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ICECS 2023

2023 30th IEEE International Conference on Electronics, Circuits and Systems (ICECS)
4-7 December 2023 – Hilton Maslak İstanbul / Turkey

TECHNOSAPIENS FOR SAVING HUMANITY

PROGRAM BOOK

CAS

FEYZİYE SCHOOLS FOUNDATION
IŞIK UNIVERSITY

İTÜ

BAYKON
Industrial Weighing Systems

aktif neser

Savronik

TÜBİTAK

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PROGRAM OVERVIEW

Sunday, 3 December 2023

10:00 -12:30	**Tutorial 1** *Fully-Integrated Power Management* *Circuits for Thermoelectric Energy* *Harvesting: Fundamentals and Challenges* **Prof. Toru Tanzawa** Shizuoka University	**Grand Balroom 3**

09:00 -12:30	**Tutorial 3** *Joint Communication and Radio Sensing:* *RF Hardware opportunities and challenges –* *A circuit and system level perspective* **Padmanava Sen** and **Armen Harutyunyan** Barkhausen Institut, Dresden, Germany	**Azure Meeting Hall**

14:00 -17:30	**Tutorial 4** *Integrated Millimeter-Wave Radar Sensors:* *from Operating Principles to Applications* **Vladimir Milovanovic**	**Peridot Meeting Hall**

13:40-15:30	**Satellite Workshops- Part 1** *Future Trends of Wireless Communications 5G and Beyond*	**Grand Balroom 3**

Moderators: Prof. Dr. Sıddık Yarman / Prof. Dr. Cem Göknar

- Opening Address by **Ömer Fatih Sayan**
  Chairman of the Board of Turk Telekom

- Joint Radar and Communication Systems
  Prof. Dr . Yalçın Tanık

- High-Rate Far Field Radio Link System Based on OAM Multiplexed Collimated
  Vortex Wave Beams
  Prof. Dr . Altunkan Hızal
  METU & ASELSAN

- Filter Designs for Wireless Communications: 5G and Beyond Employing FILPRO
  Dr. Bülent Alıcıoğlu
  METU & ASELSAN

- Noise-Driven Communication: In Pursuit of Unconditionally Secure and Low
  Power Communication Networks for 6G and Beyond
  Prof. Dr . Ertuğrul Başar
  Koç University

- Advance Methods to Design Front & Back-Ends of Wireless Communications
  Systems for 5G and Beyond Employing the Real Frequency S/W Tools
  Prof. Dr. B.S. Yarman
  RFT Research Corp. & Savronik Elektronik Corp.

15:30-15:45	**Coffee Break**	**Foyer**

15:45-17:30　　　　**Satellite Workshops- Part 2**　　　　　　　**Grand Balroom 3**
Future Trends of Wireless Communications 5G and Beyond

Moderators: Prof. Dr. Sıddık Yarman / Prof. Dr. Cem Göknar

- Recent Developments in 5G and 6G in the world as well as in Turkey *Dr. Ali Görçin*
  President of Informatics and Information Security Research Center
  TÜBİTAK

- Digitalization Vision of Turkey
  Hasan Suel
  Executive Vice President - Vodafone Türkiye

- Recent and Future Technical Trends in Turkey
  Aziz Sever
  CTO of ULAK Communications Inc.

- Recent and Future Trends in Wireless Internet
  Dr. Mehmet Çelebiler
  Chairman of the Board, Türknet, SATKOMEO

- Social Impacts of Wireless Communications in Turkey as well as in EU
  Prof. Dr. Orhan Güvenen
  Bilkent University & Gedik　University

Monday, 4 December 2023

08:00-16:40	**Registration**	**Hotel Lobby Area**
09:20-09:30	**Opening Ceremony**	**The Grand Ballroom 1**
09:30-10:40	**Opening Lecture**	**The Grand Ballroom 1**

Extreme Microfluidics: Large-volumes and Complex Fluids
Mehmet Toner
General Hospital, Harvard Medical School, Harvard-MIT Health Sciences & Technology

10:40-11:00	**Coffee Break**	**Foyer**
11:00-12:40	Oral Sessions 1- Sigma-Delta, Delta-Sigma, and Other Modulators	The Grand Ballroom 1
11:00-12:40	Oral Sessions 2- Bio-Medical, Bio-Inspired Circuits/Systems	The Grand Ballroom 2
11:00-12:40	Oral Sessions 3- SS2: Hypercomplex NNs for CAS	The Grand Ballroom 3
11:00-12:40	Oral Sessions 4- Amplifiers	Azure Meeting Hall
11:00-12:40	Oral Sessions 5- EDA: Test and Reliability	Peridot Meeting Hall
11:00-12:40	Demo & Industry	Foyer
12:40-14:00	**Lunch**	**Cupole Hall** *(3rd Floor)*
14:00-15:40	Oral Sessions 6- Analog to Digital Converters I	The Grand Ballroom 1
14:00-15:40	Oral Sessions 7- FPGA Applications II	The Grand Ballroom 2
14:00-15:40	Oral Sessions 8- SS1-1: Neuromorphic Computing	The Grand Ballroom 3
14:00-15:40	Oral Sessions 9- Energy-Efficient Circuits & Systems	Azure Meeting Hall
14:00-15:40	Oral Sessions 10- EDA: Tools, Design, Optimization	Peridot Meeting Hall
14:00-15:40	Poster Sessions 1-Embedded Micro/Systems& Sensors	Foyer
15:40-16:00	**Coffee Break**	**Foyer**

16:00-17:40	Oral Session 11- A/D Converters II	The Grand Ballroom 1
16:00-17:40	Oral Session 12- Neural Networks II: Machine/Deep Learning	The Grand Ballroom 2
16:00-17:40	Oral Session 13- Neuromorphic Devices, Circuits and Systems II	The Grand Ballroom 3
16:00-17:40	Oral Session 14- Analog & Digital CAS Applications	Azure Meeting Hall
16:00-17:40	Oral Session 15- Digital Circuits and Systems: Logic Cells	Peridot Meeting Hall
16:00-17:40	Poster Session 2- EDA & Low-Power, Low-Voltage Systems	Foyer
18:30-19:30	**Welcome Cocktail**	**Gallery Room	Lobby Area**

Tuesday, 5 December 2023

08:00-16:40	**Registration**	**Hotel Lobby Area**
09:00-09:50	Invited Lecture	The Grand Ballroom 1

Generative AI: How the world will evolve around it?
Burak Göktürk
General Manager and VP Engineering,Cloud AI & Industry Solutions, Google Cloud

09:50-10:10	**Coffee Break**	**Foyer**
10:10-11:50	Oral Session 16-Analog Sub-Circuit Designs	The Grand Ballroom 1
10:10-11:50	Oral Session 17- SS5 - II: Amplifiers	The Grand Ballroom 2
10:10-11:50	Oral Session 18-SS1: Neuromorphic Devices, Circuits and Systems III	The Grand Ballroom 3
10:10-11:50	Oral Session 19- SS3: Defense Industry Technologies	Azure Meeting Hall
10:10-11:50	Oral Session 20- Sensors and Sensing Systems I	Peridot Meeting Hall
10:10-11:50	Poster Session 3- Bio-Medical, Audio, Image and Video Processing CAS	Foyer
11:50-13:30	**Lunch**	**Cupole Hall** *(3rd Floor)*

13:30-15:10	Oral Session 21- Low-Power, Low-Voltage Design	The Grand Ballroom 1
13:30-15:10	Oral Session 22- SS5 - I: Antennas & Filters	The Grand Ballroom 2
13:30-15:10	Oral Session 23- SS1: Neuromorphic Devices, Circuits and Systems IV	The Grand Ballroom 3
13:30-15:10	Oral Session 24- Circuits & Systems for Image Processing	Azure Meeting Hall
13:30-15:10	Oral Session 25- Sensors and Sensing Systems II	Peridot Meeting Hall
13:30-15:10	Poster Session 4- Machine/Deep Learning and Other Smart Systems for CAS Applications	Foyer
15:10-15:30	**Coffee Break**	**Foyer**
15:30-17:10	Oral Session 26-Circuits & Systems for Communications	The Grand Ballroom 1
15:30-17:10	Oral Session 27- SS5 - III: RF Applications	The Grand Ballroom 2
15:30-17:10	Oral Session 28- Memory Cell Circuits & Systems	The Grand Ballroom 3
15:30-17:10	Oral Session 29- Signal Processing in Circuits & Systems	Azure Meeting Hall
15:30-17:10	Oral Session 30- Oscillators	Peridot Meeting Hall
17:30-19:30	**Innovation and Start-ups in CAS (YPCAS-DEICAS Joint Event)** **Chairs:** *Tuba Ayhan* MEF University, *Okan Zafer Batur* Bilgi University **Speakers:** *Özlem Özbay* Adhoc Teknoloji, *Melike Atay Karabalkan* ElectraIC, **Nora Kayaer** MEF TTO, *Anıl Akseki, Akın Şibay* ANAKS R&D	**The Grand Ballroom 1**

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Wednesday, 6 December 2023

08:30-09:30	Invited Lecture	The Grand Ballroom 1
	Hakkı Kaya Ocakaçan Elected Member of the Board Istanbul Branch Electrical Engineers Chamber of Turkey	
09:30-17:00	ICECS 2023 City Tour	

19:30-23:30	**Gala Dinner & Awards Ceremony**	**The Grand Ballroom 1-2**

Thursday, 7 December 2023

09:30-10:40	Invited Lecture	The Grand Ballroom1
	From Nano-Drones to Cars - A RISC-V Open Platform for Next-Generation Autonomous Vehicles *Luca Benini* ETH Zürich and Università di Bologna	

