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Technical Program

Monday, June 17th

Analog Circuits & Systems Design I Session

Digital Circuits I Session

SPECIAL SESSION: Biomedical Circuits & Systems Session

SPECIAL SESSION: Design Methods for Emerging Technologies Session

Digital Circuits II Session

DSP Hardware and Applications Session

RF and Microwave Circuits & Systems II Session

Data Converters III Session

Analog Circuits & Systems Design III

Sensors & Microsystems Session

Low-Power Design Techniques I Session

Tuesday, June 18th

Low-power Design Techniques II Session

CAD & Design Tools II Session

Universidade Federal de Santa Maria, Brazil

Analog Circuits & Systems Design III Session

RF and Wireless Communication Systems Session

Acoustic Signal & Image Processing Session

Data Converters I Session

SPECIAL SESSION: Digital Predistortion for RF Power Amplifiers

SPECIAL SESSION: Magnetic-Memory-Based Computing

RF Circuits & Systems Session

CAD & Design Tools I Session

M. Iizuka, H. Saito
University of Aizu, Japan

Identifying Signal Correlations Using Discrete Event Simulation onф
P. Bazargan Sabet, D. Ledû
Université Pierre-et-Marie-Curie, LIP6, France

A Netlist Pruning Tool for an Electronic System Prototyping Platform opo
K. Baratli{3}, A. Lakhssassi{3}, Y. Blaquière{2}, Y. Savaria{1}
{1}École polytechnique de Montréal, Canada; {2}Université du Québec à Montréal, Canada; {3}Université du Québec en Outaouais, Canada

Wednesday, June 19th

Test & Verification Session

A 3D IC BIST for Pre-Bond Test of TSVs Using Ring Oscillators opт
Y. Fkih{1}, P. Vivet{1}, B. Rouzeyre{2}, M. Flottes{2}, G. Di Natale{2}
{1}CEA-Leti, France; {2}LIRMM - Université Montpellier II / CNRS, France

Design of an embedded RF signal generator for BIST application ocм
I. Lahbib{2}, M. Doukkali{1}, P. Descamps{1}, C. Kelma{2}, O. Tesson{2}
{1}LaMIPS, France; {2}NXP Semiconductors, France

A Methodology for System-Level Fault Injection Based on Gate-Level Faulty Behavior ocp
R. Robache{1}, J. Boland{1}, C. Thibeault{1}, Y. Savaria{2}
{1}École de Technologie Supérieure, Canada; {2}École Polytechnique de Montréal, Canada

RF and Microwave Circuits & Systems I Session

A Low Power Wideband Differential Transimpedance Amplifier for Optical Receivers in 0.18-µm CMOS ocф
W. Chong, Y. Tan, K. Yeo
Nanyang Technological University, Singapore

Ultra-Low-Power, Ultra-Low-Voltage 2.12 GHz Colpitts Oscillator Using Inductive Gate Degeneration oto
R. Rottava{2}, C. Câmara S. Jr.{2}, F. Rangel de Sousa{2}, R. Nunes de Lima{1}
{1}Universidade Federal da Bahia, Brazil; {2}Universidade Federal de Santa Catarina, Brazil

Effect and Adaptive Correction of Impedance Mismatch Between Antenna and Power Amplifier on Digital Predistortion **отт**

A. Mbaye, G. Baudoin, M. Villegas, T. Gotthans
ESIEE Paris, France

FM-UWB Transmitter Using RC Oscillators **оум**

L. Almeida{1}, M. Martins{2}, J. Fernandes{1}
{1}INESC-ID / Instituto Superior Técnico - TU Lisbon, Portugal; {2}INESC-ID / Instituto Superior Técnico - TU Lisbon / TES Electronic Solutions, Portugal

Accurate and Efficient Analytical Electrical Model of Antenna for NFC Applications **оур**

M. Dieng{2}, M. Comte{1}, S. Bernard{1}, V. Kerzérho{1}, F. Azaïs{1}, M. Renovell{1}, T. Kervaon{3}, P. Pugliesi-Conti{3}
{1}LIRMM - Université Montpellier II / CNRS, France; {2}LIRMM - Université Montpellier II / CNRS / NXP Semiconductors Caen, France; {3}NXP Semiconductors, France

Imaging & Sensors Session

A CMOS Image Sensor with Low-Complexity Video Compression for Wireless Sensor Networks **оуф**

A. Chefi{2}, A. Soudani{1}, G. Sicard{2}
{1}Faculté des Sciences de Monastir, Tunisia; {2}Laboratoire TIMA, France

Benefits of Three-Dimensional Circuit Stacking for Image Sensors **офо**

F. Guezzi-Messaoud{1}, A. Dupret{1}, A. Peizerat{1}, Y. Blanchard{2}
{1}CEA-Leti, France; {2}ESIEE Paris, France

A Novel 0.5GHz Real Time Asynchronous Photon Detection and Counting Technique: ROIC Design for Cooled SWIR HgCdTe Infrared Detector **офт**

