Tzi-Dar Chiueh, *National Taiwan University*

B1L-E Biosensors & Devices in Life & Health Science (Lecture)

Time: Tuesday, June 1, 2010, 9:30 - 11:00
Place: Salon A
Chair(s): Jie Chen, *University of Alberta*
Koc Ut-Va, *Bell Labs, Lucent Technologies*

B1L-F Nonlinear Circuits & Systems I (Lecture)

Time: Tuesday, June 1, 2010, 9:30 - 11:00
Place: Salon B
Chair(s): Paolo Maffezzoni, *Politecnico di Milano*
Augusto Montisci, *University of Cagliari*

B1L-J VLSI Testing & Thermal Issues (Lecture)

Time: Tuesday, June 1, 2010, 9:30 - 11:00
Place: Salon J
Chair(s): Mohammed Y. Niamat, *University of Toledo*
Lars Wanhammar, *Linköping University*

B1L-K Discrete Transforms & Wavelets (Lecture)

Time: Tuesday, June 1, 2010, 9:30 - 11:00
Place: Salon K
Chair(s): M. Omair Ahmad, *Concordia University*
Rabinder N. Madan, *Office of Naval Research*

9:30
B1L-K.1 **Structurally Regular Integer Discrete Cosine Transform for Low-Bit-Word-Length Coefficients** 1607
Taizo Suzuki, *Keio University;* Masaaki Ikehara, *Keio University*

9:48
B1L-K.2 **Modified Discrete Fourier Transforms for Fast Convolution and Adaptive Filtering** 1611
C. Radhakrishnan, *Pennsylvania State University;* W.K. Jenkins, *Pennsylvania State University*

10:06
B1L-K.3 **A Novel Approach for FFT Data Reordering** 1615
Marwan A. Jaber, *Université du Québec à Trois-Rivières;*
Daniel Massicotte, *Université du Québec à Trois-Rivières*

10:24
B1L-K.4 **On Hilbert-Pairs from Non-Minimum Phase Daubechies Filters** 1619
David B.H. Tay, *LaTrobe University;* Jingxin Zhang, *Monash University*

10:42
B1L-K.5 **Comparison of Haar Wavelet-Based and Poisson-Based Numerical Integration Techniques** 1623
Peter J. Hampton, *University of Victoria;* Pan Agathoklis, *University of Victoria*

B1L-L Wireless Receiver Circuits (Lecture)

Time: Tuesday, June 1, 2010, 9:30 - 11:00
Place: Salon L
Chair(s): Hassan Aboushady, *University of Paris VI, Pierre & Marie Curie*
James Haslett, *University of Calgary*

9:30
B1L-L.1 **A 2.4 GHz Reference-Less Wireless Receiver for 1Mbps QPSK Demodulation** 1627
Wei-Zen Chen, *National Chiao Tung University;* Wei-Wen Ou, *National Chiao Tung University;*
Tai-You Lu, *National Chiao Tung University;* Shun-Tien Chou, *National Chiao Tung University;*
Song-Yu Yang, *National Chiao Tung University*

9:48
B1L-L.2 **A 2.2mW CMOS LNA for 6-8.5GHz UWB Receivers** 1631
Chang-Ching Wu, *University of California, Berkeley;* Xuening Sun, *University of California, Berkeley;*
Alberto Sangiovanni-Vincentelli, *University of California, Berkeley;* Jan M. Rabaey, *University of California, Berkeley*

10:06
B1L-L.3 **A 1.6 mW 5.4 GHz Transformer-Feedback g_m-Boosted Current-Reuse LNA in 0.18µm CMOS** 1635
Daibashish Gangopadhyay, *University of Washington;* Sudip Shekhar, *Intel Corporation;*
Jeffrey S. Walling, *University of Washington;* David J. Allstot, *University of Washington*

B1L-M References & Power Converter Circuits (Lecture)

Time: Tuesday, June 1, 2010, 9:30 - 11:00
Place: Salon M
Chair(s): Vadim Ivanov, *Texas Instruments*

9:30
B1L-M.1 **Novel MOSFET-Only Bandgap Voltage Reference** 1639
Carlos Dualibe, *Freescale Semiconductor, University of Mons*

9:48
B1L-M.2 **Low Voltage CMOS Bandgap References with Temperature Compensated Reference Current Output** 1643
Edward K.F. Lee, *Alfred Mann Foundation*

10:06
B1L-M.3 **32-Bit Configurable Bias Current Generator with Sub-Off-Current Capability** 1647
Tobi Delbruck, *University of Zürich and ETH Zürich;* Raphael Berner, *University of Zürich and ETH Zürich;* Patrick Lichtsteiner, *University of Zürich and ETH Zürich;* Carlos Dualibe, *Freescale Semiconductor*

10:24
B1L-M.4 **A Compact Adaptive Slope Compensation Circuit for Current-Mode DC-DC Converter** 1651
Kimio Shibata, *University of Electro-Communications;* Cong-Kha Pham, *University of Electro-Communications*

10:42
B1L-M.5 **Enhanced RF to DC CMOS Rectifier with Capacitor-Bootstrapped Transistor** 1655
Mahsa Ebrahimian, *Dalhousie University;* Kamal El-Sankary, *Dalhousie University;* Ezz El-Masry, *Dalhousie University*

B1L-N SPECIAL SESSION: Neuromorphic Nano Devices Adaptive Sensing & Processing Systems (Lecture)

Time: Tuesday, June 1, 2010, 9:30 - 11:00
Place: Radio City Ballroom I
Chair(s): Christian Gamrat, *CEA, France*
Teresa Serrano-Gotarredona, *Instituto de Microelectrónica de Sevilla*

9:30
B1L-N.1 **On Neuromorphic Spiking Architectures for Asynchronous STDP Memristive Systems** 1659
J.A. Pérez-Carrasco, *CSIC Instituto de Microelectrónica de Sevilla (IMSE-CNM);* C. Zamarreño-Ramos, *CSIC Instituto de Microelectrónica de Sevilla (IMSE-CNM);* T. Serrano-Gotarredona, *CSIC Instituto de Microelectrónica de Sevilla (IMSE-CNM);* B. Linares-Barranco, *CSIC Instituto de Microelectrónica de Sevilla (IMSE-CNM)*

9:48
B1L-N.2 **Development of a Functional Model for the Nanoparticle-Organic Memory Transistor** 1663
O. Bichler, *CEA, LIST;* WS. Zhao, *CEA, LIST;* C. Gamrat, *CEA, LIST;* F. Alibart, *CNRS IEMN-Université Lille 1;* S. Pleutin, *CNRS IEMN-Université Lille 1;* D. Vuillaume, *CNRS IEMN-Université Lille 1*

10:06
B1L-N.3 **Carbon Nanotube-Based Programmable Devices for Adaptive Architectures** 1667
G. Agnus, *CEA, IRAMIS, SPEC;* A. Filoramo, *CEA, IRAMIS, SPEC;* J-P. Bourgoin, *CEA, IRAMIS, SPEC;* V. Derycke, *CEA, IRAMIS, SPEC;* W. Zhao, *CEA, LIST*

10:24
B1L-N.4 **Robustness of Logic Gates and Reconfigurability of Neuromorphic Switching Networks** 1671
Zackary Chiragwandi, *Chalmers University of Technology;* Jonas Sköldberg, *Chalmers University of Technology;* Göran Wendin, *Chalmers University of Technology*

B1L-P SPECIAL SESSION: Multimedia Forensics & Security (Lecture)

Time: Tuesday, June 1, 2010, 9:30 - 11:00
Place: Radio City Ballroom II
Chair(s): Jiwu Huang, *Sun Yat-Sen University*
Yun-Qing Shi, *New Jersey Institute of Technology*

B2L-A SPECIAL SESSION: Emerging Technologies for Nanometer VLSI Circuits & Applications (Lecture)

Time: Tuesday, June 1, 2010, 11:20 - 12:50
Place: Grand Ballroom E
Chair(s): Massimo Alioto, *University of Siena*

11:56
B2L-A.3 **SRAM Design in Fully-Depleted SOI Technology** 1707
Borivoje Nikolić, *University of California, Berkeley;* Changhwan Shin, *University of California, Berkeley;* Min Hee Cho, *University of California, Berkeley;* Xin Sun, *University of California, Berkeley;* Tsu-Jae King Liu, *University of California, Berkeley;* Bich-Yen Nguyen, *SOITEC*

12:14
B2L-A.4 **Design of a CNFET Array for Sensing and Control in P450 based Biochips for Multiple Drug Detection** 1711
Shashikanth Bobba, *Ecole Polytechnique Fédérale de Lausanne;* Sandro Carrara, *Ecole Polytechnique Fédérale de Lausanne;* Giovanni De Micheli, *Ecole Polytechnique Fédérale de Lausanne*

12:32
B2L-A.5 **Design Aspects of Carry Lookahead Adders with Vertically-Stacked Nanowire Transistors** 1715
Davide Sacchetto, *Ecole Polytechnique Fédérale de Lausanne;* M. Haykel Ben-Jamaa, *Ecole Polytechnique Fédérale de Lausanne;* Giovanni De Micheli, *Ecole Polytechnique Fédérale de Lausanne;* Yusuf Leblebici, *Ecole Polytechnique Fédérale de Lausanne*

B2L-B Pipelined & Flash ADCs (Lecture)

Time: Tuesday, June 1, 2010, 11:20 - 12:50
Place: Grand Ballroom F
Chair(s): Tony Chan Carusone, *University of Toronto*

11:20
B2L-B.1 **Offset Cancellation for Zero Crossing based Circuits** 1719
Albert Chow, *Massachusetts Institute of Technology;* Hae-Seung Lee, *Massachusetts Institute of Technology*

11:38
B2L-B.2 **High-Speed Differential Resistor Ladder for A/D Converters** 1723
Davide De Caro, *Università degli Studi di Napoli Federico II;* Marino Coppola, *Università degli Studi di Napoli Federico II;* Nicola Petra, *Università degli Studi di Napoli Federico II;* Ettore Napoli, *Università degli Studi di Napoli Federico II;* Antonio G.M. Strollo, *Università degli Studi di Napoli Federico II;* Valeria Garofalo, *Università degli Studi di Napoli Federico II*

11:56
B2L-B.3 **13-bit 205 MS/s Time-Interleaved Pipelined ADC with Digital Background Calibration** 1727
Mohamed Mohsen, *Silicon Vision LLC.;* Mohamed Dessouky, *Ain Shams University*

12:14
B2L-B.4 **Pseudo-Differential Zero-Crossing-Based Circuit with Differential Error Suppression** 1731
Tawfiq Musah, *Oregon State University;* Un-Ku Moon, *Oregon State University*

12:32
B2L-B.5 **A 1.6-GHz, 54-dB Signal-to-Noise and Distortion Ratio Pipeline A/D Converter** 1735
L. Picolli, *Università degli studi di Pavia;* L. Crespi, *Conexant Systems;* F. Chaahoub, *Quellan;* P. Malcovati, *Università degli studi di Pavia;* A. Baschirotto, *Università degli Studi di Milano-Bicocca*

B2L-C Clocking & Variability (Lecture)

Time: Tuesday, June 1, 2010, 11:20 - 12:50
Place: Grand Ballroom G
Chair(s): Masud Chowdhury, *University of Illinois at Chicago*
Vojin Oklobdzija, *University of Texas*

11:20
B2L-C.1 **Comparative Analysis of Power Yield Improvement under Process Variation of Sub-Threshold Flip-Flops** 1739
Hassan Mostafa, *University of Waterloo;* Mohab Anis, *University of Waterloo;* Mohamed Elmasry, *University of Waterloo*

11:38
B2L-C.2 **A Novel Variation Insensitive Clock Distribution Methodology** 1743
Ezz El-Din O. Hussein, *Nile University;* Yehea I. Ismail, *Northwestern University & Nile University*

11:56
B2L-C.3 **Statistical Timing Yield Improvement of Dynamic Circuits using Negative Capacitance Technique** 1747
Hassan Mostafa, *University of Waterloo;* Mohab Anis, *University of Waterloo;* Mohamed Elmasry, *University of Waterloo*

12:14
B2L-C.4 **Globally Integrated Power and Clock Distribution Network** 1751
Renatas Jakushokas, *University of Rochester;* Eby G. Friedman, *University of Rochester*

12:32
B2L-C.5 **A 55nm 1GHz One-Cycle-Locking De-Skewing Circuit** 1755
Jinn-Shyan Wang, *National Chung Cheng University;* Chun-Yuan Cheng, *National Chung Cheng University;* Je-Ching Liu, *National Chung Cheng University;* Yu-Chia Liu, *National Chung Cheng University;* Yi-Ming Wang, *National Chi-Nang University*

B2L-D Wireless Communications Systems II (Lecture)

Time: Tuesday, June 1, 2010, 11:20 - 12:50
Place: Grand Ballroom H
Chair(s): Myung Sunwoo, *Ajou University*

11:20
B2L-D.1 **Low-Power Design of Variable Block-Size LDPC Decoder using Nanometer Technology** 1759
Chih-Hung Lin, *National Chung Hsing University;* Alex Chien-Lin Huang, *National Chip Implementation Center;* Robert Chen-Hao Chang, *National Chung Hsing University;* Kuang-Hao Lin, *National Chin-Yi University of Technology*

11:38
B2L-D.2 **Implementation of Enhanced CDMA Utilizing Low Complexity Joint Detection with Iterative Processing** 1763
Russell Dodd, *University of Alberta;* Christian Schlegel, *University of Alberta;* Vincent Gaudet, *University of Alberta*

11:56
B2L-D.3 **Efficient FPGA Implementation of a Wireless Communication System using Bluetooth Connectivity** 1767
Hasan Taha, *Brunel University;* Abdul N. Sazish, *Brunel University;* Afandi Ahmad, *Brunel University;* Mhd Saeed Sharif, *Brunel University;* Abbes Amira, *Brunel University*

B2L-G Visual Signal Coding & Communications (Lecture)

Time: Tuesday, June 1, 2010, 11:20 - 12:50
Place: Salon C
Chair(s): Gwo Giun Lee, *National Cheng Kung University*
Nam Ling, *Santa Clara University*

B2L-H Analog Circuits & IC Technology (Lecture)

Time: Tuesday, June 1, 2010, 11:20 - 12:50
Place: Salon D
Chair(s): George Yuan, *Hong Kong University of Science & Technology*

11:38
B2L-H.2 **An Effective Phase Detector for Phase-Locked Loops with Wide Capture Range and Fast Acquisition Time** 1843
Chi-Sheng Lin, *National Chip Implementation Center;* Ting-Hsu Chien, *National Chip Implementation Center;* Chin-Long Wey, *National Chip Implementation Center*