10:40-11:00	**Coffee Break**	**Foyer**
11:00-12:40	Oral Session 31-FPGA Applications I	The Grand Ballroom 1
11:00-12:40	Oral Session 32-Smart Systems for CAS Applications	The Grand Ballroom 2
11:00-12:40	Oral Session 33- Embedded and Micro/Systems	The Grand Ballroom 3
11:00-12:40	Oral Session 34- Phase-Locked Loop Circuits	Azure Meeting Hall
11:00-12:40	Poster Session 5- Analog/Mixed-Signal/Microwave/Power Circuits	Foyer

12:40-14:00	**Lunch**	**Cupole Hall** *(3rd Floor)*
14:00-15:40	Oral session 35- Linear and Non-Linear Circuits & Systems	The Grand Ballroom 1
14:00-15:40	Oral session 36- VLSI Systems With Applications	The Grand Ballroom 2
14:00-15:40	Oral session 37- SS4: Artificial Intelligence Methods for Modeling and Understanding the Human Brain	The Grand Ballroom 3
15:40-16:00	Closing Ceremony	The Grand Ballroom 1

ORAL PRESENTATIONS

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Monday, December 4
11:00 to 12:40

Oral 1: Modulators
Oral 2: Bio-Medical, Bio-Inspired CAS
Oral 3: SS2 - SS2: Hypercomplex NNs for CAS
Oral 4: SS2 – Amplifiers
Oral 5: Test and Reliability

PAPER ID		Oral 1: Sigma-Delta, Delta-Sigma, and Other Modulators Monday, December 4, 11:00 to 12:40 The Grand Ballroom 1 **Session Chair:** Hua Fan *University of Electronic Science and Technology of China*	Oral 2: Bio-Medical, Bio-Inspired Circuits/Systems Monday, December 4, 11:00 to 12:40 The Grand Ballroom 2 **Session Chair:** Shuai Wang *Microtera Semiconductor Co. Ltd., Guangzhou, China*	PAPER ID
1031	11:00	A 13.5 mW Decimator for a 20 MHz bandwidth CT Delta Sigma Modulator using poly-phase decomposition techniques. *Alok Baluni,Shanthi Pavan- IIT Madras - India*	Light-Controlled Switching of Gait Patterns in a Central Pattern Generator: Circuit Design and Emulation *Bakr Al Beattie, Sebastian Jenderny, Jonas Röhrig, Karlheinz Ochs - Ruhr University Bochum - Germany*	1052
1073	11:25	A Lean Noise-Cancelling Sturdy MASH Delta-Sigma ADC with a Noise-Shaping SAR Stage. *Antoine Verreault,PauL Vahé Cicek,Alexandre Robichaud-Université DuQuébec À Chicoutimi , Université Du Québec À Montréal - Canada*	Enhancing Isolation in Solidly Mounted Resonators for Brain Implantable Microbots *Laura Mazon Maldonado, Mahdieh Shojaei Baghini, Roghaieh Parvizi, Hadi Heidari-University of Glasgow United Kingdom*	1257
1207	11:50	Analog Techniques for Low-power High-Performance Switched-Capacitor Sigma-Delta Modulators. *Federico Torri, Tommaso Vergine, Piero Malcovati, Andrea Baschirotto - Università di Pavia - Italy, IC' Alps - France, Università di Milano-Bicocca - Italy*	Investigating the Advantages of Magnetomyography in Assistive Healthcare Technology *Negin Ghahremani Arekhloo, Hossein Parvizi, Siming Zuo, Huxi Wang, Kianoush Nazarpour, Hadi Heidari University of Glasgow, University of Edinburgh-United Kingdom*	1156
1268	12:15	True Random Number Generation Using Dark Noise Modulation of a Single-Photon Avalanche Diode *Md Sakibur Sajal, Marc Dandin - Carnegie Mellon University - United States*	A -96.2dBm / 3.5µW Wake-up Receiver with False Triggering Detection for Human Body Communication- *Amr Abdelrahman, Mohammed Fouda,Ahmed Eltawil-Kaust-Saudi Arabia,Rain Al-United States*	1168

		Oral 3: SS2: Hypercomplex NNs for CAS Monday, December 4, 11:00 to 12:40 The Grand Ballroom 3 Session Chair: C. Famoso *University of Catania, Italy*	Oral 4: Amplifiers Monday, December 4, 11:00 to 12:40 Azure Meeting Hall Session Chair: Yajun Ha *Shanghaitech University, China*		
PAPER ID					**PAPER ID**
1142	11:00	Two-leg balancing in a quadrupedal robot via hypercomplex neural networks *Paolo Arena, Alessia Li Noce, Gabriele Puglisi, Luca Patanè - University of Catania - Italy, University of Messina - Italy*	A 24-28 GHz Tunable LNA in 22nm FDSOI Technology *Sandra George, Mengqi Cui, Padmanava Sen - Barkhausen-Institut gGmbH - Germany, Technische Universität Dresden - Germany*		1038
1210	11:25	Quaternion Gated Recurrent Units for Renewable Energy: Improving Power Forecasting *Gianfranco Di Marco, Danilo Comminiello, Michele Scarpiniti, Aurelio Uncini* *Department of Information Engineering, Electronics and Telecommunications (DIET) Sapienza University of Rome, Italy*	An Enhanced ACBC Three-Stage Amplifier using Complementary Indirect Miller Compensation *Johannes Weber, Lei Zhang, Pengcheng Xu, David Borggreve, Frank Vanselow, Eckhart Hennig - Fraunhofer EMFT - Germany*		1089
1243	11:50	Quaternion Neural Networks for Multidimensional Applications: An Overview *Arturo Buscarino, Danilo Comminiello, Carlo Famoso, Luca Patanè - University of Catania - Italy, Università La Sapienza - Italy, University of Messina - Italy*	Design of Compact Current-Drive Power Amplifiers for the Efficient Control of Spin Qubits *Hadi Lotfi, Jens Anders - University of Stuttgart - Germany*		1114
1248	12:15	Fast hypercomplex neural networks for modeling Venus planetary orbit *Arturo Buscarino, Carlo Famoso, Luigi Fortuna and Gabriele Puglisi* *Dipartimento di Ingegneria Elettrica Elettronica e Informatica* *Universita degli studi di Catania, Italy*	Current Mirror-based High-Performance Ring Amplifier for Switched Capacitor Circuits *Manish Pundir, Bipul Kumar Singh, Ambika Prasad Shah - IIT Jammu - India*		1284

Oral 5: EDA: Test and Reliability

Monday, December 4, 11:00 to 12:40
Peridot Meeting Hall

Session Chair:

PAPER ID		
1169	11:00	On the Influence of the Laser Illumination on the Logic Cells Current Consumption *Dmytro Petryk, Zoya Dyka, Milos Krstic, Jan Bělohoubek, Petr Fišer, František Steiner, Tomáš Blecha, Peter Langendörfer, Ievgen Kabin - IHP – Leibniz-Institut für Innovative Mikroelektronik - Germany, Czech Technical University in Prague - Czechia, University of West Bohemia - Czechia*
1075	11:25	ShortCircuit: An Open-Source ChatGPT Driven Digital Integrated Circuit Front-End Design Automation Tool *Muhammet Enes Yanik, İhsan Çiçek, Engin Afacan - Gebze Technical University - Turkiye*
1174	11:50	A Generic CDC Modeling for Data Stability Verification *Diana Kalel, Jean-Christophe Brignone, Laurent Fesquet, Katell Morin-Allory - Tima Laboratory, St Microelectronics - France*
1254	12:15	Hardware Mitigation and Verification For Rogue In-Flight Data Load Attacks *Nimish Mathure, Sudarshan K Srinivasan, Kushal K Ponugoti, Arun Govindankutty North Dakota State University - United States*

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Monday, December 4
14:00 to 15:40

Oral 6: Analog to Digital Converters I
Oral 7: Analog to Digital Converters I
Oral 8: Neuromorphic Computing
Oral 9: Energy-Efficient Circuits & Systems
Oral 10: EDA: Tools,Design,Optimization

PAPER ID		Oral 6: Analog to Digital Converters I Monday, December 4, 14:00 to 15:40 The Grand Ballroom 1 Session Chair: Myung Hoon Sunwoo *School of ECE/Ajou University*	Oral 7: FPGA Applications II Monday, December 4, 14:00 to 15:40 The Grand Ballroom 2 Session Chair: Manuel Delgado-Restituto *Microelectronics Institute of Sevilla, Spain*	PAPER ID
1020	14:00	Optimum Position of Digital DAC Error Correction relative to the Decimation Filter in DS ADCs **Bjoern Driemeyer - University of Ulm - Germany**	FPGA Latch Primitive based Efficient True Random Number Generators **Mustafa Mert Esen, Sukru Uzun, Emre Goncu - Procenne - Turkiye**	1171
1131	14:25	A low power 1.25fJ/conv-step 12-bit SAR ADC with a high-efficient Dynamic Comparator *Kaicong Dong, Hua Fan, Franco Maloberti, Wei Zhou, Jing Luo Shenzhen Institute for Advanced Study-China*	NORB: A Stream-Based and Non-Blocking FPGA Accelerator for ORB feature Extraction *Qixing Zhang, Hao Sun, Qi Deng, Heng Yu, Yajun Ha- Shanghaitech University, University of Nottingham Ningbo - China*	1186
1154	14:50	Evaluation of the Performance Impact of Clock Jitter and Phase Noise in a Two-Band Frequency-Interleaved ADC **Leandro Passetti, Benjamin Reyes, Damian Morero, Mario Hueda - Fundacion Fulgor - Argentina**	Fully-Fusible Convolutional Neural Networks for End-to-End Fused Architecture with FPGA Implementation **Iman Dadras, Sakineh Sakineh, Mohammad Hasan Ahmadilivani, Jaan Raik, Mostafa Salehi - University of Tartu - Estonia**	1195
1167	15:15	Quantizer Gain in Incremental Delta-Sigma ADCs *Paul Kaesser, Johannes Wagner, Omar Ismail, Maurits Ortmanns - University of Ulm - Germany*	Pipelined Architecture for a Semantic Segmentation Neural Network on FPGA *Hugo Le Blevec, Mathieu Léonardon, Hugo Tessier, Matthieu Arzel - IMT Atlantique - France*	1253