H. Amhaz, K. Foubert, F. Guellec, J. Rothman
CEA-Leti, France

Column-Separated Compressive Sampling Scheme for Low Power CMOS Image Sensors **плм**

N. Katic, M. Hosseini Kamal, M. Kilic, A. Schmid, P. Vandergheynst, Y. Leblebici
École Polytechnique Fédérale de Lausanne, Switzerland

Autonomous Sensor System for Deep-Sea Pipeline Monitoring **плр**

S. Amara-Madi{2}, A. Price{2}, A. Bensaoula{2}, M. Boukadoum{1}
{1}Université du Québec à Montréal, Canada; {2}University of Houston, United States

Data Converters II Session

A CMOS Cyclic Folding A/D Converter with a New Compact Layout Technique **плф**

S. Lee, D. Park, J. Bae, M. Song
Dongguk University, Korea, South

A Design Methodology for Delta-Sigma Converters Based on Solid-State Passive Filters **ПМО**
P. Benabes
Supélec, France

A 12-Bit Interpolated Pipeline ADC Using Body Voltage Controlled Amplifier **ПМТ**
H. Lee, M. Miyahara, A. Matsuzawa
Tokyo Institute of Technology, Japan

Design and FPGA-Based Multi-Channel, Low Phase-Jitter ADPLL for Audio Data Converter **ПНМ**
N. Ben Ameur, N. Masmoudi, M. Loulou
École Nationale d'ingénieurs de Sfax, Tunisia

A VCO Linearization System for ADC Applications **ПНС**
J. Michaelsen, D. Wisland
University of Oslo, Norway

Wireless Communication Session

Adaptive Zero-Crossing Digital Phase-Locked Loop for Packet Synchronization **ПОЛ**
S. Al-Araji, E. Salahat, D. Kilani, S. Abu Yasin, H. Alkhoja, J. Aweya
Khalifa University, U.A.E.

Demonstration of 300 Mbit/S Free Space Optical Link with Commercial Visible Led **ПОП**
P. Binh{2}, V. Trong{2}, D. Hung{2}, P. Renucci{1}, A. Balocchi{1}, X. Marie{1}
{1}Université de Toulouse, France; {2}Vietnam Academy of Science and Technology, Vietnam

A Programmable DSP Front-End for All-Digital 4G Transmitters **ПОТ**
E. Roverato{1}, M. Kosunen{1}, J. Lemberg{1}, K. Stadius{1}, J. Ryynänen{1}, P. Eloranta{2}, R. Kaunisto{2}, A. Pärssinen{2}
{1}Aalto University School of Electrical Engineering, Finland; {2}Renesas Mobile Corporation, Finland

Low Complexity Maximum Likelihood Estimation of Time and Frequency Offset for DVB-T2 **ППМ**
S. Saad, H. Hamed, A. Shalash
Cairo University, Egypt

Biomedical Circuits & Systems Session

A 4000 Hz CMOS Image Sensor with In-Pixel Processing for Light Measurement and Modulation **ППР**

T. Laforest{1}, A. Dupret{1}, A. Verdant{1}, F. Ramaz{2}, S. Gigan{2}, G. Tessier{2}, E. Benoit à la Guillaume{2}
{1}CEA-Leti, France; {2}École Supérieure de Physique et de Chimie Industrielles de la Ville de Paris, France

Lifetime Tracing of Cardiopulmonary Sounds with Ultra-Low-Power Sound Sensor Stick Connected to Wireless Mobile Network **ппф**
Z. Wang{2}, H. Jiang{2}, K. Yang{2}, L. Zhang{2}, J. Wei{2}, F. Li{2}, B. Chi{2}, C. Zhang{2}, S. Wu{1}, Q. Lin{1}, W. Jia{1}
{1}Research Institute of Tsinghua University in Shenzhen, China; {2}Tsinghua University, China

A 38µA Wearable Biosignal Monitoring System with Near Field Communication **про**
K. Yamashita{1}, S. Izumi{1}, M. Nakano{1}, T. Fujii{1}, T. Konishi{1}, H. Kawaguchi{1}, H. Kimura{4}, K. Marumoto{4}, T. Fuchikami{4}, Y. Fujimori{4}, H. Nakajima{2}, T. Shiga{3}, M. Yoshimoto{1}
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Far-Field UHF Remotely Powered Front-End for Patient Monitoring with Wearable Antenna **прт**
O. Kazanc{1}, J. Rodríguez-Rodríguez{2}, M. Delgado-Restituto{2}, F. Maloberti{3}, C. Dehollain{1}
{1}École Polytechnique Fédérale de Lausanne, Switzerland; {2}Universidad de Sevilla, Spain; {3}Università degli Studi di Pavia, Italy

A Sigma Delta ISFET Readout Circuit for Lab-on-Chip Applications **псм**
G. Nabovati{}, E. Ghafarzadeh{1}, F. Awwad{2}, M. Sawan{1}
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