11:56
B2L-H.3 **17 Gb/s VCSEL Driver using Double-Pulse Asymmetric Emphasis Technique in 90-nm CMOS for Optical Interconnection** 1847
Kenichi Ohhata, *Kagoshima University;* Hironori Imamura, *Kagoshima University;* Toshinobu Ohno, *Kagoshima University;* Takaya Taniguchi, *Kagoshima University;* Kiichi Yamashita, *Kagoshima University;* Toru Yazaki, *Hitachi, Ltd.;* Norio Chujo, *Hitachi, Ltd.*

12:14
B2L-H.4 **A Power Amplifier with Minimal Efficiency Degradation under Back-Off** 1851
Nitesh Singhal, *University of California, Los Angeles;* Nitin Nidhi, *University of California, Los Angeles;* Sudhakar Pamarti, *University of California, Los Angeles*

12:32
B2L-H.5 **Miniaturized CMOS Thermal Sensor Array for Temperature Gradient Measurement in Microprocessors** 1855
Kosta Luria, *Intel Corporation;* Joseph Shor, *Intel Corporation*

B2L-J VLSI Design Methodologies & Information Security (Lecture)

Time: Tuesday, June 1, 2010, 11:20 - 12:50
Place: Salon J
Chair(s): Zhongfeng Wang, *Broadcom Corp.*
Xinmiao Zhang, *Case Western Reserve University*

11:20
B2L-J.1 **Partitioning and Synthesis for Hybrid Architecture Simulators** 1859
Zhuo Ruan, *Brigham Young University;* David A. Penry, *Brigham Young University*

11:38
B2L-J.2 **Automatic Communication Synthesis with Hardware Sharing for Design Space Exploration** 1863
Yuki Ando, *Nagoya University;* Seiya Shibata, *Nagoya University, Japan Society for the Promotion of Science;* Shinya Honda, *Nagoya University;* Hiroyuki Tomiyama, *Nagoya University;* Hiroaki Takada, *Nagoya University*

11:56
B2L-J.3 **State-Dependent Changeable Scan Architecture against Scan-Based Side Channel Attacks** 1867
Ryuta Nara, *Waseda University;* Hiroshi Atobe, *Mitsubishi Electronics Corp.;* Youhua Shi, *Waseda University;* Nozomu Togawa, *Waseda University;* Masao Yanagisawa, *Waseda University;* Tatsuo Ohtsuki, *Waseda University*

12:14
B2L-J.4 **Towards a Comprehensive and Systematic Classification of Hardware Trojans** 1871
J. Rajendran, *Polytechnic Institute of New York University;* E. Gavas, *Polytechnic Institute of New York University;* J. Jimenez, *Polytechnic Institute of New York University;* V. Padman, *Polytechnic Institute of New York University;* R. Karri, *Polytechnic Institute of New York University*

12:32
B2L-J.5 **Fault and Simple Power Attack Resistant RSA using Montgomery Modular Multiplication** 1875
Apostolos P. Fournaris, *University of Patras / Hitachi Europe SAS*

B2L-K Detection & Estimation (Lecture)

Time: Tuesday, June 1, 2010, 11:20 - 12:50
Place: Salon K
Chair(s): Behrouz Nowrouzian, *University of Alberta*
Wei Xing Zheng, *University of Western Sydney*

11:20
B2L-K.1 **A Subspace-Based Method for DOA Estimation of Uniform Linear Array in the Presence of Mutual Coupling** 1879
B. Liao, *University of Hong Kong;* Z.G. Zhang, *University of Hong Kong;* S.C. Chan, *University of Hong Kong*

11:38
B2L-K.2 **A 22.4 mW Competitive Fuzzy Edge Detection Processor for Volume Rendering** 1883
Joonsoo Kwon, *Korea Advanced Institute of Science and Technology;* Minsu Kim, *Korea Advanced Institute of Science and Technology;* Jinwook Oh, *Korea Advanced Institute of Science and Technology;* Hoi-Jun Yoo, *Korea Advanced Institute of Science and Technology*

11:56
B2L-K.3 **Semi-Blind CFO, Channel Estimation and Data Detection for OFDM Systems over Doubly Selective Channels** 1887
Lanlan He, *University of Hong Kong;* Shaodan Ma, *University of Hong Kong;* Yik-Chung Wu, *University of Hong Kong;* Tung-Sang Ng, *University of Hong Kong*

12:14
B2L-K.4 **A Group of Macroblock based Motion Estimation Algorithm Supporting Adaptive Search Range for H.264 Video Coding** 1891
Chang-Hung Tsai, *National Chung Cheng University;* Kheng-Joo Tan, *National Chung Cheng University;* Ching-Lung Su, *National Yunlin University of Science and Technology;* Jiun-In Guo, *National Chung Cheng University*

12:32
B2L-K.5 **Super-Resolution Technique for Thermography with Dual-Camera System** 1895
Shingo Chikamatsu, *Kobe University;* Tomohiro Nakaya, *Kobe University;* Masakazu Kouda, *Kobe University;* Nobutaka Kuroki, *Kobe University;* Tetsuya Hirose, *Kobe University;* Masahiro Numa, *Kobe University*

B2L-L Wireless Communications Circuits I (Lecture)

Time: Tuesday, June 1, 2010, 11:20 - 12:50
Place: Salon L
Chair(s): Chang-Ho Lee, *Samsung*
Calvin Plett, *Carleton University*

11:20
B2L-L.1 **Fully Integrated 9 GHz CMOS VCO with Very Low Phase Noise** 1899
Kai Hu, *Innovations for High Performance Microelectronics;* Frank Herzel, *Innovations for High Performance Microelectronics;* J. Christoph Scheytt, *Innovations for High Performance Microelectronics*

11:38
B2L-L.2 **A Thorough Analysis of the Tank Quality Factor in LC Oscillators with Switched Capacitor Banks** 1903
Stefano Dal Toso, *Università degli Studi di Padova;* Andrea Bevilacqua, *Università degli Studi di Padova;* Andrea Gerosa, *Università degli Studi di Padova;* Andrea Neviani, *Università degli Studi di Padova*

11:56
B2L-L.3 **Reliability Study of a Low-Voltage Class-E Power Amplifier in 130nm CMOS** 1907
Jonas Fritzin, *Linköping University;* Timmy Sundström, *Linköping University;* Ted Johansson, *Linköping University, Huawei Technologies;* Atila Alvandpour, *Linköping University*

11:38
B2L-P.2 **Neural Dynamics in Reconfigurable Silicon** 1943
Arindam Basu, *Georgia Institute of Technology;* Shubha Ramakrishnan, *Georgia Institute of Technology;* Paul Hasler, *Georgia Institute of Technology*

11:56
B2L-P.3 **A Wafer-Scale Neuromorphic Hardware System for Large-Scale Neural Modeling** 1947
Johannes Schemmel, *Universität Heidelberg;* Daniel Brüderle, *Universität Heidelberg;* Andreas Grübl, *Universität Heidelberg;* Matthias Hock, *Universität Heidelberg;* Karlheinz Meier, *Universität Heidelberg;* Sebastian Millner, *Universität Heidelberg*

12:14
B2L-P.4 **Spike-Based Learning with a Generalized Integrate and Fire Silicon Neuron** 1951
Giacomo Indiveri, *University of Zürich and ETH Zürich;* Fabio Stefanini, *University of Zürich and ETH Zürich;* Elisabetta Chicca, *University of Zürich and ETH Zürich*

B3L-A SPECIAL SESSION: Memristors & Memristive Systems – From Devices to Applications (Lecture)

Time: Tuesday, June 1, 2010, 14:10 - 15:40
Place: Grand Ballroom E
Chair(s): Garrett Rose, *Polytechnic Institute of NYU*
Wei Wang, *University at Albany, State University of New York*

14:10
B3L-A.1 **Overview: Memristive Devices, Circuits and Systems** 1955
Garrett S. Rose, *Polytechnic Institute of New York University*

14:28
B3L-A.2 **Biologically Self-Assembled Memristive Circuit Elements** 1959
Nathaniel C. Cady, *University at Albany, State University of New York;* Magnus Bergkvist, *University at Albany, State University of New York;* Nicholas M. Fahrenkopf, *University at Albany, State University of New York;* Phillip Z. Rice, *University at Albany, State University of New York;* Joseph Van Nostrand, *Air Force Research Laboratory*

14:46
B3L-A.3 **FPGA based on Integration of Memristors and CMOS Devices** 1963
Wei Wang, *University at Albany, State University of New York;* Tom T. Jing, *University at Albany, State University of New York;* Brian Butcher, *University at Albany, State University of New York*

15:04
B3L-A.4 **Hybrid CMOS/Memristor Circuits** 1967
D.B. Strukov, *University of California, Santa Barbara;* D.R. Stewart, *National Council of Canada;* J. Borghetti, *Hewlett Packard Laboratories;* X. Li, *Hewlett Packard Laboratories;* M. Pickett, *Hewlett Packard Laboratories;* G. Medeiros Ribeiro, *Hewlett Packard Laboratories;* W. Robinett, *Hewlett Packard Laboratories;* G. Snider, *Hewlett Packard Laboratories;* J.P. Strachan, *Hewlett Packard Laboratories;* W. Wu, *Hewlett Packard Laboratories;* Q. Xia, *Hewlett Packard Laboratories;* J. Joshua Yang, *Hewlett Packard Laboratories;* R.S. Williams, *Hewlett Packard Laboratories*

15:22
B3L-A.5 **Memristive Transfer Matrices for Analog Electronics** 1971
Blaise L. Mouttet, *George Mason University*

B3L-B Oscillators for Wireless Applications (Lecture)

Time: Tuesday, June 1, 2010, 14:10 - 15:40
Place: Grand Ballroom F
Chair(s): Alyssa Apsel, *Cornell University*

14:10
B3L-B.1 **Capacitor Bank Design for Wide Tuning Range LC VCOs: 850MHz - 7.1GHz (157%)** 1975
Bodhisatwa Sadhu, *University of Minnesota;* Ramesh Harjani, *University of Minnesota*

14:28
B3L-B.2 **On-Chip Biased Voltage-Controlled Oscillator with Temperature Compensation of the Oscillation Amplitude for Robust I/Q Generation** 1979
A.J. Ginés, *CSIC Instituto de Microelectrónica de Sevilla (IMSE-CNM);* R. Doldán, *CSIC Instituto de Microelectrónica de Sevilla (IMSE-CNM);* M.J. Barragán, *CSIC Instituto de Microelectrónica de Sevilla (IMSE-CNM);* A. Rueda, *CSIC Instituto de Microelectrónica de Sevilla (IMSE-CNM);* E. Peralías, *CSIC Instituto de Microelectrónica de Sevilla (IMSE-CNM)*

14:46
B3L-B.3 **A Wide-Band Digitally Controlled Ring Oscillator** 1983
Liangge Xu, *Aalto University;* Kari Stadius, *Aalto University;* Jussi Ryynänen, *Aalto University*

15:04
B3L-B.4 **Merged Digitally Controlled Oscillator and Time to Digital Converter for TV Band ADPLL** 1987
Wissam Altabban, *Télécom ParisTech;* Patricia Desgreys, *Télécom ParisTech;* Hervé Petit, *Télécom ParisTech;* Karim Ben Kalaia, *Télécom ParisTech;* Laure Rolland du Roscoat, *NXP Semiconductors*

15:22
B3L-B.5 **Multi-Standard/Multi-Band Distributed VCO based on the "Switched-Cells Tuning Technique" for SDR Applications** 1991
Francesco Cannone, *Politecnico di Bari;* Gianfranco Avitabile, *Politecnico di Bari;* Damiano Cascella, *Politecnico di Bari*

B3L-D VLSI & SoC Implementations for Multimedia (Lecture)

Time: Tuesday, June 1, 2010, 14:10 - 15:40
Place: Grand Ballroom H
Chair(s): Tian-Sheuan Chang, *National Chiao Tung University*
Gwo Giun Lee, *National Cheng Kung University*

14:10
B3L-D.1 **A Codesign Synthesis from an MPEG-4 Decoder Dataflow Description** 1995
Nicolas Siret, *Lead Tech Design & IETR/INSA;* Ismaïl Sabry, *Lead Tech Design;* Jean François Nezan, *IETR / INSA;* Mickaël Raulet, *IETR / INSA*

14:28
B3L-D.2 **Digitally-Controlled RF Passive Attenuator in 65nm CMOS for Mobile TV Tuner ICs** 1999
Ahmed Youssef, *University of Calgary;* James Haslett, *University of Calgary;* Edward Youssoufian, *Newport Media Inc.*

14:46
B3L-D.3 **Reconfigurable Architecture Design of Motion Compensation for Multi-Standard Video Coding** 2003
Gwo-Giun Lee, *National Cheng Kung University;* Wei-Chiao Yang, *National Cheng Kung University;* Min-Shan Wu, *National Cheng Kung University;* He-Yuan Lin, *National Cheng Kung University*

B3L-E Acoustic Sensors (Lecture)

Time: Tuesday, June 1, 2010, 14:10 - 15:40
Place: Salon A
Chair(s): Tobi Delbruck, *ETH Zürich*
Jonathan Tapson, *University of Cape Town*

B3L-F Cellular Nonlinear Networks: Theory & Applications (Lecture)

Time: Tuesday, June 1, 2010, 14:10 - 15:40
Place: Salon B
Chair(s): Marco Gilli, *Politecnico di Torino*
Ronald Tetzlaff, *TU Dresden*

B3L-G Wireless Transmitters & Receivers (Lecture)

Time: Tuesday, June 1, 2010, 14:10 - 15:40
Place: Salon C
Chair(s): Andrea Gerosa, *University of Padova*

B3L-H Biomedical Signal Processing & Bioimaging Technology (Lecture)

Time: Tuesday, June 1, 2010, 14:10 - 15:40
Place: Salon D
Chair(s): Mohamad Sawan, *École Polytechnique de Montréal*
Gianluca Setti, *University of Ferrara*

14:10
B3L-H.1 **A Dual-Mode Neural Stimulator Capable of Delivering Constant Current in Current-Mode and High Stimulus Charge in Semi-Voltage-Mode** 2075
Xiao Liu, *University College London;* Andreas Demosthenous, *University College London;* Nick Donaldson, *University College London*

14:28
B3L-H.2 **Hyperspectral Reconstruction in Biomedical Imaging using Terahertz Systems** 2079
Zhimin Xu, *The University of Hong Kong;* Edmund Y. Lam, *The University of Hong Kong*

14:46
B3L-H.3 **Sub-Microwatt Correlation Integral Processor for Implantable Closed-Loop Epileptic Neuromodulator** 2083
Yu-Hsin Chen, *National Taiwan University;* Tung-Chien Chen, *National Taiwan University;* Tsung-Hsueh Lee, *National Taiwan University;* Liang-Gee Chen, *National Taiwan University*

15:04
B3L-H.4 **A Wirelessly-Powered Electro-Acupuncture based on Adaptive Pulse Width Mono-Phase Stimulation** 2087
Kiseok Song, *KAIST;* Seulki Lee, *KAIST;* Hoi-Jun Yoo, *KAIST*