PAPER ID		Oral 8: SS1 - 1: Neuromorphic Computing Monday, December 4, 14:00 to 15:40 The Grand Ballroom 3 Session Chair: A. S. Demirkol *Technische Universität Dresden, Germany*	Oral 9: Energy-Efficient Circuits & Systems Monday, December 4, 14:00 to 15:40 Azure Meeting Hall Session Chair: Andrei Vladimirescu *University of California, Berkeley*	PAPER ID
1147	14:00	Adiabatic Spiking Neurons and Synapses for Ultra-Low Energy Neuromorphic Computing. *Marco Massarotto, Stefano Saggini, Mirko Loghi, David Esseni - University of Udine- Italy*	Federated learning compression designed for light weight communications *Lucas Grativol, Mathieu Léonardon, Guillaume Muller, Virginie Fresse, Matthieu Arzel - Imt Atlantique, Mines Saint-Étienne, Hubert Curien Laboratory - France*	1112
1182	14:25	Hardware Aware Spiking Neural Network Training and Its Mixed-Signal Implementation for Non-Volatile In-Memory Computing Accelerators *- Alptekin Vardar, Aamir Munir, Nellie Laleni, Sourav De, Thomas Kämpfe - Fraunhofer Ipms - Germany*	An Ultra Low-Energy VLSI Approximate Discrete Haar Wavelet Transform for ECG Data Compression *Morgana Macedo Azevedo da Rosa, Eduardo Costa, Rafael Soares, Sergio Bampi - Federal University of Pelotas- Brazil*	1164
1252	14:50	Vacancy-modulated Analog Resistive Switching Memory Device based on the Bilayer of Zn@ZnO/ZnO for Neuromorphic Computing *Muhammad Umair Khan Khan, Baker Mohammad - Khalifa University - United Arab Emirates*	New Energy-Efficient 3-2 and 4-2 Approximate Adder Compressors Topologies *Rodrigo Lopes, Leonardo Antonietti, Morgana Macedo Azevedo da Rosa, Eduardo Costa, Rafael Soares , Sergio Bampi - Federal University of Pelotas (UFPel) - Brazil, Catholic University of Pelotas (UCPel) - Brazil, Federal University of Rio Grande do Sul (UFRGS) - Brazil*	1212
1309	14:15	Exploring Scaling Efficiency of Intel Loihi Neuromorphic Processor *Recep Buğra Uludağ, Serhat Çağdaş, Yavuz Selim İşler, Neslihan Serap Şengör, İsmail Aktürk - Özyeğin University -Yalova University -Osmaniye Korkut Ata University -Istanbul Technical University - Turkiye*	Multi-Vt based Energy Efficiency Optimization for DSHA ASIC Designs towards a Sustainable BTC Network *Asimina Koutra, Vasileios Tenentes - University of Ioannina - Greece*	1283

Oral 10: EDA: Tools, Design, Optimization

Monday, December 4, 14:00 to 15:40
Peridot Meeting Hall

Session Chair:
Sergio Bampi
Federal University of Rio Grande Do Sul

PAPER ID		
1051	14:00	Two-Archive Evolutionary Algorithm (TAEA)-Based Multi&Many Objective Analog IC Optimization *Enes Sağlıcan, Abdullah Bayram, Engin Afacan - Gebze Technical University -Turkiye*
1170	14:25	Optimizing Self-Organizing Maps for Bacterial Genome Identification on Parallel Ultra-Low-Power Platforms *Seyed Ahmad Mirsalari, Saba Yousefzadeh, Giuseppe Tagliavini, Dimitrios Stathis, Ahmed Hemani - University of Bologna - Italy, Kth Royal Institute of Technology - Sweden*
1158	14:50	ANN-Powered Reinforcement Learning-Based Analog Circuit Optimization *Hakan Taşkiran, Enes Sağlican, Engin Afacan - Gebze Technical University - Turkiye*
1271	14:15	A Tool for Automatic Radiation-Hardened SRAM Layout Generation *Leonardo Heitich Brendler, Hervé Lapuyade, Yann Deval, Ricardo Reis, François Rivet -/ Université de Bordeaux - Brazil, Université de Bordeaux - France,- Brazil*

Monday, December 4
16:00 to 17:40

Oral 11: Analog to Digital Converters II
Oral 12: Neural Networks II: Machine/Deep Learning
Oral 13: Neuromorphic Devices and Verification
Oral 14: Analog & Digital CAS Applications
Oral 15: Digital Circuits and Systems: Logic Cells

		Oral 11: Analog to Digital Converters II Monday, December 4, 16:00 to 17:40 The Grand Ballroom 1 Session Chair: Fayrouz Haddad	Oral 12: Neural Networks II: Machine/Deep Learning Monday, December 4, 16:00 to 17:40 The Grand Ballroom 2 Session Chair: Masanori Natsui *Tohoku University*	
PAPER ID				**PAPER ID**
1042	16:00	A High-efficiency Incremental Zoom SAR $\Sigma\Delta$ Capacitance-to-Digital Converter *Kaicong Dong, Hua Fan - University of Electronic Science and Technology of China - China*	Progressive Learning with Recurrent NeuralNetworkforSequence Classification. *Rupesh Raj Karn, Johann Knechtel - New York University - United Arab Emirates*	**1070**
1081	16:25	2.5A-Constant-Output-Current, Constant-Toff, 1.5MHz, 89%-Efficiency Switching Converter *Marcello Tettamanti, Florian Haller, Albino Pidutti, Paolo Del Croce, Andrea Baschirotto - University of Milano-Bicocca - Italy, Infineon Technologies Austria - Austria*	Ensemble Transfer Learning for Time Series Forecasting: a Sensitivity Analysis framework for a Shallow Neural Network *Witesyavwirwa Vianney Kambale, Ali Deeb, Taha Bernabia, Fadi Al Machot, Kyandoghere Kyamakya - Universitaet Klagenfurt - Austria*	**1120**
1087	16:50	A 250-MS/s 9.9-ENOB 80.7dB-SFDR Top-Plate Input SAR ADC with Charge Linearization *Gabriele Zanoletti, Lorenzo Scaletti, Gabriele Bè, Luca Ricci, Michele Rocco, Luca Bertulessi, Carlo Samori, Andrea Bonfanti - Politecnico di Milano - Italy*	Parameter-free Neural Field-based Optimal Design of Nonuniform Transmission Lines *Philipp Gerard Tremuel, Efstratios Gavves, Christoph Würsch, Klaus Frick, Robin Vetch - University of Amsterdam*	**1103**
1155	17:15	Hardware-Efficient Random-Modulation $\Sigma\Delta$ ADC for Per-Column CS Generation in Vision Sensor *Amir Khan, Jorge Fernandez Berni, Ricardo Carmona Galan - Universidad de Sevilla - Spain*	Transformers in Time Series Forecasting: A brief Transfer Learning Performance Analysis *Witesyavwirwa Vianney Kambale, David Krame Kadurha, Ali Deeb, Fadi Al Machot, Taha Bernabia, Kyandoghere Kyamakya - Universitaet Klagenfurt - Austria, Université Libre des Pays des Grands Lacs - Congo Democratic Republic, Norwegian University of Life Sciences - Norway, University of Oran 2 - Algeria*	**1121**

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PAPER ID		Oral 13: SS1 - 2: Neuromorphic Devices and Verification Monday, December 4, 16:00 to 17:40 The Grand Ballroom 3 Session Chair: A. S. Demirkol, A. Ascoli, R. Tetzlaff *Technische Universität Dresden, Germany*	Oral 14: Analog & Digital CAS Applications Monday, December 4, 16:00 to 17:40 Azure Meeting Hall Session Chair: Muhammad Adeel Pasha *Lahore University of Management Sciences (lums)*	PAPER ID
1111	16:00	Realization of Ternary Łukasiewicz Logic using BiFeO3 - based Memristive Devices *Feng Liu, Xianyue Zhao, Ziang Chen, Christopher Bengel, Nan Du, Stephan Menzel - Forschungszentrum Jülich Gmbh - Germany, Friedrich Schiller University Jena - Germany, Rwth Aachen University - Germany, Leibniz Institute of Photonic Technology - Germany*	A Feasibility Study on a Switched-Capacitor Based PUF in 28nm Technology *Bjoern Driemeyer - University of Ulm - Germany*	1021
1160	16:25	Modeling of a Nonvolatile Organic Memory Device with Memcapacitve Properties. *Lautaro N. Petrauskas, Anju K. Rohit Lal, Bahman K. Boroujeni, Stefan C. b. Mannsfeld, Frank Ellinger - Technische Universitaet Dresden - Germany*	Arbitrary Shaped High-Voltage RF Switch *Oguzhan Özdamar, Semen Syroiezhin, Andrea Cattaneo and Valentyn Solomko- Germany*	1022
1310	16:50	Nanoscale Mem-Devices for Chemical Sensing *Alon Ascoli, Bergoi Ibarlucea, Ronald Tetzlaff, Ertürk Enver Yildirim, Luis-Antonio Panes-Ruiz, Gianaurelio Cuniberti - Tu Dresden - Germany*	Hiding from Hardware Trojan Detectors by Avoiding Rare Events. *Mattis Hasler - Barkhausen Institut -Germany*	1084
	17:15			