15:22
B3L-H.5 **Electric Field Focusing and Shifting Technique in Deep Brain Stimulation using a Dynamic Tripolar Current Source** 2091
Virgilio Valente, *University College of London;* Andreas Demosthenous, *University College of London;* Richard Bayford, *Middlesex University*

B3L-J ASICs & Specialized VLSI Circuits (Lecture)

Time: Tuesday, June 1, 2010, 14:10 - 15:40
Place: Salon J
Chair(s): Wael Badawy, *IntelliView Technologies Inc.*
Linda DeBrunner, *Florida State University*

14:10
B3L-J.1 **8x8-Bit Multiplier Designed with a New Wave-Pipelining Scheme** 2095
Refik Sever, *Akdeniz University;* Murat Askar, *Middle East Technical University*

14:28
B3L-J.2 **A Minimal-Gate-Count Fully Digital Frequency-Tracking Oversampling CDR Circuit** 2099
José Sarmento, *Synopsys Inc;* John T. Stonick, *Synopsys Inc*

14:46
B3L-J.3 **An Improved RNS Reverse Converter for the $\{2^{2n+1}-1, 2n, 2n-1\}$ Moduli Set** 2103
K.A. Gbolagade, *Delft University of Technology;* R. Chaves, *TuLisbon/INESC-ID;* L. Sousa, *TuLisbon/INESC-ID;* S.D. Cotofana, *Delft University of Technology*

15:04
B3L-J.4 **Compact Hardware Architectures for BLAKE and LAKE Hash Functions** 2107
Jianzhou Li, *Polytechnic Institute of NYU;* Ramesh Karri, *Polytechnic Institute of NYU*

15:22
B3L-J.5 **A Scalable Hardware/Software Co-Design for Elliptic Curve Cryptography on PicoBlaze Microcontroller** 2111
Mohamed N. Hassan, *University of Sheffield;* Mohammed Benaissa, *University of Sheffield*

B3L-K Multirate & Array Signal Processing (Lecture)

Time: Tuesday, June 1, 2010, 14:10 - 15:40
Place: Salon K
Chair(s): Tapio Saramäki, *Tampere University of Technology*
P.P. Vaidyanathan, *Caltech*

14:10
B3L-K.1 **A 1.2 Gb/s Recursive Polyphase Cascaded Integrator-Comb Prefilter for High Speed Digital Decimation Filters in 0.18-µm CMOS** 2115
Xiong Liu, *University of California, Los Angeles;* Alan N. Willson, Jr, *University of California, Los Angeles*

14:28
B3L-K.2 **Novel Multiplierless Wide-Band CIC Compensator** 2119
Gordana Javanovic Dolecek, *Institute INAOE;* Lara Dolecek, *UCLA*

14:46
B3L-K.3 **Reconfigurable Nonuniform Transmultiplexers based on Uniform Filter Banks** 2123
Amir Eghbali, *Linköping University;* Håkan Johansson, *Linköping University;*
Per Löwenborg, *Linköping University*

15:04
B3L-K.4 **A Novel Affine Projection Algorithm for Superdirective Microphone Array Beamforming** 2127
Danilo Comminiello, *"Sapienza" University of Rome;* Michele Scarpiniti, *"Sapienza" University of Rome;*
Raffaele Parisi, *"Sapienza" University of Rome;* Aurelio Uncini, *"Sapienza" University of Rome*

15:22
B3L-K.5 **Robust Response Control with Linear Inequality Matrix Constraints for Adaptive Beamformer** 2131
Z.L. Yu, *South China University of Technology;* Z.G. Gu, *South China University of Technology;* Y. Li, *South China University of Technology;* W. Ser, *Nanyang Technological University;* M.H. Er, *Nanyang Technological University*

B3L-L OFDM Communications Systems (Lecture)

Time: Tuesday, June 1, 2010, 14:10 - 15:40
Place: Salon L
Chair(s): Zhongfeng Wang, *Broadcom Corp.*

14:10
B3L-L.1 **Joint Estimation and Compensation for Front-End Imperfection in MB-OFDM UWB Systems** 2135
Jun Zhou, *Fudan University;* Liang Liu, *Fudan University;* Fan Ye, *Fudan University;*
Junyan Ren, *Fudan University*

14:28
B3L-L.2 **A Sideband-Suppressed Low-Power Synthesizer for 14-Band Dual-Carrier MB-OFDM UWB Transceivers** 2139
Danfeng Chen, *Fudan University;* Haipeng Fu, *Fudan University;* Yunfeng Chen, *Fudan University;* Wei Li, *Fudan University;* Fan Ye, *Fudan University;* Ning Li, *Fudan University;* Junyan Ren, *Fudan University*

14:46
B3L-L.3 **Comparison of Time and Frequency Domain Interpolation Implementations for MB-OFDM UWB Transmitters** 2143
Eleni Fotopoulou, *University of Patras;* Dorina Thanou, *Swiss Federal Institute of Technology;*
Thanos Stouraitis, *University of Patras*

15:04
B3L-L.4 **Low-Complexity Tone Reservation Method for PAPR Reduction of OFDM Systems** 2147
Kangwoo Park, *Korea Advanced Institute of Science and Technology;*
In-Cheol Park, *Korea Advanced Institute of Science and Technology*

B3L-M Sigma-Delta Systems & Techniques (Lecture)

Time: Tuesday, June 1, 2010, 14:10 - 15:40
Place: Salon M
Chair(s): Gabor Temes, *Oregon State University*

14:10
B3L-M.1 **Study on Integrated Transmission Line ΣΔ Modulators** 2151
Ali Zahabi, *University of Ulm;* Maurits Ortmanns, *University of Ulm*

14:28
B3L-M.2 **An Internally Non-Linear ADC for a ΣΔ Accelerometer Loop** 2155
Hanspeter Schmid, *University of Applied Sciences NW Switzerland, Institute of Microelectronics;* Sven Sigel, *University of Applied Sciences NW Switzerland, Institute of Microelectronics;* Marc Pastre, *Ecole Polytechnique Fédérale de Lausanne;* Maher Kayal, *Ecole Polytechnique Fédérale de Lausanne;* Pascal Zwahlen, *Colibrys SA;* Anne-Marie Nguyen, *Colibrys SA*

14:46
B3L-M.3 **Design Techniques for Discrete-Time Delta-Sigma ADCs with Extra Loop Delay** 2159
Yan Wang, *Oregon State University;* Gábor C. Temes, *Oregon State University*

15:04
B3L-M.4 **A New Zero-Optimization Scheme for Noise-Coupled ΔΣ ADCs** 2163
Ramin Zanbaghi, *Oregon State University;* Terri S. Fiez, *Oregon State University;* Gabor Temes, *Oregon State University*

15:22
B3L-M.5 **Hardware Complexity of a Correlation based Background DAC Error Estimation Technique for Sigma-Delta ADCs** 2167
Pascal Witte, *University of Ulm;* Carsten Noeske, *Albert-Ludwigs-University;* Maurits Ortmanns, *University of Ulm*

B3L-P SPECIAL SESSION: New Video Coding Technologies (Lecture)

Time: Tuesday, June 1, 2010, 14:10 - 15:40
Place: Radio City Ballroom II
Chair(s): Weisi Lin, *Nanyang Technological University*
Manoranjan Paul, *Nanyang Technological University*

14:10
B3L-P.1 **MCFIS: Better I-Frame for Video Coding** 2171
Manoranjan Paul, *Nanayng Technological University;* Weisi Lin, *Nanayng Technological University;* Chiew Tong Lau, *Nanayng Technological University;* Bu-Sung Lee, *Nanayng Technological University*

14:28
B3L-P.2 **An Efficient Motion Vector Coding Algorithm based on Adaptive Predictor Selection** 2175
Wen Yang, *The Hong Kong University of Science and Technology;* Oscar C. Au, *The Hong Kong University of Science and Technology;* Chao Pang, *The Hong Kong University of Science and Technology;* Jingjing Dai, *The Hong Kong University of Science and Technology;* Feng Zou, *The Hong Kong University of Science and Technology;* Xing Wen, *The Hong Kong University of Science and Technology;* Yu Liu, *Applied Science and Technology Research Institute*

16:18
B4L-B.2 **Instantaneously Companding Baseband SC Low-Pass Filter and ADC for 802.11a/g WLAN Receiver** 2215
Shenjie Wang, *Delft University of Technology;* Vaibhav Maheshwari, *Delft University of Technology;* Wouter A. Serdijn, *Delft University of Technology*

16:36
B4L-B.3 **An Area Efficient Digital Amplitude Modulator in 90nm CMOS** 2219
V. Chironi, *University of Salento;* B. Debaillie, *IMEC;* A. Baschirotto, *University of Salento;* J. Craninckx, *IMEC;* M. Ingels, *IMEC*

16:54
B4L-B.4 **Efficiency based Design Flow for Fully-Integrated Class C RF Power Amplifiers in Nanometric CMOS** 2223
Nicolás Barabino, *Universidad de la República;* Rafaella Fiorelli, *Universidad de Sevilla;* Fernando Silveira, *Universidad de la República*

17:12
B4L-B.5 **A Broadband 470-862 MHz Direct Conversion CMOS Receiver** 2227
Raghavendra Kulkarni, *Texas A&M University;* Jusung Kim, *Texas A&M University;* Hyung-Joon Jeon, *Texas A&M University;* Jose Silva-Martinez, *Texas A&M University;* Jianhong Xiao, *Broadcom Corporation*

B4L-C Biomedical Signal Processing (Lecture)

Time: Tuesday, June 1, 2010, 16:00 - 17:30
Place: Grand Ballroom G
Chair(s): Wu-Sheng Lu, *University of Victoria, Canada*
Yajun Yu, *Nanyang Technological University*

16:00
B4L-C.1 **Optimized Numerical Mapping Scheme for Filter-Based Exon Location in DNA using a Quasi-Newton Algorithm** 2231
Parameswaran Ramachandran, *University of Victoria;* Wu-Sheng Lu, *University of Victoria;* Andreas Antoniou, *University of Victoria*

16:18
B4L-C.2 **Comparative Genomic Analysis using Statistically Optimal Null Filters** 2235
Rajasekhar Kakumani, *Concordia University;* M. Omair Ahmad, *Concordia University;* Vijay Devabhaktuni, *University of Toledo*

16:36
B4L-C.3 **The Relationship Between Music Processing and Electrocardiogram (ECG) in Vegetative State (VS)** 2239
Brad S. Yen, *National Chiao Tung University;* Hui-Min Wang, *National Chiao Tung University;* Mark C. Hou, *National Chiao Tung University;* Sheng-Chieh Huang, *National Chiao Tung University;* Lei-Chun Chou, *National Chiao Tung University;* Shao-You Hsu, *National Chiao Tung University;* Tzu-Chia Huang, *National Chiao Tung University;* You-Liang Lai, *National Chiao Tung University;* Ming-Yie Jan, *Academia Sinica*

16:54
B4L-C.4 **Data Adaptive Analysis of ECG Signals for Cardiovascular Disease Diagnosis** 2243
Md. Rabiul Islam, *University of Rajshahi;* Shamim Ahmad, *University of Rajshahi;* Keikichi Hirose, *The University of Tokyo;* Md. Khademul Islam Molla, *University of Rajshahi*

B4L-D Multimedia Mobile Networks (Lecture)

Time: Tuesday, June 1, 2010, 16:00 - 17:30
Place: Grand Ballroom H
Chair(s): Mladen Berekovic, *Technische Universität Braunschweig*
Chang Wen Chen, *University at Buffalo*

16:00
B4L-D.1 **Time-Constrained Packet Scheduling Optimization for Video Streaming in Wireless Ad-Hoc Networks** 2247
Xinggong Zhang, *Peking University;* Zongming Guo, *Peking University*

16:18
B4L-D.2 **Efficient Packet Scheduling for Scalable Video Delivery to Mobile Clients** 2251
Maodong Li, *Nanyang Technological University;* Zhenzhong Chen, *Nanyang Technological University;* Seong-Ping Chuah, *Nanyang Technological University;* Yap-Peng Tan, *Nanyang Technological University*

16:36
B4L-D.3 **Cross-Layer Optimization for Wireless Streaming via Adaptive MIMO OFDM** 2255
Robert Yi-Pin Lu, *National Taiwan University;* Jun-Wei Lin, *National Taiwan University;* Tzi-Dar Chiueh, *National Taiwan University*

16:54
B4L-D.4 **A Cross-Layer Adaptation HCCA MAC for QoS-Aware H.264 Video Communications Over Wireless Mesh Networks** 2259
Byung Joon Oh, *Link Communications, Ltd;* Chang Wen Chen, *State University of New York at Buffalo*

17:12
B4L-D.5 **An EFOM for Cross-Layer Optimization Towards Low-Power and High-Performance Wireless Networks** 2263
Xia Li, *Eindhoven University of Technology;* Peter Baltus, *Eindhoven University of Technology;* Dusan Milosevic, *Eindhoven University of Technology;* Arthur van Roermund, *Eindhoven University of Technology;* Paul van Zeijl, *Philips Research Eindhoven*

B4L-E Chemical Sensors (Lecture)

Time: Tuesday, June 1, 2010, 16:00 - 17:30
Place: Salon A
Chair(s): Amine Bermak, *Hong Kong University of Science & Technology*
Jennifer B. Christen, *Arizona State University*

16:00
B4L-E.1 **A 100μA/Ch Fully-Integrable Lock-in Multi-Channel Frontend for Infrared Spectroscopic Gas Recognition** 2267
S. Sutula, *Instituto de Microelectrónica de Barcelona;* C. Ferrer, *Instituto de Microelectrónica de Barcelona;* F. Serra-Graells, *Instituto de Microelectrónica de Barcelona*

16:18
B4L-E.2 **A Single Chip Computational Sensor System for Gamma Isotope Identification** 2271
Nathan Schemm, *University of Nebraska-Lincoln;* Bo Liang, *University of Nebraska-Lincoln;* Sina Balkir, *University of Nebraska-Lincoln;* Michael W. Hoffman, *University of Nebraska-Lincoln;* Mark Bauer, *University of Nebraska-Lincoln*

16:36
B4L-E.3 **A Frequency-Based Signature Gas Identification Circuit for S_nO_2 Gas Sensors** 2275
Kwan Ting Ng, *The University of Western Australia;* Farid Boussaid, *The University of Western Australia;* Amine Bermak, *Hong Kong University of Science and Technology*

16:54
B4L-E.4 **RF Inductive Sensors for Detection of Change in the Ionic Strength and pH of Liquid Samples** 2279
Siavash Saremi-Yarahmadi, *Imperial College London;* Olive H. Murphy, *Imperial College London;* Christofer Toumazou, *Imperial College London*

17:12
B4L-E.5 **An ISFET based Sensing Array with Sensor Offset Compensation and pH Sensitivity Enhancement** 2283
Yan Liu, *Imperial College of Science, Technology and Medicine;* Chris Toumazou, *Imperial College of Science, Technology and Medicine*