Oral 15: Digital Circuits and Systems: Logic Cells

Monday, December 4, 16:00 to 17:40
Peridot Meeting Hall

Session Chair:
Mohammed E. Fouda
Nile University, Giza, Egypt

PAPER ID		
1062	16:00	A New Source-Coupled Logic Technique: ALSCL *Uğur Çini, Shuai Wang - Üsküdar Üniversitesi - Turkiye*
1163	16:25	Accuracy-, Delay- and Area-Driven Evaluation of Lower-Part Approximate Parallel Prefix Adder *Morgana Macedo Azevedo Da Rosa, Eduardo Costa, Rafael Soares, Sergio Bampi - Federal University of Pelotas- Brazil, Catholic University of Pelotas - Brazil, Federal University of Rio Grande do Sul- Brazil*
1189	16:50	Power, Performance and Area Optimization of Parallel Load Counters through Logic Minimization and TSPC-FF Utilization *Khaled Humood, Alex Serb, Shiwei Wang, Themis Prodromakis - The University of Edinburgh - United Kingdom*
1281	17:15	Fast and Low-Error Prediction of Logic Gate Cell Characterization *Gabriel Jacinto, Cinthia Schneider, Alexandra Zimpeck, Mateus Grellert, Cristina Meinhardt - Federal University of Santa Catarina - Brazil, Catholic University of Pelotas - Brazil, Federal University of Rio Grande do Sul - Brazil*

Tuesday, December 5
10:10 to 11:50

Oral 16: Analog Sub-Circuit Designs
Oral 17: SS5 - II: Amplifiers
Oral 18: SS1: Neuromorphic Devices, Circuits and Systems III
Oral 19: SS3: Defense Industry Technologies
Oral 20: Sensors and Sensing Systems I

	Oral 16: Analog Sub-Circuit Designs Tuesday, December 5, 10:10 to 11:50 The Grand Ballroom 1 Session Chair: Domenico Zito *Agh University of Science and Technology*	Oral 17: II: Amplifiers Tuesday, December 5, 10:10 to 11:50 The Grand Ballroom 2 Session Chairs: O. Kızılbey *Scientific and Technological Research Council of Türkiye* T. Nesimoglu *Middle East Technical University, Türkiye*	
PAPER ID			**PAPER ID**
1034	10:10 — Design of an Optimized 120-dB Dynamic Range Current-Steering DAC for Class-D Audio Amplifier. *Matteo De Ferrari, Francesco Stilgenbauer, Edoardo Botti, Cristiano Meroni, Edoardo Bonizzoni, Piero Malcovati - University of Pavia - Italy, Stm - Italy*	Design of 1.5-6 GHz High Efficiency 50W Power Amplifier Design for sub 6-GHz 5G Systems *Engin Çağdaş, Oğuzhan Kizilbey, Metin Yazgi, Osman Palamutçuoğulları - Tubitak Bilgem - Turkiye, Tubitak UME - Turkiye, Istanbul Technical University - Turkiye*	**1232**
1118	10:35 — A 114 ppm/°C-TC 0.78%-(σ/μ) Current Reference with Minimum-Current-Search Calibration. *Francesco Gagliardi, Andrea Ria, Massimo Piotto, Paolo Bruschi - University of Pisa - Italy*	10W Power Amplifier Design for sub-6GHz 5G Band via Virtual Gain Optimization *Yusuf Deniz Tandoğan, Sedat Kılınç, Alperen Tunç, Mustafa Berke Yelten - Istanbul Technical University - Turkiye, Istanbul University-Cerrahpasa - Turkiye*	**1237**
1128	11:00 — A TDC With Integrated Snapshot Circuit and Calibration in 28nm CMOS *Lauber Tim, Wang Lantao, Bastl Johannes, Vohl Kenny, Wunderlich Ralf, Heinen Stefan - Rwth Aachen University - Germany*	Linearity Issues in Dual Input Doherty-Outphasing Hybrid Power Amplifier Topology. *Alperen Tunç, Mustafa Berke Yelten - Istanbul Technical University - Turkiye*	**1249**
1187	11:25 — A Fully Integrated Negative Output Voltage Charge Pump for Implantable Single Photon Imagers-*Julian A. Singer, Jonas Hasmann, Anton Geläschus, Andreas Bahr, Matthias Kuhl - Hamburg University of Technology - Germany, University of Freibur - Germany*	An SRFT Tool to Design Broadband Microwave Amplifiers with Customized Objective Functions *Sedat Kılınç, Mehmet Aytuğ Ormancı, Binboğa Sıddık Yarman - Istanbul University-Cerrahpaşa - Teknopark-Istanbul - Turkiye*	**1297**

PAPER ID		Oral 18: SS1: Neuromorphic Devices, Circuits and Systems III Tuesday, December 5, 10:10 to 11:50 The Grand Ballroom 3 Session Chairs: A. S. Demirkol *Technische Universität Dresden, Germany*	Oral 19: SS3: Defense Industry Technologies Tuesday, December 5, 10:10 to 11:50 Azure Meeting Hall Session Chair: İ. H. Giden *ASELSAN Academy, Türkiye* *This session partially supported by* **aselsan**	PAPER ID
1140	10:10	Exploring Gate-Diversity Enabled by Reconfigurable Memristive Technology. *Sebastian Brandhofer, Ziang Chen, Li-Wei Chen, Xianyue Zhao, Nan Du, Ilia Polian - University of Stuttgart - University of Jena and Leibnitz Ipht*	Optimizing Data Availability and Utilization in Deep Learning Accelerator SoCs. *Çağla Irmak Rumelili Köksal, Nihat Mert Çiçek, Ayşe Yilmazer Metin, Berna Örs - Aselsan - Turkiye, Istanbul Technical University- Turkiye*	**1143**
1184	10:35	Scaling Limits of Memristor-Based Routers for Asynchronous Neuromorphic Systems. *Junren Chen, Siyao Yang, Huaqiang Wu, Giacomo Indiveri, Melika Payvand - University of Zurich and ETH Zurich - Switzerland*	Optimization of the Eigenvalue Decomposition of Floating-Point Matrices on the TMS320C6672 Digital Signal Processor. *Okan Çalış, Müştak Erhan Yalçın - Aselsan - Turkiye, Istanbul Technical University - Turkiye*	**1149**
1233	11:00	Torwards Variability Immune Scalable FeFET-based Macros for IMC DNN Accelerators. *Nellie Laleni, Taha Soliman, Cecillia de la Parra, Franz Muller, Tobias Kirchner, Andre Guntoro, Thomas Kampfe, Nobert Wehn, Taekwang Jang - Fraunhofer IPMS - Germany, Robert Bosch - Germany, TU Kaiserslautern - Germany, ETH - Switzerland*	Temporal Analysis of a Generic Uncooled Detector Response Under Extreme Environmental Conditions. *Enes Okay Koç, Özgür Murat Polat, Ibrahim Halil Giden, Onur Ferhanoglu - Aselsan - Türkiye*	**1188**
1307	11:25	A Qualitative Approach for the Design of a Locally Active Memristor Based Neuron Circuit. *Ahmet Samil Demirkol, Alon Ascoli, Ronald Tetzlaff, Jason Eshraghian, Sung-MoKang-Tu Dresden-Germany, UCSC - United States*	Lookupx: Next-Generation Quantization and Lookup Techniques for Empowering Performance and Energy Efficiency *Çağla Irmak Rumelili Köksal, Nihat Mert Çiçek, Ayşe Yilmazer Metin, Berna Örs - Aselsan - Turkiye, Istanbul Technical University - Turkiye*	**1204**

Oral 20: Sensors and Sensing Systems I

Tuesday, December 5, 10:10 to 11:50
Peridot Meeting Hall

Session Chair:
John Richard Hizon
*University **of** The Philippines,Diliman*

PAPER ID		
1030	10:10	A bioprotein-based flexible and self-powered pressure sensor towards a biomimic of an artificial Pacinian corpuscle *Zhao Wang, Bhavani Yalagala, Mahshid Hafezi, Hadi Heidari, Andrew Feeney - University of Glasgow - United Kingdom*
1104	10:35	A wide-spectrum 550-1600 nm, 16k VIS + 8 NIR pixels, high-dynamic range image-sensor for biomedical applications *Laurent Alacoque, David Coriat, Jean-Michel Tualle, Valentin Espinas, Xavier Alacoque, Anabela Da Silva, Guillaume Moritz, Sylvain Dumas, Dominique Ettori - Univ. Grenoble Alpes, CEA, Leti - France, Univ. Grenoble Alpes, CEA, List - France, Université Sorbonne Paris-Nord - France, Aix Marseille Univ, CNRS, Centrale Marseille, Institut Fresnel - France, Oncopole Claudius Regaud - France*
1141	11:00	Enhancing Reflectometry Systems with CHIRP-OMTDR and Compressed Sensing: A Study on Signal Recovery Quality *Yosra Gargouri, Nicolas Ravot, Mariem Slimani, Mickael Cartron - Cea - France*
1221	11:25	A Low-Voltage Wide Swing Image Sensor with Simultaneous Energy Harvesting and Imaging Modes *Zhipeng Li, Jian Guan, Haoning Sun, Yuqi Lin, Wenji Mo, Jingjing Liu - School of Electronics and Communication Engineering - China*

Tuesday, December 5
13:30 to 15:10

Oral 21: Low-Power, Low-Voltage Design
Oral 22: SS5 - I: Antennas & Filters
Oral 23: SS1: Neuromorphic Devices, Circuits and Systems IV
Oral 24: Circuits & Systems for Image Processing
Oral 25: Sensors and Sensing Systems II

	Oral 21: Low-Power, Low-Voltage Design Tuesday, December 5, 13:30 to 15:10 The Grand Ballroom 1 Session Chair: Edoardo Bonizzoni *University of Pavia, Italy*	Oral 22: SS5 - I: Antennas & Filters Tuesday, December 5, 13:30 to 15:10 The Grand Ballroom 2 Session Chairs: O. Kızılbey *Scientific and Technological Research Council of Türkiye* T. Nesimoglu *Middle East Technical University, Türkiye*	
PAPER ID			**PAPER ID**
1138	13:30	A 54-nA Quiescent Current Capless LDO with -39 dB PSRR at 1 MHz using Load-Tracking Bandwidth Extension Technique *Taehyun Kim, Byungik Kim, Jeongjin Roh - Hanyang University - Korea, South*	A Bandpass Filtering Approach Using Commensurate Transmission Lines *Berkay Kebapcıoğlu, Mehmet Alperen Baltacı, Sedat Kılınç, B. Sıddık Yarman - Istanbul Technical University, Istanbul University - Turkiye*	**1277**
1151	13:55	Voltage Reference Generator for Audio Interface in 55nm CMOS Technology Node. *Edoardo Barteselli, Luca Sant , Richard Gaggl, Andrea Baschirotto - Infineon Technologies Austria AG - Austria, University of Milano - Bicocca - Italy*	Design of Application Specific Matching Networks via SRFT for a Monopole Microstrip Antenna *Mehmet Aytug Ormanci, Alper Yildirim, Sedat Kilinc - Istanbul University-Cerrahpasa - Turkiye*	**1278**
1159	14:20	A 0.36-mm2 Fully Integrated Electronic Interface for PiezoMEMS in 0.35 µm CMOS technology.*Stefano D'amico, Giuseppe Biccario, Antonio Vincenzo Radogna, Massimo De Vittorio, Giuseppe Grassi-University of Salento-Cortus Sas-Istituto Italiano di Tecnologia - Italy*	Design and Simulation of an Array MicrostripYagi-Udaantenna for5G *Haveen Yaseen Hussein AL-Zahawi, Mohammad Sajjad Bayati, Sahereh Sahandabadi, Ali Dianat - Razi University - Iran, University of Windsor - Canada*	**1279**
1172	14:45	A Compact TIA in 22nm FDSOI CMOS for Qubit Readout in Monolithic Quantum Processors *Domenico Zito, Tan Doan Nhut - Agh University of Science and Technology - Poland, Aarhus University - Denmark*		

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2023 30th IEEE International Conference on Electronics, Circuits and Systems (ICECS)
4-7 December 2023 – Hilton Maslak İstanbul / Türkiye

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PAPER ID		Oral 23: Neuromorphic Devices, Circuits and Systems IV Tuesday, December 5, 13:30 to 15:10 The Grand Ballroom 3 Session Chairs: A. S. Demirkol, A. Ascoli, R. Tetzlaff *Technische Universität Dresden, Germany*	Oral 24: Circuits & Systems for Image Processing Tuesday, December 5, 13:30 to 15:10 Azure Meeting Hall Session Chair: Peter Szolgay *Pázmány Péter Catholic University Budapest, Hungary*	PAPER ID
1094	13:30	Improving Stochastic Quantum-Like Annealing Based on Rerandomization. *Ryoma Sasaki, Duckgyu Shin, Naoya Onizawa, Takahiro Hanyu - Tohoku University - Japan*	Improved Scene Classification by Dynamic CNNS *Elif Ecem Akbaba, Bilge Gunsel, Filiz Gurkan - Istanbul Technical University - Turkiye, Istanbul Medeniyet University - Turkiye*	1100
1218	13:55	Hardware - Software Co-Design Approach In Customizable Programmable Logic Based Neuromorphic System Design *Osman Yuksel, Burcu Erkmen - Yıldız Technical Univ. - Turkiye*	Rapid Deployment of Domain-specific Hyperspectral Image Processors with Application to Autonomous Driving. *Jon Gutierrez-Zaballa, Koldo Basterretxea, Javier Echanobe, Óscar Mata-Carballeira, M.Victoria Martínez - University of The Basque Country - Spain*	1115
1267	14:20	Memristor-Based Cellular Automata for Natural Language Processing *Ioannis Chatzipaschalis, Theodoros-Panagiotis Chatzinikolaou, Iosif-Angelos Fyrigos, Andrew Adamatzky, Antonio Rubio, Georgios Sirakoulis - Democritus University of Thrace - Greece*	A Tensor Singular Value Decomposition Accelerator for Hyperspectral Imaging Applications. *Shabirahmed Badashasab Jigalur, Yen-Cheng Kuan - National Yang Ming Chiao Tung University - Taiwan*	1294
1315	14:45	A Memristive True Random Number Generator *Muhammad Adil Malik , Christos Papavassiliou - Imperial College London - United Kingdom*		

Oral 25: Sensors and Sensing Systems II

Tuesday, December 5, 13:30 to 15:10
Peridot Meeting Hall

Session Chair:
Nathalie Deltimple
Ims Lab, Bordeaux Inp, France

PAPER ID		
1157	13:55	CDS Free Frame Differencing Event Vision Pixel with Lateral Overflow Capacitor for Dynamic Range Extension. *Marko Jaklin, Daniel García Lesta, Víctor Manuel Brea Sánchez, Paula López Martínez - Centro Singular de Investigación En Tecnoloxías Intelixentes - Spain*
1256	14:20	Transport mode recognition for smart eyewear using multimodal audio and accelerometer data *Lokmane Demagh, Patrick Garda, Cedric Gilbert, Khalil Hachicha - Essilorluxottica/ Sorbonnne Université - France*
1275	14:45	Quantifying the Impact of Integrating the HTC Vive Tracker with the Awinda Motion Capture System in Minimizing Positional Drift *Elie Chebel, Yara Corky, Omar Kassem, Burcu Tunç - Bahçeşehir University - Turkiye*

Tuesday, December 5
15:30 to 17:10

Oral 26: Circuits & Systems for Communications
Oral 27: SS5 - III: RF Applications
Oral 28: Memory Cell Circuits & Systems
Oral 29: Signal Processing in Circuits & Systems
Oral 30: Oscillators

		Oral 26: Circuits & Systems for Communications Tuesday, December 5, 15:30 to 17:10 The Grand Ballroom 1 Session Chair: Giuseppe Grassi *Università Del Salento*	Oral 27: SS5 - III: RF Applications Tuesday, December 5, 15:30 to 17:10 The Grand Ballroom 2 Session Chairs: O. Kızılbey *Scientific and Technological Research Council of Türkiye* T. Nesimoglu *Middle East Technical University, Türkiye*	
PAPER ID				**PAPER ID**
1073	15:30	Design of an 20 GHz Wide-Band Input Buffer. *Daniel Sebastiao, Joao Goes - NOVA School of Science and Technology (FCT NOVA) - Portugal*	Reconfigurable Matching Network for Wideband Frequency and Impedance Tuning. *Evren Uysal, Metin Yazgi, Tayfun Nesimoglu - ASELSAN Inc./ Istanbul Technical University - Turkiye, Middle East Technical University, Northern Cyprus Campus - Turkiye*	1196
1125	15:55	Multi-bit Receivers for High-Speed Communication over CAN Bus. *Andrea Gallone, Piero Malcovati - University of Pavia - Italy*	Modeling and Validation of an Isolated NMOS Transistor in a 0.25 µm SiGe-C BiCMOS Process *Engin Çağdaş, Huseyin Aniktar, M. Emin Tunbak, Volkan Fenercioglu, A. Ulvi Caliskan - Tübitak Bilgem - Turkiye*	1198
1127	16:20	A 4×32-Gb/s VCSEL Driver with Adaptive Feedforward Equalization in 65-nm CMOS. *Toshiyuki Inoue, Akira Tsuchiya, Keiji Kishine Daisuke Ito, Yasuhiro Takahashi, Makoto Nakamura - The University of Shiga Prefecture - Japan*	A Broadband Frequency Tunable Diamond-Shaped Metamaterial Resonator Using Varactor Diodes *Evren Uysal, Cumali Sabah, Tayfun Nesimoglu - Aselsan Inc./ istanbul Technical University -Middle East Technical University Northern Cyprus Campus - Turkiye*	1206
1137	16:45	Design of a 37-40GHz bidirectional amplifier for 5G FR2 radio beamforming systems in 22nm CMOS FD-SOI. *Lucien Paquien, Baudouin Martnieau, Didier Belot, Nathalie Deltimple - Cea Leti - France*		

	Oral 28: Memory Cell Circuits & Systems Tuesday, December 5, 15:30 to 17:10 The Grand Ballroom 3 Session Chair: Gabriele Ciarpi *University of Pisa*	Oral 29: Signal Processing in Circuits & Systems Tuesday, December 5, 15:30 to 17:10 Azure Meeting Hall Session Chair: Grazia Lo Sciuto Silesian University of Technology, Gliwice, Poland	
PAPER ID			**PAPER ID**
1077 15:30	Minipool: A 16-core NUMA-L1 Memory RISC-V Processor Cluster for Always-on Image Processing in 65nm CMOS **Samuel Riedel, Matheus Cavalcante, Manos Frouzakis, Domenic Wüthrich, Enis Mustafa, Arlind Billa, Luca Benini - ETH Zurich - Switzerland**	ReDiSto: A Resource-Efficient and Accurate Divider Circuit for Stochastic Computing *Mahnoor Aftab, Muhammad Adeel Pasha - Indiana University - United States, Lahore University of Management Sciences (lums) - Pakistan*	**1074**
1119 15:55	MNEMOSENE++: Scalable Multi-Tile Design with Enhanced Buffering and VGSOT-MRAM based Compute-in-Memory Crossbar Array *Carlos Escuin, Fernando García-Redondo, Mahdi Zahedi, Pablo Ibáñez, Teresa Monreal, Víctor Viñals, José María Llabería, James Myers, Julien Ryckaert, Dwaipayan Biswas, and Francky Catthoor - IMEC, Universidad de Zaragoza - Spain*	Robust Backstepping Finite-time Sliding Mode Control of a Quadrotor UAV-Suspended Load System with Obstacle Avoidance and Swing Attenuation **Abdulrahman Aliyu, Luai Muhammad Alhems - King Fahd University of Petroleum and Minerals - Saudi Arabia**	**1146**
1296 16:20	Static Noise Margin in 16 nm FinFET 6T and 8T SRAM Cells for Compute-in-Memory *Lorenzo Stevenazzi, Andrea Baschirotto, Marcello De Matteis - University of Milano-Bicocca - Italy*	Vehicle Crowd Analysis via Transfer Learning *Yusuf K. Hanoglu, Bilge Gunsel, Meltem Gulbas - ITU - Turkiye*	**1192**
16:45		A Low Complexity Block-oriented Functional Link Adaptive Filtering Algorithm. *Pavankumar Ganjimala, Subrahmanyam Mula - Indian Institute of Technology, Palakkad - India*	**1230**