B4L-F Network Dynamics & Applications I (Lecture)

Time: Tuesday, June 1, 2010, 16:00 - 17:30
Place: Salon B
Chair(s): Jinhu Lu, *Chinese Academy of Sciences*
Wei Xing Zheng, *University of Western Sydney*

16:00
B4L-F.1 **EEG-Based Cognitive State Monitoring and Predition by using the Self-Constructing Neural Fuzzy System** 2287
Fu-Chang Lin, *National Chiao-Tung University;* Li-Wei Ko, *National Chiao-Tung University;* Shi-An Chen, *National Chiao-Tung University;* Ching-Fu Chen, *National Chiao-Tung University;* Chin-Teng Lin, *National Chiao-Tung University*

16:18
B4L-F.2 **Intelligent Approach for PET Volume Analysis** 2291
Mhd Saeed Sharif, *Brunel University;* Abbes Amira, *Brunel University;* Habib Zaidi, *Geneva University Hospital*

16:36
B4L-F.3 **A CNN Approach to Computing Arbitrary Boolean Functions** 2295
Eero Lehtonen, *University of Turku;* Jussi Poikonen, *University of Turku;* Mika Laiho, *University of Turku*

16:54
B4L-F.4 **On Passivity of Delayed Markovian Jump Systems Subject to Parametric Uncertainties** 2299
Baoyong Zhang, *Nanjing University of Science and Technology;* Wei Xing Zheng, *University of Western Sydney*

17:12
B4L-F.5 **Dynamics of Uncertain Neutral Stochastic Neural Networks with Markovian Jumping and Time-Varying Delays** 2303
Meng Dong, *Northeastern University;* Yingchun Wang, *Northeastern University;* Huaguang Zhang, *Northeastern University;* Zheng Song, *Northeastern University*

B4L-G Power Systems Modeling & Simulation (Lecture)

Time: Tuesday, June 1, 2010, 16:00 - 17:30
Place: Salon C
Chair(s): Juri Jatskevich, *University of British Columbia*
Chika Nwankpa, *Drexel University*

16:00
B4L-G.1 **Modeling Kita-Hon HVDC Link for Load Frequency Control of Eastern Japan 50-Hz Power System based on Application of the CampusWAMS** 2307
Changsong Li, *Kyushu Institute of Technology;* Yuji Okada, *Kyushu Institute of Technology;* Masayuki Watanabe, *Kyushu Institute of Technology;* Yasunori Mitani, *Kyushu Institute of Technology*

16:18
B4L-G.2 **An Eigenvalue Formulation for Determining Initial Conditions of Induction Machines in Dynamic Power System Simulations** 2311
Daniel K. Molzahn, *University of Wisconsin-Madison;* Bernard C. Lesieutre, *University of Wisconsin-Madison*

16:36
B4L-G.3 **Hardware Prototype to Emulate the Dynamics of Power System Generators with Field Programmable Analog Arrays** 2314
Anthony Deese, *Drexel University;* Juan C. Jiménez, *Drexel University;* Jon Berardino, *Drexel University;* Chika O. Nwankpa, *Drexel University*

16:54
B4L-G.4 **Averaged-Circuit Modeling of Line-Commutated Rectifiers for Transient Simulation Programs** 2318
Sina Chiniforoosh, *University of British Columbia;* Ali Davoudi, *University of illinois at Urbana-Champaign;* Juri Jatskevich, *University of British Columbia*

17:12
B4L-G.5 **Simulation and Analysis of Distributed PV Generation in a LV Network using MATLAB-Simulink** 2322
Jose R. Rodriguez, *IOC-UPC-Spain;* Felipe Ruiz, *DE-UTEM-Chile;* Domingo Biel, *IOC-UPC-Spain;* Francesc Guinjoan, *DEE-UPC-Spain*

B4L-H Digital Circuits (Lecture)

Time: Tuesday, June 1, 2010, 16:00 - 17:30
Place: Salon D
Chair(s): Linda DeBrunner, *Florida State University*
Ming-Dou Ker, *National Chiao Tung University*

16:00
B4L-H.1 **A Low-Jitter Video Clock Recovery Circuit** 2326
Hossam Ali, *Silicon Vision LLC.;* Emad Hegazi, *Ain Shams University*

16:18
B4L-H.2 **A Self-Learning Multiple-Class Classifier using Multi-Dimensional Quasi-Gaussian Analog Circuits** 2330
Zhouli Sun, *University of Tokyo;* Kyunghee Kang, *University of Tokyo;* Tadashi Shibata, *University of Tokyo*

16:36
B4L-H.3 **Implementation of the MFCC Front-End for Low-Cost Speech Recognition Systems** 2334
Ngoc-Vinh Vu, *La Trobe University;* Jim Whittington, *La Trobe University;* Hua Ye, *La Trobe University;* John Devlin, *La Trobe University*

16:54
B4L-H.4 **Low-Cost Low-Power Bypassing-Based Multiplier Design** 2338
Jin-Tai Yan, *Chung-Hua University;* Zhi-Wei Chen, *Chung-Hua University*

17:12
B4L-H.5 **Power Analysis Detectable Watermarks for Protecting Intellectual Property** 2342
John Goodwin, *University of Southampton;* Peter Wilson, *University of Southampton*

B4L-J VLSI Modeling & Optimization (Lecture)

Time: Tuesday, June 1, 2010, 16:00 - 17:30
Place: Salon J
Chair(s): Fathi Salem, *Michigan State University*
Radu Secareanu, *Motorola, Inc*

16:00
B4L-J.1 **Compact Substrate Models for Efficient Noise Coupling and Signal Isolation Analysis** 2346
Renatas Jakushokas, *University of Rochester;* Emre Salman, *University of Rochester;*
Eby G. Friedman, *University of Rochester;* Radu M. Secareanu, *Freescale Semiconductor;*
Olin L. Hartin, *Freescale Semiconductor;* Cynthia L. Recker, *Freescale Semiconductor*

16:18
B4L-J.2 **Effect of Body Biasing on Embedded SRAM Failure** 2350
Amin Khajeh, *University of California Irvine;* Ahmed M. Eltawil, *University of California Irvine;*
Fadi J. Kurdahi, *University of California Irvine*

16:36
B4L-J.3 **Networks-on-Chip Topology Optimization Subject to Power, Delay, and Reliability Constraints** 2354
Haytham Elmiligi, *University of Victoria;* Ahmed A. Morgan, *University of Victoria;*
M. Watheq El-Kharashi, *Mentor Graphics Egypt;* Fayez Gebali, *University of Victoria*

16:54
B4L-J.4 **Parallel Sparse Matrix Solver for Direct Circuit Simulations on FPGAs** 2358
Tarek Nechma, *University of Southampton;* Mark Zwoliński, *University of Southampton;*
Jeff Reeve, *University of Southampton*

17:12
B4L-J.5 **Parallel-Processing VLSI Architecture for Mixed Integer Linear Programming** 2362
Hiroki Noguchi, *Kobe University;* Junichi Tani, *Kobe University;* Yusuke Shimai, *Kobe University;*
Hiroshi Kawaguchi, *Kobe University;* Masahiko Yoshimoto, *Kobe University*

B4L-K Digital Audio & Speech Processing (Lecture)

Time: Tuesday, June 1, 2010, 16:00 - 17:30
Place: Salon K
Chair(s): Gwee Bah Hwee, *Nanyang Technological University*

16:00
B4L-K.1 **A Simplified Structure of Second-Order Volterra Filters for Nonlinear Acoustic Echo Cancellation** 2366
Jing Fu, *South China University of Technolog;* Wei-Ping Zhu, *Concordia University*

16:18
B4L-K.2 **A Modified TESPAR Algorithm for Wildlife Sound Classification** 2370
Marius Vasile Ghiurcau, *Technical University of Cluj-Napoca;* Corneliu Rusu, *Technical University of Cluj-Napoca;* Radu Ciprian Bilcu, *Nokia Research Center*

16:36
B4L-K.3 **Quasi-Periodic Signal Analysis using Harmonic Transform with Application to Voiced Speech Processing** 2374
Piotr Zubrycki, *Bialystok University of Technology;* Alexander Petrovsky, *Bialystok University of Technology*

16:54
B4L-K.4 **Complexity-Effective Dynamic Range Compression for Digital Hearing Aids** 2378
Kuo-Chiang Chang, *National Chiao Tung University;* Yu-Ting Kuo, *National Chiao Tung University;*
Tay-Jyi Lin, *National Chiao Tung University;* Chih-Wei Liu, *National Chiao Tung University*

B4L-L Circuit Theory & Techniques (Lecture)

Time: Tuesday, June 1, 2010, 16:00 - 17:30
Place: Salon L
Chair(s): Paul Sotiriadis, *Sotekco LLC, USA*

B4L-M Sigma-Delta Applications (Lecture)

Time: Tuesday, June 1, 2010, 16:00 - 17:30
Place: Salon M
Chair(s): Anas Hamoui, *McGill University*

B4L-N SPECIAL SESSION: Activity-Driven, Event Coding Vision Sensors (Lecture)

Time: Tuesday, June 1, 2010, 16:00 - 17:30
Place: Radio City Ballroom I
Chair(s): Tobi Delbruck, *ETH Zürich*
Bernabe Linares-Barranco, *Institute of Microelectronics, Sevilla*

B4L-P SPECIAL SESSION: Recent Theory & New Applications in Chaos Communication (Lecture)

Time: Tuesday, June 1, 2010, 16:00 - 17:30
Place: Radio City Ballroom II
Chair(s): Geza Kolumban, *Pazmany Peter Catholic University*
Tony Lawrance, *University of Warwick*

16:36
B4L-P.3 **Design and Simulation of a Cooperative Communication System based on DCSK/FM-DCSK** 2454
Jing Xu, *Xiamen University;* Weikai Xu, *Xiamen University;* Lin Wang, *Xiamen University;* Guanrong Chen, *City University of Hong Kong*

16:54
B4L-P.4 **Performance Evaluation of Error-Correcting Scheme Without Redundancy Code for Noncoherent Chaos Communications** 2458
Shintaro Arai, *Aichi University of Technology;* Yoshifumi Nishio, *Tokushima University;* Takaya Yamazato, *Nagoya University;* Shinji Ozawa, *Aichi University of Technology*

17:12
B4L-P.5 **Performance Analysis of Differential Chaos Shift-Keying Over an M-Distributed Fading Channel** 2462
Georges Kaddoum, *LACIME laboratory, ETS;* Pascal Chargé, *LATTIS Laboratory;* Daniel Roviras, *LAETITIA Laboratory;* Francois Gagnon, *LACIME laboratory, ETS*

B5P-Q Low Power Design for Nano-Circuits (Poster)

Time: Tuesday, June 1, 2010, 9:30 - 11:00
Place: Times Square 1
Chair(s): Shyh-Jye Jou, *National Chiao Tung University*
Mona E. Zaghloul, *George Washington University*

B5P-Q.1 **Robust Low Power Design in Nano-CMOS Technologies** 2466
Touqeer Azam, *University of Glasgow;* David R.S. Cumming, *University of Glasgow*

B5P-Q.2 **Ultra-Wide-Band Low Noise Amplifier using Inductive Feedback in 90-nm CMOS Technology** 2470
Heng-Ming Hsu, *National Chung-Hsing University;* Tai-Hsin Lee, *National Chung-Hsing University;* Jhao-Siang Huang, *National Chung-Hsing University*

B5P-Q.3 **Adiabatic SRAM with a Shared Access Port using a Controlled Ground Line and Step-Voltage Circuit** 2474
Shunji Nakata, *NTT Corporation;* Hirotsugu Suzuki, *Kanazawa University;* Ryota Honda, *Kanazawa University;* Takahito Kusumoto, *Kanazawa University;* Shin'ichiro Mutoh, *NTT Corporation;* Hiroshi Makino, *Osaka Institute of Technology;* Masayuki Miyama, *Kanazawa University;* Yoshio Matsuda, *Kanazawa University*

B5P-Q.4 **A New Substrate Model and Parameter Extraction Method for DNW RF MOSFETs** 2478
Jun Liu, *Hangzhou Dianzi University;* Lingling Sun, *Hangzhou Dianzi University;* Zhiping Yu, *Hangzhou Dianzi University;* Marissa Condon, *Dublin City University*

B5P-Q.5 **A Forward Body Bias Generator for Digital CMOS Circuits with Supply Voltage Scaling** 2482
Maurice Meijer, *NXP Semiconductors;* José Pineda de Gyvez, *NXP Semiconductors / Technical University of Eindhoven;* Ben Kup, *NXP Semiconductors;* Bert van Uden, *NXP Semiconductors;* Peter Bastiaansen, *NXP Semiconductors;* Marco Lammers, *NXP Semiconductors;* Maarten Vertregt, *NXP Semiconductors*

B5P-R Design for Variability in Nano-Electronics & Systems (Poster)

Time: Tuesday, June 1, 2010, 9:30 - 11:00
Place: Times Square 2
Chair(s): Sorin Cotofana, *Delft University of Technology*
Chin-Wei Liu, *National Chiao-Tung University*

B5P-R.1 **Selective Redundancy-Based Design Techniques for the Minimization of Local Delay Variations** 2486
Milos Stanisavljevic, *EPFL;* Alexandre Schmid, *EPFL;* Yusuf Leblebici, *EPFL*

B5P-S Blind Signal Processing (Poster)

Time: Tuesday, June 1, 2010, 9:30 - 11:00
Place: Times Square 3
Chair(s): Shoji Makino, *University of Tsukuba*
Aurelio Uncini, *Universita di Roma La Sapienza*

B5P-T DSP for Communications (Poster)

Time: Tuesday, June 1, 2010, 9:30 - 11:00
Place: Times Square 4
Chair(s): Mohsin Jamali, *University of Toledo*
Yoshikazu Miyanaga, *Hokkaido University*

B5P-U Spiking Networks & Network Algorithms (Poster)

Time: Tuesday, June 1, 2010, 9:30 - 11:00
Place: Times Square 5
Chair(s): John Harris, *University of Florida*
Shih-Chii Liu, *ETH Zürich*

B5P-V Network Dynamics & Applications II (Poster)

Time: Tuesday, June 1, 2010, 9:30 - 11:00
Place: Times Square 6
Chair(s): Ronald Tetzlaff, *TU Dresden*
Wei Xing Zheng, *University of Western Sydney*

B5P-W CAD – I (Poster)

Time: Tuesday, June 1, 2010, 9:30 - 11:00
Place: Times Square 7
Chair(s): Shigetoshi Nakatake, *University of Kitakyushu*

B5P-X CAD – II (Poster)

Time: Tuesday, June 1, 2010, 9:30 - 11:00
Place: Times Square 8
Chair(s): Rolf Drechsler, *University of Bremen*

B6P-Q Digital Video I (Poster)

Time: Tuesday, June 1, 2010, 11:20 - 12:50
Place: Times Square 1
Chair(s): M. Omair Ahmad, *Concordia University*