Oral 30: Oscillators

Tuesday, December 5, 15:30 to 17:10
Peridot Meeting Hall

Session Chair:
Muneer Al Absi
King Fahd University of Petroleum & Minerals, Saudi Arabia

PAPER ID		
1097	15:30	Electrical and Wave Digital Modeling of CMOS-Based Ring Oscillators. *Bakr Al Beattie, Bharath Kumar Singh Muralidhar, Uhlmann Max,Gerhard Kahmen, Robert Rieger,Karlheinz Ochs-Ruhr-University Bochum-Kiel-University-IHP-Leibniz-Institut fur İnnovative Mikroelektronik - Germany*
1102	15:55	Flexible Routing to Overcome the Embedding Bottleneck of Oscillator-based Ising Machines. *Markus Graber, Klaus Hofmann - Technical University of Darmstadt - Germany*
1132	16:20	A 340 nA/MHz Low Power FLL-based RC Oscillator with < 1.5 % variation from -40 °C to 175 °C. *Pragya Malakar, John Pigott - Nxp semiconductors - United States*
1245	16:45	A 0.6V Beat-Frequency ADC with Processing of Oscillator Internal States for Resolution Improvement. *Roberto Andrino Robles, Tomochika Harada - Yamagata University - Japan*

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2023 30th IEEE International Conference on Electronics, Circuits and Systems (ICECS)
4–7 December 2023 – Hilton Maslak İstanbul / Türkiye

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Thursday, December 7
11:00 to 12:40

Oral 31: FPGA Applications I
Oral 32: Smart Systems for CAS Applications
Oral 33: Embedded and Micro/Systems
Oral 34: Phase-Locked Loop Circuits
Oral 35: Neural Networks I: Design & Optimization Techniques

PAPER ID		Oral 31: FPGA Applications I Thursday, December 7, 11:00 to 12:40 The Grand Ballroom 1 Session Chair: Mattis Hasler	Oral 32: Smart Systems for CAS Applications Thursday, December 7, 11:00 to 12:40 The Grand Ballroom 2 Session Chair: Yann Deval *IMS Lab - Univ. Bordeaux*	PAPER ID
1092	11:00	FPGA Based Intelligent Hardware Trojan Design and its SoC Implementation *Muhammad Ali Murtaza, Muhammad Adeel Pasha, Shahid Masud, Muhammad Yasir Qadri, Abdul Basit - Lums University - Pakistan, University of Essex - United Kingdom, Comsats University - Pakistan*	A Wearable Belt Mounted Ultrasound Arm Motion Tracking System *Eugen Pfann, Gregor Waizenauer, Mario Huemer - Johannes Kepler University Linz - Austria*	1122
1175	11:25	Implementation of a Hardware Accelerated VVC Codec on ARM and FPGA *Ali Emre Öztaş, Ege Özteke, Mahir Demir, Tankut Akgül - Istanbul Technical University - Türkiye*	Enabling Human Activity Recognition in Smart Public Transportation Systems in Presence of Dataset Imbalance *Roya Alizadeh, Yvon Savaria, Chahe Nerguizian - Ecole Polytechnique Montreal - Canada*	1133
1211	11:50	An Open-Source eFPGA-based SoC Design for Computation Acceleration *Yunus Emre Eryilmaz, Hasan Erdem Yantır, Müştak Erhan Yalçın - Tübitak Bilgem & Istanbul Technical University - Turkiye, Tübitak Bilgem - Turkiye*	An Indoor Smart Farm Sensor Node with an LED-based Energy Harvesting System *Bryan Christopher Bascos, Eric John Panganiban, John Richard Hizon, Marc Rosales, Paul Jason Co - University of The Philippines Diliman - Philippines*	1238
1301	12:15	Design and FPGA Implementation of UAV Simulator for Fast Prototyping *İrfan Akyavaş, Yusuf Aydın, Tuba Ayhan - Mef University - Turkiye*	A Hardware Accelerator Design for Quaternion to Euler Angles Conversion *Serkan Şenel, Ramazan Yeniçeri - Istanbul Technical University - Turkiye*	1312

		Oral 33: Embedded and Micro/Systems Thursday, December 7, 11:00 to 12:40 The Grand Ballroom 3 Session Chair: Yajun Ha Shanghaitech University	Oral 34: Phase-Locked Loop Circuits Thursday, December 7, 11:00 to 12:40 Azure Meeting Hall Session Chair: Federico Bizzarri Politecnico di Milano		
PAPER ID					**PAPER ID**
1045	11:00	HLS-based acceleration of the BIKE post-quantum KEM on embedded-class heterogeneous SoCs. *Andrea Galimberti, Gabriele Montanaro, Davide Zoni - Politecnico di Milano - Italy*	Comparison of DTC-Related Spurs in Fractional-N Digital PLLs with MASH-and-ENOP-based Divider Controllers. *Xu Wang, Michael Peter Kennedy - University College Dublin - Ireland*	1017
1213	11:25	Implementation of CRYSTALS-Kyber Post-Quantum Algorithm Using RISC-V Processor. *Ahmet Celik, Fatih Yilmaz, Mehmet Anil Korkmaz, Berna Ors - Istanbul Technical University - Turkiye*	Further Insights into Spur Immunity in MASH-Based Fractional-N CP-PLLs with Polynomial Nonlinearities. *Xu Lu, Michael Peter Kennedy - University College Dublin - Ireland*	1060
1261	11:50	Trikarenos: A Fault-Tolerant RISC-V-based Microcontroller for CubeSats in 28nm *Michael Rogenmoser, Luca Benini - ETH Zurich - Switzerland*	Stability Limited PLL bandwidth Derivation using Impulse Invariance Method. *Sumit Kumar - IIT Madras - India*	1152
1027	11:15	An Attention-Based Convolutional Neural Network for Facial Action Unit Detection Optimized for Embedded Systems Using Quantification Algorithms. *Mohammad Mahdi Deramgozin, Slavisa Jovanovic, Naeem Ramzan, Hassan Rabah - Université de Lorraine - France*	Simulation of Divider Phase Noise and Spurious Tones in Integer-N PLLs. *Aditya Narayanan, Nagendra Krishnapura - Indian Institute of Technology Madras - India*	1241

Thursday, December 7
14:00 to 15:40

Oral 36: VLSI Systems With Applications
Oral 37: SS4: Artificial Intelligence Methods for Modeling and Understanding the Human Brain
Oral 38: Linear and Non-Linear Circuits & Systems

Oral 35: Linear and Non-Linear Circuits & Systems

Thursday, December 7, 14:00 to 15:40
The Grand Ballroom 1

Session Chair:
Bilge Günsel
Istanbul Technical University

PAPER ID		
1054	14:00	On the Use of Buck ICs in the Implementation of the Non-Inverting Buck-Boost Topology *Federico Bizzarri, Paolo Nora, George Ivan, Mihai Tanase, Angelo Maurizio Brambilla - Politecnico di Milano - Italy, Microchip Technology srl - , Politecnico di Milano - Romania*
1098	14:20	Design of Phase-Interpolator Based Open-Loop Fractional Output Dividers *Xiaowei Liu, Edoardo Bonizzoni, Franco Maloberti, Alper Akdikmen, Haibin Liu, Yao Liu - University of Pavia - Italy, Microtera-M2 - Italy, Microtera Semiconductor - China*
1129	14:40	Harnessing a New 5-D Hyperchaotic System with Fibonacci Q-Matrix Encryption Scheme *Yehia Lalili, Toufik Bouden, Morad Grimes, Mustak Yalçın, Abderrazak Lachouri - University of Skikda - Algeria, University of Jijel - Algeria, Istanbul Technical University - Turkiye*
1055	15:20	Initialization of modular multilevel converters based on the shooting method *Davide Del Giudice, Federico Bizzarri, Daniele Linaro, Angelo Maurizio Brambilla - Politecnico di Milano - Italy*

ICECS 2023
2023 30th IEEE International Conference on Electronics, Circuits and Systems (ICECS)
4-7 December 2023 – Hilton Maslak İstanbul / Türkiye

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REPUBLIC OF TÜRKIYE

Oral 36: VLSI Systems With Applications

Thursday, December 7, 14:00 to 15:40
The Grand Ballroom 2

Session Chair:
Yiorgos Tsiatouhas
University of Ioannina

Oral 37: Artificial Intelligence Methods for Modeling and Understanding the Human Brain

Thursday, December 7, 14:00 to 15:40
The Grand Ballroom 3

Session Chairs:
F. Y.Vural
Middle East Tech. University, Türkiye
Nazif Arıca
Piri Reis University, Türkiye

PAPER ID		Oral 36	Oral 37	PAPER ID
1178	14:00	An Optimized VLSI Exponential Unit Design Exploring Efficient Arithmetic Operation Strategies *Patrícia Da Costa, Morgana Da Rosa, Rafael Soares, Eduardo Da Costa, Sergio Bampi - UFRGS - Brazil, UFPel - Brazil, UCPel-Brazil*	Structured MLP Model for FMRI Data *Erkin Eryol* *Middle East Technical University - Türkiye*	1080
1288	14:25	Area-Efficient VLSI Architecture of Key Switching for BGV Fully Homomorphic Encryption *Ming-Der Shieh, Kua-Yu Chen - National Cheng Kung University - Taiwan*	Early Diagnosis of Alzheimer Disease with Shannon Information Source Model of the Brain. *Ulaş Sedat Aydin, Abdulla Ahmadkhan, Fatoş Tunay Yarman Vural, Gönül Günal Değirmendereli - Middle East Technical University - Turkiye*	1295
1290	14:50	VLUT: Design and Evaluation of Variable band LUT to realize Activation Functions *Rohit Rohit, Shivam Dudeja, Madhav Rao - IIIT Bangalore - India*	A Collaborative Fusion of Vision Transformers and Convolutional Neural Networks in Classifying Cervical Vertebrae Maturation Stages. *Salih Furkan Atıcı, Hongyi Pan, Mohammed H Elnagar, Veerasathpurush Allareddy, Rashid Ansari, Omar Suhaym, Ahmet Enis Cetin - University of Illinois Chicago - United States*	1299
1139	15:15	Fully Monolithic 1A Thermoelectric Cooler Controller with 90% Efficiency *Sowmyashree Srinivas, Hitesh Shrimali IIT Mandi - India*	Experimental Results of 1C1R Structure Based on Knowm Memristor. *Abdulaziz Alshaya, Adil Malik ,Andrea Mifsud,Christos Papavassiliou - Imperial College London - United Kingdom*	1308

POSTER PRESENTATIONS

Poster 1: Embedded Micro/Systems & Sensors

Monday, December 4, 2023, 14:00 to 15:40, Foyer

Session Chairs:
Alper Akdikmen

PAPER ID		
1024	P1-01	An Empirical Study of Convolutional Neural Network Compressions within Low-Power Devices. *Thomas Garbay, Karim Hocine, Khalil Hachicha, Andrea Pinna, Bertrand Granado - Sorbonne Université - France*
1083	P1-02	A Compact-Area Low-Power Temperature Sensor Featuring High Supply Voltage Scalability, *Elisabetta Moisello, Piero Malcovati, Edoardo Bonizzoni-University of Pavia- Italy*
1136	P1-03	Ultra-low power readout electronics for wireless gas sensors in IoT. *Juan Luis Soler-Fernández, Omar Romera, Angel Dieguez, J. Daniel Prades, Oscar Alonso - University of Barcelona - Spain*
1153	P1-04	A Reinforcement Learning Model for Industrial Filling Process Control *Ömer Sabri Emeksiz, Mert Eren Ağcabay, Engin Maşazade, Suat Selim, Taner Boysan - Marmara University - Turkiye, Baykon Industrial Weighing Systems - Turkiye*
1199	P1-05	Thermal Noise Analysis of Accumulation-based S/H Circuit for Shunt Current Sensing *Jaya Satyanarayana Yarragunta, Antonio Aprile, Andreas Fugger, Francesco Conzatti, Edoardo Bonizzoni, Piero Malcovati - University of Pavia - Italy, Infineon Technologies Austria - Austria*
1239	P1-06	Wearable Air Quality Monitoring Platform for Personal Exposure *Joseph Karl Jr. Salva, Nicole Betina Pascual, Marinella Dennise Guzman, John Richard Hizon, Marc Rosales, Jaybie De Guzman - University of The Philippines Diliman- Philippines*
1250	P1-07	CNTFET-based Approximate Ternary Adder Design *Rawan Mohammed, Lobna Said, Ahmed Radwan, Mohammed Fouda - Nile Univeristy - Egypt, Nile University - Egypt, Rain AI - United States*
1274	P1-08	Multi-sensory Anti-Collision Design for Autonomous Nano-Swarm Exploration *Mahyar Pourjabar, Manuele Rusci, Luca Bompani, Lorenzo Lamberti, Vlad Niculescu, Daniele Palossi, Luca Benini - University of Bologna - Italy, Ku Leuven - Belgium, Eth Zurich - Switzerland, Idsia - Switzerland*
1300	P1-09	Mini-CACTUS-V2: A HEP ASIC Prototype for 50 ps Time Resolution *Yujing Gan, Fabrice Guilloux, Jean-Pierre Meyer, Phillippe Schwemling, Raimon Casanova, Sebastian Grinstein, Yavuz Degerli - IFAE - Spain, CEA-Irfu - France*
1332	P1-10	Neural network developed for obstacle avoidance of the four wheeled electric vehicle *Grazia Lo Sciuto, Pawel Kowol, Pawel Nowak, Wacław Banas, Salvo Coco, Giacomo Capizzi - Silesian University of Technology - Poland, Ersity of Technology - Poland, University of Catania - Italy, Niversity of Catania - Italy*
1314	P1-11	Mutual Inductance Evaluation Between Two Parallel Conductors on a PCB *Fares Tounsi, Sana Chouaibi, Mohamed Hadj Said, Dorra Nasr, Mossaad Ben Ayed, Denis Flandre - Uclouvain - Belgium, Sousse University - Tunisia, Sousse University - Belgium*
1229	RP-01	FPGA Implementation of Area-Time Aware ECC Scalar Multiplication Core *Khalid Javeed - University of Sharjah - United Arab Emirates*
1078	RP-02	Fast Electrochemical Impedance Measurement and Classification System Based on Machine Learning algorithms *Mohamed El-Badi,Ahmed EL-Wakil,Sohaib Majzoub-University Of Sharjah-United Arab Emirates*
1025	RP-03	Grey Wolf Optimizer Aided ANN Based Behavioral Modelling Scheme for Fully Printed VO2 Switches *Saddam Husain, Damir Kanymkulov, Miras Akhmetov, Galymzhan Nauryzbayev, Mohammad Hashmi - Nazarbayev University - Kazakhstan*

Poster 2: EDA & Low-Power, Low-Voltage Systems

Monday, December 4, 2023, 16:00 to 17:40, Foyer

Session Chair:
Elisabetta Moisello
University Of Pavia

PAPER ID		
1032	P2-01	10 Gb/s Line Driver in 65 nm CMOS Technology for Radiation Environments *Gabriele Ciarpi, Marco Mestice, Daniele Rossi, Fabrizio Palla, Sergio Saponara - University of Pisa - Italy, INFN Pisa - Italy*
1148	P2-02	A 55nm CMOS, 2.6ppm/°C, 1.2V supply and -85dB PSR curvature compensated bandgap reference circuit for MEMS microphones *Francesco Spreafico, Luca Sant, Richard Gaggl, Andrea Baschirotto - University of Milano-*
1150	P2-03	Bootstrap Capacitor Charge Control Method for GaN-based 4-Switch Buck-Boost Converter *Minseok Lee, Dongsu Lee, Jeongjin Roh - Hanyang University - Korea, South*
1176	P2-04	Capacitive Power Transfer Modeling of Charging Inner-body Devices *Shahenda Abdelhafiz, Lobna Said, Ahmed Radwan, Mohammed Fouda - Nile Univeristy - Egypt, Nile University - Egypt, Rain Al- United States*
1185	P2-05	A PVT Variation Dependencies of VCO in Frequency Locked Loop *Kota Hara, Satoshi Komatsu - Tokyo Denki University - Japan*
1191	P2-06	An Energy-efficient and Fast KNN Search Accelerator for Large Scale Point Cloud Map *Yunhao Hu, Hao Sun, Chunxu Guo, Qi Deng, Yajun Ha - Shanghaitech University - China*
1244	P2-07	Modeling for Low Power Bypass Window SAR ADC Based on Highest Weight Capacitor Splitting *Kangkang Sun, Huan Wu, Jian Guan, Zhipeng Li, Jingjing Liu - Sun Yat-Sen University - China*
1264	P2-08	Layer-Minimization-Oriented GNR Area Routing *Chia-Heng Yen, Jin-Tai Yan - National Yung-Ming Chiao-Tung University - Taiwan, Tainan National University of The Arts - Taiwan*
1317	P2-09	An Activity Factor List for Energy Consumption of SRAM-based CIM Architectures *Berke Akgül, Tufan Coşkun Karalar - Istanbul Technical University, Turkey*
1292	P2-10	BTI Aging Influence in SRAM-based In-Memory Computing Schemes and its Mitigation, *Christina Dilopoulou, Yiorgos Tsiatouhas - University of Ioannina - Greece*