B6P-R Digital Video II (Poster)

Time: Tuesday, June 1, 2010, 11:20 - 12:50
Place: Times Square 2
Chair(s): M.N.S. Swamy, *Concordia University*
Sergios Theodoridis, *University of Athens*

B6P-S Digital Audio (Poster)

Time: Tuesday, June 1, 2010, 11:20 - 12:50
Place: Times Square 3
Chair(s): Tapio Saramäki, *Tampere University of Technology*
Wan-Chi Siu, *The Hong Kong Polytechnic University*

B6P-T Digital Signal Processing Implementation (Poster)

Time: Tuesday, June 1, 2010, 11:20 - 12:50
Place: Times Square 4
Chair(s): Oscar Gustafsson, *Linköping University*
David Tay, *La Trobe University*

B6P-U Digital Filters (Poster)

Time: Tuesday, June 1, 2010, 11:20 - 12:50
Place: Times Square 5
Chair(s): Mrityunjoy Chakraborty, *Indian Institute of Technology, Kharagpur*
Chien-Cheng Tseng, *National Kaohsiung First University of Science & Technology*

B6P-V Power Electronics I (Poster)

Time: Tuesday, June 1, 2010, 11:20 - 12:50
Place: Times Square 6
Chair(s): Marian Kazimierczuk, *Wright State University*
Tadashi Suetsugu, *Fukuoka University*

B6P-W Power Electronics II (Poster)

Time: Tuesday, June 1, 2010, 11:20 - 12:50
Place: Times Square 7
Chair(s): Tsorng-Juu Peter Liang, *National Cheng Kung University*
Tadashi Suetsugu, *Fukuoka University*

B6P-X Energy Systems Modeling & Analysis (Poster)

Time: Tuesday, June 1, 2010, 11:20 - 12:50
Place: Times Square 8
Chair(s): Bernard Lesieutre, *University of Wisconsin-Madison*
Chika Nwankpa, *Drexel University*

B7P-Q Live Demonstrations of Circuits & Systems III (Poster)

Time: Tuesday, June 1, 2010, 14:10 - 17:30
Place: Times Square 1
Chair(s): Philipp Häfliger, *University of Oslo*

B7P-R Live Demonstrations of Circuits & Systems IV (Poster)

Time: Tuesday, June 1, 2010, 14:10 - 17:30
Place: Times Square 2
Chair(s): Philipp Häfliger, *University of Oslo*

Wednesday, June 2, 2010

C1L-A SPECIAL SESSION: Circuits & Systems Concept Inventory (Lecture)

Time: Wednesday, June 2, 2010, 9:30 - 11:00
Place: Grand Ballroom E
Chair(s): Tokunbo Ogunfunmi, *Santa Clara University*
Joos Vandewalle, *Katholieke Universiteit Leuven*

9:30
C1L-A.1 **A Concepts Inventory for an Attractive Teaching Approach of the Mathematics of Circuits and Systems** 2800
Joos Vandewalle, *Katholieke Universiteit Leuven*

9:48
C1L-A.2 **A Concept Inventory for an Electric Circuits Course: Rationale and Fundamental Topics** 2804
Tokunbo Ogunfunmi, *Santa Clara University;* Mahmudur Rahman, *Santa Clara University*

10:06
C1L-A.3 **A Set of Questions for a Concept Inventory for a DC Circuits Course** 2808
Mahmudur Rahman, *Santa Clara University;* Tokunbo Ogunfunmi, *Santa Clara University*

10:24
C1L-A.4 **A First Lab in Filter Design: Power Line Hum Suppression in an ECG Signal** 2812
Hsin-I Liu, *University of California, Berkeley;* Jonathan Kotker, *University of California, Berkeley;* Babak Ayazifar, *University of California, Berkeley*

C1L-B Complex Amplifiers (Lecture)

Time: Wednesday, June 2, 2010, 9:30 - 11:00
Place: Grand Ballroom F
Chair(s): Gaetano Palumbo, *University of Catania*

9:30
C1L-B.1 **A Novel Low-Power High-Speed Rail-to-Rail Class-B Buffer Amplifier for LCD Output Drivers** 2816
Davide Marano, *Università di Catania;* Gaetano Palumbo, *Università di Catania;* Salvatore Pennisi, *Università di Catania*

9:48
C1L-B.2 **Rail-to-Rail Low-Power Fully Differential OTA Utilizing Adaptive Biasing and Partial Feedback** 2820
Tuan Vu Cao, *University of Oslo;* Dag T. Wisland, *University of Oslo;* Tor Sverre Lande, *University of Oslo;* Farshad Moradi, *University of Oslo*

10:06
C1L-B.3 **Linear-in-dB Variable Gain Amplifier with PWL Exponential Gain Control** 2824
D. Moro-Frías, *INAOE;* M.T. Sanz-Pascual, *INAOE;* C.A. de la Cruz-Blas, *Public University of Navarra*

10:24
C1L-B.4 **Two-Stage Fully-Differential Inverter-Based Self-Biased CMOS Amplifier with High Efficiency** 2828
M. Figueiredo, *Universidade Nova de Lisboa;* E. Santin, *Universidade Nova de Lisboa;* J. Goes, *Universidade Nova de Lisboa;* R. Santos-Tavares, *Universidade Nova de Lisboa;* G. Evans, *Faculdade de Ciências da Universidade de Lisboa*

10:42
C1L-B.5 **Low-Power Dual-Active Class-AB Buffer Amplifier with Self-Biasing Network for LCD Column Drivers** 2832
Davide Marano, *Università di Catania;* Gaetano Palumbo, *Università di Catania;* Salvatore Pennisi, *Università di Catania*

C1L-C Digital Signal Processing for Communications I (Lecture)

Time: Wednesday, June 2, 2010, 9:30 - 11:00
Place: Grand Ballroom G
Chair(s): Yoshikazu Miyanaga, *Hokkaido University*
Thanos Stouraitis, *University of Patras*

C1L-D Transcoding & Image Segmentation (Lecture)

Time: Wednesday, June 2, 2010, 9:30 - 11:00
Place: Grand Ballroom H
Chair(s): Oscar Au, *Hong Kong University of Science & Technology*
Ebroul Izquirdo, *University of London*

C1L-E Giga-Scale Arrays & Architectures (Lecture)

Time: Wednesday, June 2, 2010, 9:30 - 11:00
Place: Salon A
Chair(s): Ching-Te Chiu, *National Tsing Hwa University*
Danella Zhao, *University of Louisiana at Lafayette*

C1L-F Analog CAD & Other Topics (Lecture)

Time: Wednesday, June 2, 2010, 9:30 - 11:00
Place: Salon B
Chair(s): Eby Friedman, *University of Rochester*

10:42
C1L-F.5 **Multiobjective Optimization with an Asymptotically Uniform Coverage of Pareto Front** 2912
Jan Míchal, *Silicon & Software Systems;* Josef Dobeš, *Czech Technical University in Prague;*
David Černý, *Czech Technical University in Prague*

C1L-G Control of Power Converter Circuits (Lecture)

Time: Wednesday, June 2, 2010, 9:30 - 11:00
Place: Salon C
Chair(s): Eduard Alarcon, *Technical University of Catalunya*
Juri Jatskevich, *University of British Columbia*

9:30
C1L-G.1 **Minimized Right-Half Plane Zero Effect on Fast Boost DC-DC Converter Achieved by Adaptive Voltage Positioning Technique** 2916
Jie-Yu Liao, *National Chiao Tung University;* Han-Hsiang Huang, *National Chiao Tung University;*
Ke-Horng Chen, *National Chiao Tung University*

9:48
C1L-G.2 **Zero-Derivative Method of Analog Controller Design Applied to Step-Down DC-DC Converters** 2920
Vratislav Michal, *CPE-Lyon / ST-Ericsson;* Christophe Premont, *ST-Ericsson;* Gael Pillonet, *CPE-Lyon;*
Nacer Abouchi, *CPE-Lyon*

10:06
C1L-G.3 **Minimum Hardware Serial PID Regulator for High Efficiency, Low Power Digital DC-DC Converters** 2924
Marco Meola, *University of Trieste;* Sergio Carrato, *University of Trieste;* Angelo Bovino, *Infineon Technologies;* Jürgen Schäfer, *Infineon Technologies;* Emanuele Bodano, *Infineon Technologies*

10:24
C1L-G.4 **A Frequency Domain Approach for Controlling Chaos in Switching Converters** 2928
E. Rodríguez, *UPC BarcelonaTech;* E. Alarcón, *UPC BarcelonaTech;* H.H.C. Iu,
The University of Western Australia; A. El Aroudi, *Universitat Rovira i Virgili*

10:42
C1L-G.5 **Bifurcation Behavior of a Boost Converter Under Voltage Controlled Pulse Skipping Modulation in the Light of 1-D Discontinuous Map Model** 2932
Santanu Kapat, *University of Illinois at Urbana-Champaign;* Soumitro Banerjee, *Indian Institute of Science;*
Amit Patra, *Indian Institute of Technology Kharagpur*

C1L-H Wireless Technologies for Medical Applications I (Lecture)

Time: Wednesday, June 2, 2010, 9:30 - 11:00
Place: Salon D
Chair(s): Philipp Häfliger, *University of Oslo*
Franco Maloberti, *University of Pavia*

9:30
C1L-H.1 **A Mini-Invasive Multi-Function Biomedical Pressure Measurement System ASIC** 2936
Chua-Chin Wang, *National Sun Yat-Sen University;* Chi-Chun Huang, *National Sun Yat-Sen University;*
Yi-Cheng Liu, *National Sun Yat-Sen University;* Victor Pikov, *Huntington Medical Research Institute;*
Doron Shmilovitz, *Tel Aviv University*

9:48
C1L-H.2 **A Wireless Neural/EMG Telemetry System for Freely Moving Insects** 2940
Reid R. Harrison, *University of Utah;* Ryan J. Kier, *University of Utah;* Anthony Leonardo, *Howard Hughes Medical Institute;* Haleh Fotowat, *Baylor College of Medicine;* Raymond Chan, *Baylor College of Medicine;*
Fabrizio Gabbiani, *Baylor College of Medicine*

C1L-J VLSI Circuits & Systems for Video Applications (Lecture)

Time: Wednesday, June 2, 2010, 9:30 - 11:00
Place: Salon J
Chair(s): Dimitrios Soudris, *National Technical University of Athens*
Zhongfeng Wang, *Broadcom Corp.*

C1L-K Adaptive Signal Processing (Lecture)

Time: Wednesday, June 2, 2010, 9:30 - 11:00
Place: Salon K
Chair(s): Xinping Huang, *Communications Research Centre Canada*
Wu-Sheng Lu, *University of Victoria, Canada*

9:30
C1L-K.1 **Least-Squares Adaptation of Affine Combinations of Multiple Adaptive Filters** 2976
Luis A. Azpicueta-Ruiz, *Universidad Carlos III de Madrid;* Marcus Zeller, *University of Erlangen-Nuremberg;* Aníbal R. Figueiras-Vidal, *Universidad Carlos III de Madrid;* Jerónimo Arenas-García, *Universidad Carlos III de Madrid*

9:48
C1L-K.2 **An Improved Exponentiated Stochastic Gradient Algorithm** 2980
Corneliu Rusu, *Technical University of Cluj-Napoca;* Colin F.N. Cowan, *The Queen's University of Belfast*

10:06
C1L-K.3 **Reduced-Rank BEACON Algorithm based on Joint Iterative Optimization of Adaptive Filters** 2984
Patrick Clarke, *University of York;* Rodrigo C de Lamare, *University of York*

10:24
C1L-K.4 **Lyapunov-Based Stability Analysis of Supervised and Unsupervised Adaptive Algorithms** 2988
Celso de Sousa Júnior, *University of Campinas;* Romis Attux, *University of Campinas;* Ricardo Suyama, *University of Campinas;* João M.T. Romano, *University of Campinas*

10:42
C1L-K.5 **Color Video Denoising based on Adaptive Color Space Conversion** 2992
Jingjing Dai, *Hong Kong University of Science and Technology;* Oscar C. Au, *Hong Kong University of Science and Technology;* Wen Yang, *Hong Kong University of Science and Technology;* Chao Pang, *Hong Kong University of Science and Technology;* Feng Zou, *Hong Kong University of Science and Technology;* Xing Wen, *Hong Kong University of Science and Technology*

C1L-L Wireless Communications Circuits II (Lecture)

Time: Wednesday, June 2, 2010, 9:30 - 11:00
Place: Salon L
Chair(s): Atila Alvandpour, *Linköping University*
Andrea Neviani, *University of Padova*

9:30
C1L-L.1 **A 5-GHz Fractional-N Phase-Locked Loop with Spur Reduction Technique in 0.13-µm CMOS** 2996
Wei-Hao Chiu, *National Taiwan University;* Chien-Yuan Cheng, *National Taiwan University;* Tsung-Hsien Lin, *National Taiwan University*

9:48
C1L-L.2 **Direct DDFS FM Modulator with Baseband Interpolator** 3000
Carlos Bernal, *University of Zaragoza;* Pilar Molina Gaudo, *University of Zaragoza;* Arturo Mediano, *University of Zaragoza*

10:06
C1L-L.3 **A 10Mb/s 4ns Jitter Direct Conversion Low Modulation Index FSK Demodulator for Low-Energy Body Sensor Network** 3004
Taehwan Roh, *KAIST;* Joonsung Bae, *KAIST;* Hoi-Jun Yoo, *KAIST*

10:24
C1L-L.4 **Phase Amplitude Converter with Conditional Shift Operation** 3008
Hiroomi Hikawa, *Kansai University;* Taketo Namba, *Kansai University*

10:42
C1L-L.5 **System Level Power Optimizations for EPC RFID Tags to Improve Sensitivity using Load Power Shaping and Operation Scheduling** 3012
Yunxiao Ling, *The Hong Kong University of Science and Technology;* Jun Yi, *The Hong Kong University of Science and Technology;* Chi-Ying Tsui, *The Hong Kong University of Science and Technology;* Wing-Hung Ki, *The Hong Kong University of Science and Technology*

C1L-M Data Converter Techniques (Lecture)

Time: Wednesday, June 2, 2010, 9:30 - 11:00
Place: Salon M
Chair(s): Degang Chen, *Iowa State University*

9:30
C1L-M.1 **A 0.22 pJ/Step Subsampling ADC with Fast Input-Tracking Sampling and Simplified OPAMP Sharing** 3016
Guanghua Shu, *Fudan University;* Fan Ye, *Fudan University;* Yao Guo, *Fudan University;* Mingjun Fan, *Fudan University;* Junyan Ren, *Fudan University;* Jun Xu, *Fudan University;* Ning Li, *Fudan University;* Cheng Chen, *Cadence Design Systems*

9:48
C1L-M.2 **Enhancement of Comparator Operation Speed by using Negative-Differential-Resistance Devices** 3020
Tomohiko Ebata, *Sophia University;* Uichiro Omae, *Sophia University;* Kazuya Machida, *Sophia University;* Keita Hoshi, *Sophia University;* Takao Waho, *Sophia University*

10:06
C1L-M.3 **A Fine-Resolution Time-to-Digital Converter for a 5GS/s ADC** 3024
Kenneth A. Townsend, *University of Calgary;* Andrew R. Macpherson, *University of Calgary;* James W. Haslett, *University of Calgary*

10:24
C1L-M.4 **INL based Dynamic Performance Estimation for ADC BIST** 3028
Jingbo Duan, *Iowa State University;* Le Jin, *National Semiconductor;* Degang Chen, *Iowa State University*

10:42
C1L-M.5 **Linearity Testing of ADCs using Low Linearity Stimulus and Kalman Filtering** 3032
Bharath K Vasan, *Iowa State University;* Randall L. Geiger, *Iowa State University;* Degang J. Chen, *Iowa State University*

C1L-N SPECIAL SESSION: Directional Transforms for Image Coding (Lecture)

Time: Wednesday, June 2, 2010, 9:30 - 11:00
Place: Radio City Ballroom I
Chair(s): Jizheng Xu, *Microsoft Research Asia*
Bing Zeng, *Hong Kong University of Science & Technology*

9:30
C1L-N.1 **An Overview of Directional Transforms in Image Coding** 3036
Jizheng Xu, *Microsoft Research Asia;* Bing Zeng, *The Hong Kong University of Science and Technology;* Feng Wu, *Microsoft Research Asia*

9:48
C1L-N.2 **Decoding of Directional DCT-Coded Images: A Total Variational Approach with Directionality** 3040
Jingjing Fu, *The Hong Kong University of Science and Technology;* Bing Zeng, *The Hong Kong University of Science and Technology*

C1L-P SPECIAL SESSION: Digital Forensics (Lecture)

Time: Wednesday, June 2, 2010, 9:30 - 11:00
Place: Radio City Ballroom II
Chair(s): Anthony T. S. Ho, *University of Surrey*
Chang-Tsun Li, *University of Warwick*

C2L-A SPECIAL SESSION: Thinking out of the Box: Multimedia Processing Beyond Standards (Lecture)

Time: Wednesday, June 2, 2010, 11:20 - 12:50
Place: Grand Ballroom E
Chair(s): Eduardo A. B. da Silva, *Universidade Federal do Rio de Janeiro*
Sergio L Netto, *Universidade Federal do Rio de Janeiro*

11:56
C2L-A.3 **Massively Parallel Processing of Signals in Dense Microphone Arrays** 3080
Amir Said, *Hewlett-Packard Laboratories;* Ton Kalker, *Hewlett-Packard Laboratories;*
Bowon Lee, *Hewlett-Packard Laboratories;* Majid Fozunbal, *Hewlett-Packard Laboratories*

12:14
C2L-A.4 **On the Compression of ECG Records Employing Triangular Elements and Analysis-by-Synthesis Modeling** 3084
Fellipe Dos Santos Guimarães, *State University of Rio de Janeiro;* Lisandro Lovisolo, *State University of Rio de Janeiro;* Manuel Blanco-Velasco, *Universidad de Alcalá;* Fernando Cruz-Roldán, *Universidad de Alcalá*

C2L-B Interfaces for Wireless Sensor Networks (Lecture)

Time: Wednesday, June 2, 2010, 11:20 - 12:50
Place: Grand Ballroom F
Chair(s): Byunghoo Jung, *Purdue University*

11:20
C2L-B.1 **A Full-Scale CMOS Voltage-to-Frequency Converter for WSN Signal Conditioning** 3088
B. Calvo, *University of Zaragoza;* N. Medrano, *University of Zaragoza;* S. Celma, *University of Zaragoza*

11:38
C2L-B.2 **A Low Power Interface Circuit for Resistive Sensors with Digital Offset Compensation** 3092
El Mehdi Boujamaa, *University of Montpellier;* Boris Alandry, *University of Montpellier;* Souha Hacine, *University of Montpellier;* Laurent Latorre, *University of Montpellier;* Frederick Mailly, *University of Montpellier;* Pascal Nouet, *University of Montpellier*

11:56
C2L-B.3 **A 0.5 V-1.4 V Supply-Independent Frequency-Based Analog-to-Digital Converter with Fast Start-Up Time for Wireless Sensor Networks** 3096
Wouter Volkaerts, *Katholieke Universiteit Leuven;* Bart Marien, *Katholieke Universiteit Leuven;*
Hans Danneels, *Katholieke Universiteit Leuven;* Valentijn De Smedt, *Katholieke Universiteit Leuven;*
Patrick Reynaert, *Katholieke Universiteit Leuven;* Wim Dehaene, *Katholieke Universiteit Leuven;*
Georges Gielen, *Katholieke Universiteit Leuven*

12:14
C2L-B.4 **A ΔΣ ADC for Low Power Sensor Applications** 3100
Jarno Salomaa, *Helsinki University of Technology;* Mikail Yucetas, *Helsinki University of Technology;*
Antti Kalanti, *Helsinki University of Technology;* Lasse Aaltonen, *Helsinki University of Technology;*
Kari Halonen, *Helsinki University of Technology*

12:32
C2L-B.5 **A Wearable, Wireless Electronic Interface for Textile Sensors** 3104
Lin Shu, *The Hong Kong Polytechnic University;* Xiao Ming Tao, *The Hong Kong Polytechnic University;*
David Dagan Feng, *The Hong Kong Polytechnic University*

C2L-C Digital Signal Processing for Communications II (Lecture)

Time: Wednesday, June 2, 2010, 11:20 - 12:50
Place: Grand Ballroom G
Chair(s): Paulo Diniz, *Universidade Federal do Rio de Janeiro*
Behrouz Nowrouzian, *University of Alberta*

11:20
C2L-C.1 **Robust Distributed Beamforming for Two-Way Wireless Relay Systems** 3108
Chunguo Li, *Southeast University;* Luxi Yang, *Southeast University;* Wei-Ping Zhu, *Concordia University*

C2L-D Circuits for Biomedical Systems II (Lecture)

Time: Wednesday, June 2, 2010, 11:20 - 12:50
Place: Grand Ballroom H
Chair(s): Yong Lian, *National University of Singapore*
Andrew Mason, *Michigan State University, MI*

C2L-E Simulation & Modeling of Nano-Electronics & Giga-Scale Systems (Lecture)

Time: Wednesday, June 2, 2010, 11:20 - 12:50
Place: Salon A
Chair(s): Garrett Rose, *Polytechnic Institute of NYU*
Lan-Da Van, *National Chiao Tung University*

11:20
C2L-E.1 **A New Modified Nodal Analysis for Nano-Scale Memristor Circuit Simulation** 3148
Hao Yu, *Nanyang Technological University;* Wei Fei, *Nanyang Technological University*

11:38
C2L-E.2 **A Novel Scalable Parallel Architecture for Biological Neural Simulations** 3152
Peyman Pourhaj, *University of Saskatchewan;* Daniel H.-Y. Teng, *University of Saskatchewan;* Khan Wahid, *University of Saskatchewan;* Seok-Bum Ko, *University of Saskatchewan*

11:56
C2L-E.3 **Genetic Algorithm based Topology Generation for Application Specific Network-on-Chip** 3156
Naveen Choudhary, *Malaviya National Institute of Technology;* M.S. Gaur, *Malaviya National Institute of Technology;* V. Laxmi, *Malaviya National Institute of Technology;* V. Singh, *Indian Institute of Science*

12:14
C2L-E.4 **FAST: A Simulation Framework for Solving Large-Scale Probabilistic Inverse Problems in Nano-Biomolecular Circuits** 3160
Ming Gu, *Michigan State University;* Yang Liu, *Michigan State University;* Shantanu Chakrabartty, *Michigan State University*

C2L-F Logic & High-Level Synthesis (Lecture)

Time: Wednesday, June 2, 2010, 11:20 - 12:50
Place: Salon B
Chair(s): Philippe Coussy, *Université de Bretagne-Sud*

11:20
C2L-F.1 **Rapid Design Space Exploration for Multi Parametric Optimization of VLSI Designs** 3164
Anirban Sengupta, *Ryerson University;* Reza Sedaghat, *Ryerson University;* Zhipeng Zeng, *Ryerson University*

11:38
C2L-F.2 **A Memory Mapping Approach for Parallel Interleaver Design with Multiples Read and Write Accesses** 3168
C. Chavet, *Université de Bretagne-Sud;* P. Coussy, *Université de Bretagne-Sud*

11:56
C2L-F.3 **Improving Redundancy Addition and Removal using Unreachable States for Sequential Circuits** 3172
Xiaoqing Yang, *The Chinese University of Hong Kong;* Zigang Xiao, *The Chinese University of Hong Kong;* Y.L. Wu, *The Chinese University of Hong Kong*

12:14
C2L-F.4 **A Framework for Fast Design Space Exploration using Fuzzy Search for VLSI Computing Architectures** 3176
Zhipeng Zeng, *Ryerson University;* Reza Sedaghat, *Ryerson University;* Anirban Sengupta, *Ryerson University*

12:32
C2L-F.5 **Register Relocation to Optimize Clock Network for Multi-Domain Clock Skew Scheduling** 3180
Liang Yang, *Chinese Academy of Sciences;* Baoxia Fan, *Chinese Academy of Sciences;* Ming Cong, *Chinese Academy of Sciences;* Jiye Zhao, *Chinese Academy of Sciences*

C2L-G Switched Capacitor Converters & Power Amplifiers (Lecture)

Time: Wednesday, June 2, 2010, 11:20 - 12:50
Place: Salon C
Chair(s): Adrian Ioinovici, *Holon Institute of Technology*
Marian Kazimierczuk, *Wright State University*

11:20
C2L-G.1 **Analysis and Design of a Step-Down Switched-Capacitor-Based Converter for Low-Power Application** 3184
Chia-Ling Wei, *National Cheng Kung University;* Hsiu-Hui Yang, *National Cheng Kung University*

11:38
C2L-G.2 **A Switched-Capacitor Inverter using Series/Parallel Conversion** 3188
Youhei Hinago, *Tokyo University of Science;* Hirotaka Koizumi, *Tokyo University of Science*

11:56
C2L-G.3 **A New Visit to an Old Problem in Switched-Capacitor Converters** 3192
Chun-Kit Cheung, *Hong Kong Polytechnic University;* Siew-Chong Tan, *Hong Kong Polytechnic University;* Y.M. Lai, *Hong Kong Polytechnic University;* Chi K. Tse, *Hong Kong Polytechnic University*

12:14
C2L-G.4 **An Enhanced Switching Policy for Buck-Derived Multi-Level Switching Power Amplifiers** 3196
Albert Garcia i Tormo, *Technical University of Catalunya;* Alberto Poveda, *Technical University of Catalunya;* Eduard Alarcón, *Technical University of Catalunya;* Henk Jan Bergveld, *NXP Semiconductors;* Berry Buter, *NXP Semiconductors;* Ravi Karadi, *NXP Semiconductors*

12:32
C2L-G.5 **Effect of MOSFET Gate-to-Drain Parasitic Capacitance on Class-E Power Amplifier** 3200
Xiuqin Wei, *Chiba University;* Hiroo Sekiya, *Chiba University;* Shingo Kuroiwa, *Chiba University;* Tadashi Suetsugu, *Fukuoka University;* Marian K. Kazimierczuk, *Wright State University*

C2L-H Layout, Interconnects & Clock/Supply Networks (Lecture)

Time: Wednesday, June 2, 2010, 11:20 - 12:50
Place: Salon D
Chair(s): Malgorzata Chrzanowska-Jeske, *Portland State University*
Mohamed Elgamel, *University of Lousiana at Lafayette*

11:20
C2L-H.1 **Analysis of Layout Density in FinFET Standard Cells and Impact of Fin Technology** 3204
Massimo Alioto, *University of Siena*

11:38
C2L-H.2 **Methodology for Multi-Layer Interdigitated Power and Ground Network Design** 3208
Renatas Jakushokas, *University of Rochester;* Eby G. Friedman, *University of Rochester*

11:56
C2L-H.3 **A Clock Network of Distributed ADPLLs using an Asymmetric Comparison Strategy** 3212
A. Korniienko, *CEA, LETI, MINATEC;* E. Colinet, *CEA, LETI, MINATEC;* G. Scorletti, *Ecole Centrale de Lyon;* E. Blanco, *Ecole Centrale de Lyon;* D. Galayko, *Curie University;* J. Juillard, *SUPELEC*

12:14
C2L-H.4 **A 1-Change-in-4 Delay-Insensitive Interchip Link** 3216
Anand Chandrasekaran, *Stanford University;* Kwabena Boahen, *Stanford University*

12:32
C2L-H.5 **Optimization of Clock-Gating Structures for Low-Leakage High-Performance Applications** 3220
Javier Castro, *Instituto de Microelectrónica de Sevilla-CNM-CSIC/Universidad de Sevilla;*
Pilar Parra, *Instituto de Microelectrónica de Sevilla-CNM-CSIC/Universidad de Sevilla;*
Antonio J. Acosta, *Instituto de Microelectrónica de Sevilla-CNM-CSIC/Universidad de Sevilla*

C2L-J Networks on Chip (Lecture)

Time: Wednesday, June 2, 2010, 11:20 - 12:50
Place: Salon J
Chair(s): Dimitrios Soudris, *National Technical University of Athens*
Viktor Öwall, *Lund University*

11:20
C2L-J.1 **Power-Aware NoC Router using Central Forecasting-Based Dynamic Virtual Channel Allocation** 3224
Amir-Mohammad Rahmani, *University of Turku;* Masoud Daneshtalab, *University of Turku;*
Pasi Liljeberg, *University of Turku;* Hannu Tenhunen, *University of Turku*

11:38
C2L-J.2 **An Efficient Routing Algorithm for Irregular Mesh NoCs** 3228
Parisa Mahdavinia, *Sharif University of Technology;* Hamid Sarbazi Azad, *Sharif University of Technology*

11:56
C2L-J.3 **Communication-Aware Application Mapping and Scheduling for NoC-Based MPSoCs** 3232
Heng Yu, *National University of Singapore;* Yajun Ha, *National University of Singapore;*
Bharadwaj Veeravalli, *National University of Singapore*

12:14
C2L-J.4 **Improving the Performance of Deadlock Recovery based Routing in Irregular Mesh NoCs using Added Mesh-Like Links** 3236
Mahdieh Hosseingholi, *Sharif University of Technology;* Ali Sharif Ahmadian, *Sharif University of Technology;*
Hamid Sarbazi-Azad, *Sharif University of Technology*

12:32
C2L-J.5 **Asynchronous BFT for Low Power Networks on Chip** 3240
Mohamed A. Abd El ghany, *German University in Cairo;* Magdy A. El-Moursy, *Mentor Graphics;*
Darek Korzec, *German University in Cairo;* Mohammed Ismail, *The Ohio State University*

C2L-K 3D Video & Multimedia Display Technologies (Lecture)

Time: Wednesday, June 2, 2010, 11:20 - 12:50
Place: Salon K
Chair(s): Jen-Shiun Chiang, *Tamkang University*
Xiaokang Yang, *Shanghai Jiaotong University*

11:20
C2L-K.1 **Correcting Unsynchronized Zoom in 3D Video** 3244
Colin Doutre, *University of British Columbia;* Mahsa T. Pourazad, *University of British Columbia;*
Alexis Tourapis, *Dolby Laboratories;* Panos Nasiopoulos, *University of British Columbia;*
Rabab K. Ward, *University of British Columbia*

11:38
C2L-K.2 **Depth Maps Interpolation from Existing Pairs of Keyframes and Depth Maps for 3D Video Generation** 3248
Hung-Ming Wang, *National Cheng Kung University;* Chun-Hao Huang, *National Cheng Kung University;*
Jar-Ferr Yang, *National Cheng Kung University*

11:56
C2L-K.3 **Image-Based Rendering of Ancient Chinese Artifacts for Multi-View Displays – A Multi-Camera Approach** 3252
Z.Y. Zhu, *The University of Hong Kong;* K.T. Ng, *The University of Hong Kong;* S.C. Chan, *The University of Hong Kong;* H.Y. Shum, *Microsoft Corporation*

12:14
C2L-K.4 **Dynamic Clipping Ratio Determination for Global Backlight Dimming in LCD** 3256
Philippe Lavole, *Pohang University of Science and Technology;* Sung-Kyu Lee, *Pohang University of Science and Technology;* Suk-Ju Kang, *Pohang University of Science and Technology;* Young Hwan Kim, *Pohang University of Science and Technology*

12:32
C2L-K.5 **An Organic Complementary Differential Amplifier for Flexible AMOLED Applications** 3260
Vaibhav Vaidya, *University of Washington;* Denise M. Wilson, *University of Washington;* Xiaohong Zhang, *Georgia Institute of Technology;* Bernard Kippelen, *Georgia Institute of Technology*

C2L-M MEMs Interfaces (Lecture)

Time: Wednesday, June 2, 2010, 11:20 - 12:50
Place: Salon M
Chair(s): Hanspeter Schmid, *Fachhochschule Nordwestschweiz*

11:20
C2L-M.1 **Drive and Sense Interface for Gyroscopes based on Bandpass Sigma-Delta Modulators** 3264
T. Northemann, *University of Freiburg;* M. Maurer, *University of Freiburg;* S. Rombach, *University of Freiburg;* A. Buhmann, *University of Freiburg;* Y. Manoli, *University of Freiburg*

11:38
C2L-M.2 **An Amplitude Regulation for Gyroscope Drive Loops based on Phase-Shifting** 3268
T. Northemann, *University of Freiburg;* A. Ziegler, *University of Freiburg;* M. Maurer, *University of Freiburg;* Y. Manoli, *University of Freiburg*

11:56
C2L-M.3 **A Tuning Procedure for the Electric Networks of PEM Systems** 3272
Massimo Panella, *University of Rome "La Sapienza";* Fabio Massimo Frattale Mascioli, *University of Rome "La Sapienza"*

12:14
C2L-M.4 **A MEMS-Based Temperature-Compensated Vacuum Sensor for Low-Power Monolithic Integration** 3276
M.A. Taghvaei, *McGill University;* P.-V. Cicek, *McGill University;* K. Allidina, *McGill University;* F. Nabki, *McGill University;* M.N. El-Gamal, *McGill University*

12:32
C2L-M.5 **A Low-Noise High-Sensitivity Readout Circuit for MEMS Capacitive Sensors** 3280
Jack Shiah, *University of British Columbia;* Hooman Rashtian, *University of British Columbia;* Shahriar Mirabbasi, *University of Britiah Columbia*

C2L-N SPECIAL SESSION: Recent Advances in IR-UWB Transceivers (Lecture)

Time: Wednesday, June 2, 2010, 11:20 - 12:50
Place: Radio City Ballroom I
Chair(s): Jorge Fernandes, *INESC-ID*
David Wentzloff, *University of Michigan*

11:20
C2L-N.1 **Recent Advances in IR-UWB Transceivers: An Overview** 3284
Jorge R. Fernandes, *Inesc-ID;* David Wentzloff, *University of Michigan*

11:38
C2L-N.2 **Challenges and Recent Advances in IR-UWB System Design** 3288
Lutz Lampe, *University of British Columbia;* Klaus Witrisal, *Graz University of Technology*

11:56
C2L-N.3 **Partially Coherent Signal Combination for Impulse Radio Synchronisation** 3292
Dries Neirynck, *IMEC;* Kathleen Philips, *IMEC;* Olivier Rousseaux, *IMEC*

12:14
C2L-N.4 **IR-UWB Transmitters Synthesized from Standard Digital Library Components** 3296
Youngmin Park, *University of Michigan;* David D. Wentzloff, *University of Michigan*

12:32
C2L-N.5 **System and Circuit Considerations for Low-Complexity Constant-Envelope FM-UWB** 3300
John F.M. Gerrits, *CSEM SA;* Mina Danesh, *Delft University of Technology;* Yi Zhao, *Delft University of Technology;* Yunzhi Dong, *Delft University of Technology;* Gerrit van Veenendaal, *NXP Semiconductors;* John R. Long, *Delft University of Technology;* John R. Farserotu, *CSEM SA*

C2L-P SPECIAL SESSION: Piecewise Linear Circuits & Systems: Bridging Electronics & Control Systems (Lecture)

Time: Wednesday, June 2, 2010, 11:20 - 12:50
Place: Radio City Ballroom II
Chair(s): Pedro M Julian, *Universidad Nacional del Sur*
Marco Storace, *Università degli Studi di Genova*

11:20
C2L-P.1 **Digital Architectures Implementing Piecewise-Affine Functions: An Overview** 3304
Tomaso Poggi, *University of Genoa;* Marco Storace, *University of Genoa*

11:38
C2L-P.2 **On the Synthesis of Piecewise Affine Control Laws** 3308
A. Bemporad, *University of Siena;* W.P.M.H. Heemels, *Eindhoven University of Technology;* M. Lazar, *Eindhoven University of Technology*

11:56
C2L-P.3 **PWL Cores for Nonlinear Array Processing** 3312
Martín Di Federico, *Universidad Nacional del Sur;* Pedro Julián, *Universidad Nacional del Sur;* Pablo S. Mandolesi, *Universidad Nacional del Sur;* Andreas G. Andreou, *Johns Hopkins University*

12:14
C2L-P.4 **An Automated Design Flow from Linguistic Models to Piecewise Polynomial Digital Circuits** 3317
Iluminada Baturone, *Univ. of Seville;* Santiago Sánchez-Solano, *IMSE-CNM;* Andrés A. Gersnoviez, *University of Cordoba;* María Brox, *University of Cordoba*

12:32
C2L-P.5 **Multicore Thermal Management using Approximate Explicit Model Predictive Control** 3321
Francesco Zanini, *Laboratory of Integrated Systems;* Colin N. Jones, *Automatic Control Laboratory;* David Atienza, *Embedded Systems Laboratory;* Giovanni De Micheli, *Laboratory of Integrated Systems*

C3L-A SPECIAL SESSION: New Frontiers in the Design of Communication Infrastructure for Adaptable Systems (Lecture)

Time: Wednesday, June 2, 2010, 14:10 - 15:40
Place: Grand Ballroom E
Chair(s): Luca Benini, *Università di Bologna*
Marco D Santambrogio, *Massachusetts Institute of Technology*

14:10
C3L-A.1 **ATAC: Improving Performance and Programmability with On-Chip Optical Networks** 3325
James Psota, *Massachusetts Institute of Technology;* Jason Miller, *Massachusetts Institute of Technology;* George Kurian, *Massachusetts Institute of Technology;* Henry Hoffman, *Massachusetts Institute of Technology;* Nathan Beckmann, *Massachusetts Institute of Technology;* Jonathan Eastep, *Massachusetts Institute of Technology;* Anant Agarwal, *Massachusetts Institute of Technology*

14:28
C3L-A.2 **Run-Time Mapping of Applications on FPGA-Based Reconfigurable Systems** 3329
Ivan Beretta, *Embedded Systems Laboratory;* Vincenzo Rana, *Politecnico di Milano;* David Atienza, *Embedded Systems Laboratory;* Donatella Sciuto, *Politecnico di Milano*

14:46
C3L-A.3 **High Level Specification of Embedded Listeners for Monitoring of Network-on-Chips** 3333
Christoph Puttmann, *University of Paderborn;* Mario Porrmann, *University of Paderborn;* Paolo R. Grassi, *Politecnico di Milano;* Marco D. Santambrogio, *Massachusetts Institute of Technology;* Ulrich Rückert, *Bielefeld University*

15:04
C3L-A.4 **3D NoCs – Unifying Inter & Intra Chip Communication** 3337
Igor Loi, *University of Bologna;* Pol Marchal, *IMEC;* Antonio Pullini, *iNoCs;* Luca Benini, *University of Bologna*

15:22
C3L-A.5 **Automated Placement of Reconfigurable Regions for Relocatable Modules** 3341
Tobias Becker, *Imperial College London;* Markus Koester, *Imperial College London;* Wayne Luk, *Imperial College London*

C3L-B Digital to Analog Conversion Techniques (Lecture)

Time: Wednesday, June 2, 2010, 14:10 - 15:40
Place: Grand Ballroom F
Chair(s): Joseph Chang, *Nanyang Technological University*

14:10
C3L-B.1 **A 14-Bit 250MS/s Digital to Analog Converter with Binary Weighted Redundant Signed Digit Coding** 3345
B. Catteau, *Ghent University;* B. De Vuyst, *Ghent University;* P. Glenn Rombouts, *Ghent University;* L. Weyten, *Ghent University*

14:28
C3L-B.2 **An Ultra Low-Energy DAC for Successive Approximation ADCs** 3349
Hande Vinayak Gopal, *Indian Institute of Technology Bombay;* Maryam Shojaei Baghini, *Indian Institute of Technology Bombay*

C3L-G Power Systems Tools & Analysis (Lecture)

Time: Wednesday, June 2, 2010, 14:10 - 15:40
Place: Salon C
Chair(s): Ali Abur, *Northeastern University*
Juri Jatskevich, *University of British Columbia*

C3L-H Wearable & Implantable/Injectable Medical Devices (Lecture)

Time: Wednesday, June 2, 2010, 14:10 - 15:40
Place: Salon D
Chair(s): Timothy Constandinou, *Imperial College London*
Guoxing Wang, *Shanghai Jiaotong University*

14:10
C3L-H.1 **Comparision of Methods for Interference Neutralisation in Tripolar Nerve Recording Cuffs** 3465
Dominik Cirmirakis, *University College London;* Andreas Demosthenous, *University College London;* Nick Donaldson, *University College London*

14:28
C3L-H.2 **Performance Comparison of Low Current Measurement Systems for Biomedical Applications** 3469
Dongsoo Kim, *Yale University;* Wei Tang, *Yale University;* Brian Goldstein, *Yale University;* Pujitha Weerakoon, *Yale University;* Hazael Montanaro, *Yale University;* Berin Martini, *Yale University;* Eugenio Culurciello, *Yale University*

14:46
C3L-H.3 **Design of a Configurable Neural Data Compression System for Intra-Cortical Implants** 3473
Awais M. Kamboh, *Michigan State University;* Yuning Yang, *Michigan State University;* Karim G. Oweiss, *Michigan State University;* Andrew J. Mason, *Michigan State University*

15:04
C3L-H.4 **Low-Power Low-Complexity Carrier-Based UWB Transmitter in 90nm CMOS for Wireless Biomedical Radar Sensing Applications** 3477
Xubo Wang, *University of Saskatchewan;* Anh Dinh, *University of Saskatchewan;* Daniel Teng, *University of Saskatchewan*

15:22
C3L-H.5 **Stimulation Management for a Multichannel Vestibular Neural Prosthesis** 3481
Dai Jiang, *University College London;* Andreas Demosthenous, *University College London;* Timothy Perkins, *University College London;* Nick Donaldson, *University College London*

C3L-J Memory Circuits (Lecture)

Time: Wednesday, June 2, 2010, 14:10 - 15:40
Place: Salon J
Chair(s): Gaetano Palumbo, *University of Catania*
Dimitrios Soudris, *National Technical University of Athens*

14:10
C3L-J.1 **A 16Kb 10T-SRAM with 4x Read-Power Reduction** 3485
Kong Zhi Hui, *Nanyang Technological University;* Do Ahn Tuan, *Nanyang Technological University*

14:28
C3L-J.2 **Implementation of Adaptive Grain Signatures for Transactional Memories** 3489
Woojin Choi, *University of Southern California / Information Sciences Institute;* Young Hoon Kang, *University of Southern California / Information Sciences Institute;* Taek-Jun Kwon, *University of Southern California / Information Sciences Institute;* Jeff Draper, *University of Southern California / Information Sciences Institute*

14:46
C3L-J.3 **Fast Low Power Translation Lookaside Buffers using Hierarchical NAND Match Lines** 3493
Lawrence T. Clark, *Arizona State University;* Vikas Chaudhary, *Intel Corporation*

15:04
C3L-J.4 **Scalability of Weak Consistency in NoC based Multicore Architectures** 3497
Abdul Naeem, *Royal Institute of Technology;* Xiaowen Chen, *Royal Institute of Technology;* Zhonghai Lu, *Royal Institute of Technology;* Axel Jantsch, *Royal Institute of Technology*

C3L-K Statistical & Nonlinear Signal Processing (Lecture)

Time: Wednesday, June 2, 2010, 14:10 - 15:40
Place: Salon K
Chair(s): Xinping Huang, *Communications Research Centre Canada*
Wei Xing Zheng, *University of Western Sydney*

C3L-L MIMO Communications Systems (Lecture)

Time: Wednesday, June 2, 2010, 14:10 - 15:40
Place: Salon L
Chair(s): Wee Ser, *Nanyang Technological University*
Zhiyuan Yan, *Lehigh University*

C3L-M Mixed-Signal Test II (Lecture)

Time: Wednesday, June 2, 2010, 14:10 - 15:40
Place: Salon M
Chair(s): P.R. Mukund, *Rochester Institute of Technology*

C3L-N SPECIAL SESSION: Circuits, Systems & Algorithms for Next Generation GNSS (Lecture)

Time: Wednesday, June 2, 2010, 14:10 - 15:40
Place: Radio City Ballroom I
Chair(s): Andrew Dempster, *University of New South Wales*
Izzet Kale, *University of Westminster*

C4L-D Yield & Reliability (Lecture)

Time: Wednesday, June 2, 2010, 16:00 - 17:30
Place: Grand Ballroom H
Chair(s): Kewal K. Saluja, *University of Wisconsin at Madison*

C4L-F Multimedia Understanding & Retrieval (Lecture)

Time: Wednesday, June 2, 2010, 16:00 - 17:30
Place: Salon B
Chair(s): Moncef Gabbouj, *Tampere University of Technology*
Ling Guan, *Ryerson University*

16:00
C4L-F.1 **Efficient Discovery of Unknown Ads for Audio Podcast Content** 3677
M.N. Nguyen, *Nanyang Technological University;* Qi Tian, *Institute for Infocomm Research;* Ping Xue, *Nanyang Technological University*

16:18
C4L-F.2 **Extraction of Robust Visual Phrases using Graph Mining for Image Retrieval** 3681
Jun-Bin Yeh, *National Cheng Kung University;* Chung-Hsien Wu, *National Cheng Kung University*

16:36
C4L-F.3 **High-Level Knowledge Inference for Human Image Classification in Multimedia Retrieval** 3685
Saad M. Khan, *Sarnoff Corporation;* Qian Yu, *Sarnoff Corporation;* Hui Cheng, *Sarnoff Corporation*

16:54
C4L-F.4 **Audio Onset Detection using Energy-Based and Pitch-Based Processing** 3689
Hui Li Tan, *Institute for Infocomm Research / A*STAR;* Yongwei Zhu, *Institute for Infocomm Research / A*STAR;* Lekha Chaisorn, *Institute for Infocomm Research / A*STAR;* Susanto Rahardja, *Institute for Infocomm Research / A*STAR*

17:12
C4L-F.5 **Video Activity Detection using Compressed Domain Motion Trajectories for H.264 Videos** 3693
Haowei Liu, *University of Washington;* Ming-Ting Sun, *University of Washington;* Ruei-Cheng Wu, *Industrial Technology Research Institute;* Shiaw-Shian Yu, *Industrial Technology Research Institute*

C4L-G AC & DC Converter Circuits (Lecture)

Time: Wednesday, June 2, 2010, 16:00 - 17:30
Place: Salon C
Chair(s): Adrian Ioinovici, *Holon Institute of Technology*
Tsorng-Juu Peter Liang, *National Cheng Kung University*

16:00
C4L-G.1 **Analysis and Implementation of a DC-DC Step-Down Converter for Low Output-Voltage and High Output-Current Applications** 3697
Chih-Hsien Hsieh, *National Cheng Kung University;* Tsorng-Juu Liang, *National Cheng Kung University;* Lung-Sheng Yang, *National Cheng Kung University;* Ray-Lee Lin, *National Cheng Kung University;* Kai-Hui Chen, *National Cheng Kung University*

16:18
C4L-G.2 **Three-Phase Single-Stage AC-DC Converters** 3701
Dunisha Wijeratne, *University of Western Ontario;* Gerry Moschopoulos, *University of Western Ontario*

16:36
C4L-G.3 **Two-Switch Flyback-Forward PWM DC-DC Converter with Reduced Switch Voltage Stress** 3705
Dakshina Murthy-Bellur, *Wright State University;* Marian K. Kazimierczuk, *Wright State University*

16:54
C4L-G.4 **Dual Modulation Technique for High Efficiency in High Switching Buck Converters Over a Wide Load Range** 3709
Jen-Chieh Tsai, *National Chiao Tung University;* Tsung-Ying Huang, *National Chiao Tung University;* Wang-Wei Lai, *National Chiao Tung University;* Ke-Horng Chen, *National Chiao Tung University*

17:12
C4L-G.5 **Design and Implementation of High Frequency AC-LED Driver with Digital Dimming** 3713
Chao-Lung Kuo, *National Cheng Kung University;* Tsorng-Juu Liang, *National Cheng Kung University;* Kai-Hui Chen, *National Cheng Kung University;* Jiann-Fuh Chen, *National Cheng Kung University*

C4L-H VLSI Design Techniques & Algorithms II (Lecture)

Time: Wednesday, June 2, 2010, 16:00 - 17:30
Place: Salon D
Chair(s): Wael Badawy, *IntelliView Technologies Inc.*
Mohammed Y. Niamat, *University of Toledo*

16:00
C4L-H.1 **DSTN Sleep Transistor Sizing with a New Approach to Estimate the Maximum Instantaneous Current** 3717
Yu Sun, *Harbin Institute of Technology;* Li-Yi Xiao, *Harbin Institute of Technology;* Cong Shi, *Harbin Institute of Technology*

16:18
C4L-H.2 **Power Characteristics of Networks on Chip** 3721
Mohamed A. Abd El ghany, *German University in Cairo;* Magdy A. El-Moursy, *Mentor Graphics Corporation;* Darek Korzec, *German University in Cairo;* Mohammed Ismail, *The Ohio State University*

16:36
C4L-H.3 **Multi-Objective Optimization for Networks-on-Chip Architectures using Genetic Algorithms** 3725
Ahmed A. Morgan, *University of Victoria;* Haytham Elmiligi, *University of Victoria;* M. Watheq El-Kharashi, *Mentor Graphics Egypt;* Fayez Gebali, *University of Victoria*

16:54
C4L-H.4 **Efficient Partitioning Technique on Multiple Cores based on Optimal Scheduling and Mapping Algorithm** 3729
Hassan Youness, *Minia University;* Abdel-Moniem Wahdan, *Ain Shams University;* Mohammed Hassan, *Mentor Graphics Egypt;* Ashraf Salem, *Mentor Graphics Egypt;* Mohammed Moness, *Minia University;* Keishi Sakanushi, *Osaka University;* Yoshinori Takeuchi, *Osaka University;* Masaharu Imai, *Osaka University*

17:12
C4L-H.5 **Distinguishable Error Detection Method for Network on Chip** 3733
Chung-Huang Jiang, *National Taiwan University;* Kun-Lin Tsai, *Tunghai Univeristy;* Feipei Lai, *National Taiwan University;* Shun-Hung Tsai, *National Taipei University of Technology*

C4L-J VLSI Design Techniques & Algorithms I (Lecture)

Time: Wednesday, June 2, 2010, 16:00 - 17:30
Place: Salon J
Chair(s): Zhongfeng Wang, *Broadcom Corp.*
Lars Wanhammar, *Linköping University*

16:00
C4L-J.1 **Efficient Memory Management for FFT Processors** 3737
Hsin-Fu Luo, *National Cheng Kung University;* Ming-Der Shieh, *National Cheng Kung University;* Yi-Jun Liu, *National Applied Research Laboratories;* Chien-Ming Wu, *National Applied Research Laboratories*

16:18
C4L-J.2 **Parallel Scalable Hardware Architecture for Hard Raptor Decoder** 3741
T. Mladenov, *Gwangju Institute of Science and Technology;* S. Nooshabadi, *Gwangju Institute of Science and Technology;* K. Kim, *Gwangju Institute of Science and Technology;* A. Dassatti, *Politecnico di Torino*

16:18
C4L-M.2 **Community Detection Enhancement in Networks using Proper Weighting and Partial Synchronization** 3777
Alireza Khadivi, *Ecole Polytechnique Fédérale de Lausanne;* Ali Ajdari Rad, *Ecole Polytechnique Fédérale de Lausanne;* Martin Hasler, *Ecole Polytechnique Fédérale de Lausanne*

16:36
C4L-M.3 **Constructing High-Rate Scale-Free LDPC Codes** 3781
X. Zheng, *Hong Kong Polytechnic University;* F.C.M. Lau, *Hong Kong Polytechnic University;* C.K. Tse, *Hong Kong Polytechnic University*

16:54
C4L-M.4 **On Control of Networks of Dynamical Systems** 3785
Chai Wah Wu, *IBM T. J. Watson Research Center*

C4L-N SPECIAL SESSION: Designing Hardware Accelerators for Biocomputing (Lecture)

Time: Wednesday, June 2, 2010, 16:00 - 17:30
Place: Radio City Ballroom I
Chair(s): Ananth Kalyanaraman, *Washington State University*
Partha Pratim Pande, *Washington State University*

16:00
C4L-N.1 **Hardware Accelerators for Biocomputing: A Survey** 3789
Souradip Sarkar, *Washington State University;* Turbo Majumder, *Washington State University;* Ananth Kalyanaraman, *Washington State University;* Partha Pratim Pande, *Washington State University*

16:18
C4L-N.2 **Evaluating Cell/B.E Software Cache for ClustalW** 3793
Vipin Sachdeva, *IBM Systems and Technology Group;* Michael Kistler, *IBM Austin Research Lab;* David A. Bader, *Georgia Institute of Technology*

16:36
C4L-N.3 **CAAD BLASTn: Accelerated NCBI BLASTn with FPGA Prefiltering** 3797
Jin H. Park, *Boston University;* Yunfei Qiu, *Boston University;* Martin C. Herbordt, *Boston University*

16:54
C4L-N.4 **To GPU Synchronize or Not GPU Synchronize?** 3801
Wu-Chun Feng, *Virginia Tech;* Shucai Xiao, *Virginia Tech*

17:12
C4L-N.5 **High Performance Molecular Dynamic Simulation on Single and Multi-GPU Systems** 3805
Oreste Villa, *Pacific Northwest National Laboratory;* Long Chen, *University of Delaware;* Sriram Krishnamoorthy, *Pacific Northwest National Laboratory*

C4L-P SPECIAL SESSION: Advances in Auditory Modeling & Design (Lecture)

Time: Wednesday, June 2, 2010, 16:00 - 17:30
Place: Radio City Ballroom II
Chair(s): Emmanuel Drakakis, *Imperial College London*
Andreas Katsiamis, *Toumaz Technology Ltd.*

16:00
C4L-P.1 **History and Future of Auditory Filter Models** 3809
Richard F. Lyon, *Google, Inc;* Andreas G. Katsiamis, *Toumaz Technology, Ltd;* Emmanuel M. Drakakis, *Imperial College London*

C5P-S Arithmetic Circuits & Systems on Chip (Poster)

Time: Wednesday, June 2, 2010, 9:30 - 11:00
Place: Times Square 3
Chair(s): Oscar Gustafsson, *Linköping University*
Xinmiao Zhang, *Case Western Reserve University*

C5P-T Interconnects, Noise Immunity & ESD Protection (Poster)

Time: Wednesday, June 2, 2010, 9:30 - 11:00
Place: Times Square 4
Chair(s): Mohamed Elgamel, *University of Lousiana at Lafayette*
Gwee Bah Hwee, *Nanyang Technological University*

C5P-U Communications System Design (Poster)

Time: Wednesday, June 2, 2010, 9:30 - 11:00
Place: Times Square 5
Chair(s): Tokunbo Ogunfunmi, *Santa Clara University*

C5P-V Coding & Security (Poster)

Time: Wednesday, June 2, 2010, 9:30 - 11:00
Place: Times Square 6
Chair(s): Ming-Der Shieh, *National Cheng Kung University*

C5P-W Communication System Structures (Poster)

Time: Wednesday, June 2, 2010, 9:30 - 11:00
Place: Times Square 7
Chair(s): Gerald Sobelman, *University of Minnesota*

C5P-X Communication Circuit Design (Poster)

Time: Wednesday, June 2, 2010, 9:30 - 11:00
Place: Times Square 8
Chair(s): Yehia Massoud, *Rice University*

C6P-Q Sigma-Delta Conversion I (Poster)

Time: Wednesday, June 2, 2010, 11:20 - 12:50
Place: Times Square 1
Chair(s): Tor Lande, *University of Oslo*

C6P-R Sigma-Delta Conversion II (Poster)

Time: Wednesday, June 2, 2010, 11:20 - 12:50
Place: Times Square 2
Chair(s): Shahriar Mirabbasi, *University of British Columbia*

C6P-S Pipelined ADCs (Poster)

Time: Wednesday, June 2, 2010, 11:20 - 12:50
Place: Times Square 3
Chair(s): Randall Geiger, *Iowa State University*

C6P-T High Performance Data Converters (Poster)

Time: Wednesday, June 2, 2010, 11:20 - 12:50
Place: Times Square 4
Chair(s): Jose M. de la Rosa, *Institute of Microelectronics of Seville*

C6P-U References & Converter Circuits (Poster)

Time: Wednesday, June 2, 2010, 11:20 - 12:50
Place: Times Square 5
Chair(s): Gabriel Rincon-Mora, *Georgia Institute of Technology*

C6P-V Digital VLSI Circuits I (Poster)

Time: Wednesday, June 2, 2010, 11:20 - 12:50
Place: Times Square 6
Chair(s): Gwee Bah Hwee, *Nanyang Technological University*
Gaetano Palumbo, *University of Catania*

C6P-W Digital VLSI Circuits II (Poster)

Time: Wednesday, June 2, 2010, 11:20 - 12:50
Place: Times Square 7
Chair(s): Ming-Dou Ker, *National Chiao Tung University*
Mohammed Y. Niamat, *University of Toledo*

C6P-X Digital VLSI Circuits III (Poster)

Time: Wednesday, June 2, 2010, 11:20 - 12:50
Place: Times Square 8
Chair(s): Masud Chowdhury, *University of Illinois at Chicago*
Peter Nilsson, *Lund University*

C7P-Q VLSI Datapath & Arithmetic Circuits (Poster)

Time: Wednesday, June 2, 2010, 14:10 - 15:40
Place: Times Square 1
Oscar Gustafsson, *Linköping University*
Lars Wanhammar, *Linköping University*

C7P-R VLSI for Communications (Poster)

Time: Wednesday, June 2, 2010, 14:10 - 15:40
Place: Times Square 2
Chair(s): Peter Nilsson, *Lund University*
Fathi Salem, *Michigan State University*

C7P-S Video Coding & Communications (Poster)

Time: Wednesday, June 2, 2010, 14:10 - 15:40
Place: Times Square 3
Chair(s): Zhibo Chen, *Thomson R&D Center*

C7P-T Advanced Video Coding II (Poster)

Time: Wednesday, June 2, 2010, 14:10 - 15:40
Place: Times Square 4
Chair(s): Tian-Sheuan Chang, *National Chiao Tung University*

C7P-U Sensor Processing & Networking (Poster)

Time: Wednesday, June 2, 2010, 14:10 - 15:40
Place: Times Square 5
Chair(s): Shoushun Chen, *Nanyang Technological University*
George Yuan, *Hong Kong University of Science & Technology*

C7P-V Sensor Circuits & Models (Poster)

Time: Wednesday, June 2, 2010, 14:10 - 15:40
Place: Times Square 6
Chair(s): Piotr Dudek, *University of Manchester*
Andre van Schaik, *Sydney University*

C7P-W Oscillators & Time/Phase-Domain Circuits (Poster)

Time: Wednesday, June 2, 2010, 14:10 - 15:40
Place: Times Square 7
Chair(s): Igor Filanovsky, *University of Alberta*

C7P-X High-Speed Circuits (Poster)

Time: Wednesday, June 2, 2010, 14:10 - 15:40
Place: Times Square 8
Chair(s): Gregorio Cappuccino, *University of Calabria*