Poster 3: Bio-Medical, Audio, Image, and Video Processing CAS

Tuesday, December 5, 2023, 10:10 to 11:50, Foyer

Session Chair:
Mustafa Berke Yelten
Istanbul Technical University

PAPER ID		
1036	RP-07	**Design of An Autoencoder-Based Audio Compression and Decompression System** *Khaled Salah - Siemens - United States*
1039	P3-02	**Multipolar Stimulator for DBS Application with Concurrent Imbalance Compensation** *Reza Shokri, Yarallah Koolivand, Omid Shoaei, Orazio Aiello, Daniele Caviglia - University of Tehran - Iran, Khajeh Nasir Toosi University of Technology - Iran,University of Genoa - Italy*
1046	P3-03	**CNN Ensembles for Pear Leaf Disease Severity Estimation** *Mohamed Rayane Lakehal, Hassiba Nemmour, Mohamed Lamine Bouibed, Yakout Fetmouche, Melissa Harchaoui, Youcef Chibani - USTHB - Algeria*
1201	P3-04	**Time of Arrival Estimation Performance of VDES-R Mode with the Presence of Multipath Propagation** *Tolga Kağan Tüfekçi,Yalçin Şadi, Hüseyin Şafak Esenyurt-Havelsan Inc.,* *Kadir Has University - Turkiye*
1209	P3-05	**Low Frequency and Low Power Oscillator using Thyristor-Based Delay Elements for Optoelectronic Implants** *Anton Geläschus, Md Wasif Absar, Julian A. Singer, Andreas Bahr, Matthias Kuhl - Hamburg University of Technology - Germany, University of Freiburg - Germany*
1231	P3-06	**Quantitative Assessment of Extensor Carpi Radialis Muscle Thickness Change Using the Pulse-Echo Method** *Sandy Cochran, Priyanka Dhiwa, Hadi Heidari, Meraj Ahmad, Hannah Thomson, James FC Windmill - University of Glasgow - United Kingdom, University of Strathclyde - United Kingdom*
1042	P3-07	**Data Partition Optimization for High Energy Efficiency by Decoupling Local Dependence in Holographic Video Decoder** *Xinzhe Liu, Jianwen Luo, David Blinder, Fupeng Chen, Heng Yu, Peter Schelkens, Francky Catthoor, Yajun Ha - Shanghaitech University - China, Vrije Universiteit Brussel - Belgium, Synopsys - China, University of Nottingham Ningbo-China, Interuniversity Microelectronics Centre - Belgium*
1246	P3-08	**Minimum Signal-To-Noise Ratio For High Classification Radar Accuracy** *Nouhaila Rzaik, Cédric Dehos, Mykhailo Zarudniev, Alexandre Siligaris Siligaris, José Luis Jiminez Gonzalez - CEA LETI - France*
1251	P3-09	**Embedded 1D Convolutional Network based ECG Classification Platform for Remote Health Monitoring** *Amira Zemouri, Ali Rida Ismail, Slavisa Jovanovic, Hassan Rabah - Université de Lorraine - France*
1293	P3-10	**AusculNET: A Deep Learning framework for Adventitious Lung Sounds Classification** *Charalampos Papadakis and Leandro M. Giacomini Rocha and Francky Catthoor and Nick Van Helleputte and Dwaipayan Biswas - IMEC - Belgium*
1040	RP-04	**Artificial Intelligence-based Motion Sickness Detection: A Survey** *Ghazal Rahimzadeh, Darius Nahavandi, Shady Mohamed, Houshyar Asadi, Saeid Nahavandi - Deakin University - Australia, Swinburne University of Technology - Australia*
1166	RP-05	**Development and Evaluation of ANN, ACOR-ANN, ALO-ANN Based Small-Signal Behavioral Models for GaN-on-Si HEMT.** *Kashif Khan, Saddam Husain, Galymzhan Nauryzbayev, Mohammad Hashmi - Nazarbayev University - Kazakhstan*

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4-7 December 2023 – Hilton Maslak İstanbul / Türkiye
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		Poster 4: Machine/Deep Learning and Other Smart Systems for CAS Applications **Tuesday, December 5, 2023, 13:30 to 15:10, Foyer** **Session Chair:** Ramazan Yeniçeri *Istanbul Technical University*
PAPER ID		
1035	RP-08	Chatbot as a Virtual Assistant to Retrieve Information from Datasheets Using Memory Controllers Domain Knowledge *Khaled Salah - Siemens - United States*
1063	P4-02	RF Energy Harvesting with Wide Input Power Range *Hong-Yi Huang, Chun-Wei Wu, Nieva M. Mapula - National Taipei University - Taiwan*
1067	P4-03	A 1~50mA 20ns Settling Time Low Dropout Regulator *Hong-Yi Hong-Yi, Yu-Ming Tsao, Angelo Nico M. Daroy, Kuo-Hsing Cheng - National Taipei University - Taiwan, National Central University - Taiwan*
1072	P4-04	An S-Matrix-Based Model of a Capacitive-Inductive Channel for Wireless Power and Data Transmission *Alessandro Liotta, Elisabetta Moisello, Giovanni Frattini, Pietro Giannelli, Piero Malcovati, Edoardo Bonizzoni - University of Pavia - Italy, Analog Devices S.R.l. - Italy*
1090	P4-05	Design and Implementation of a RISC-V core with a Flexible Pipeline for Design Space Exploration *Jonathan Saussereau, Christophe Jego, Camille Leroux, Jean-Baptiste Begueret - IMS Laboratory - France*
1095	P4-06	Error-Sensitivity-Aware Write-Energy Optimization Method for an MTJ-Based Binarized Neural Network *Ken Asano, Masanori Natsui, Takahiro Hanyu - Tohoku University - Japan*
1109	P4-07	A comprehensive generalization of a Graph-Attention-Network GAT based system towards real IP analog-mixed-signal AMS schematics structure recognition *Ali Deeb, Mohamed Salem, Abdalrahman Ibrahim, Witesyavwirwa Vianney Kambale, Joachim Pichler, Fadi Al Machot, Kyandoghere Kyamakya - Department of Smart Systems Technologies - Austria, Faculty of Science and Technology - Norway*
1162	P4-08	Data acquisition based on a single-board computer for a low-frequency optical accelerometer *Abraham Perez-Alonzo, Fernando Velazquez-Carreon, G. E. Sandoval-Romero - Universidad Nacional Autonoma de Mexico - Mexico*
1177	P4-09	High Precision Carry-Look-Ahead Logic for Negation, Absolute Value, and Two's Complement *Riley Jackson, Maxwell Phillips, Firas Hassan, and Ahmed Ammar* *Department of Electrical and Computer Engineering and Computer Science* *Ohio Northern University, Ada, OH, USA*
1265	P4-10	A Regularization Approach to Maximize Common Sub-Expressions in Neural Network Weights *Emmanouil Kavvousanos, Ioannis Kouretas, Vassilis Paliouras, Thanos Stouraitis - University of Patras - Greece, Khalifa University - United Arab Emirates*
1286	RP-06	Forecasting Global Mean Sea Level Rise using Autoregressive Models *Leena Elneel, Mohammed Sami Zitouni - Univeristy of Dubai - United Arab Emirates*

## Poster 5: Analog/Mixed-Signal/Microwave/Power Circuits

Thursday, December 7, 2023, 11:00 to 12:40, Foyer

Session Chair:
Tuba Ayhan
MEF University

PAPER ID		
1023	P5-01	Optimization of Third Order Nonlinearities in MOSFET-Based Capacitive Antenna Aperture Tuner Devices *Oğuzhan Özdamar, Semen Syroiezhin, Valentyn Solomko - Industry - Germany*
1029	P5-02	A Constant - Vov / - gm Technique based on a Self-Biased Current Source for MOS Transistors *Jürgen Oehm, Dominik Veit - Ruhr University Bochum - Germany*
1053	P5-03	A Low Noise TIA with T-network Feedback Using High Value Gate Controlled PMOS Resistors, *Hakan Çetinkaya, Yasin Talay - Tübitak - Turkiye*
1071	P5-04	A Low Power 16 Gbps CTLE and Quarter-Rate DFE With Single Adaptive System *Kuo-Hsing Cheng, Chun-Yao Chang, Hong-Yi Huang, Yun-Teng Shih - National Central University - Taiwan, National Taipei University - Taiwan*
1096	P5-05	Reconfigurable Linear Amplifier for Envelope-Tracking Hybrid Supply Modulator *Po-Hung Lin, Hsiao-Chin Chen, Hao-Ping Ting - National Taiwan University of Science and Technology - Taiwan*
1116	P5-06	A High-speed Low-power Sense Amplifier for the RRAM Array with Multi-level Reading Function using 130-nm Technology *Running Guo, Ruolan Jia, Stefan Pechmann, Marc Reichenbach, Amelie Hagelauer - Technical University of Munich - Germany, University of Rostock - Germany*
1161	P5-07	Efficient Co-Design Methodology combinig Fast and Accurate System-level Simulations with Transistor-level Characterization *Mathieu Guerin, Fayrouz Haddad, MD-Hossain Sazzad,Ivan Kaufmann,Christian Hedayat, Wenceslas Rahajandraibe, Remy Vauche, Ulrich Hilleringmann - Amu-France, Fraunhofer - Germany*
1180	P5-08	A Compact Low-Power Time-Domain Winner-Take-All Circuit *Min-Seok Seol, Bai-Sun Kong - Sungkyunkwan University - Korea, South*
1183	P5-09	Design of High PSR Bandgap Reference Using Impedance-Splitting Negative-R-Assisted Technique *Jung Sik Kim, Jeongjin Roh, - Hanyang University - Korea, South*
1200	P5-10	An X-Band Class-B Push-Pull Power Amplifier on a 0.25 μm SiGe-C Process *Huseyin Aniktar, Engin Çagdas, Huseyin Serif Savci, Osman Palamutcuogullari - Tübitak Bilgem - Türkiye*
1222	P5-11	A Subthreshold CMOS Inverter-Based Amplifier for Low Power and Low Noise Applications, *Landon Schmucker, Payman Zarkesh-Ha, Luke Emmert, Wolfgang Rudolph, Vitaly Gruzdev - University of New Mexico - United States*
1266	P5-12	MSLandslide: A MultiSource Segmentation For Remote Sensing Landslide Images. *Marwa Chendeb El Rai, Muna Darweesh - American University in Dubai - United Arab*
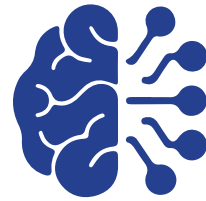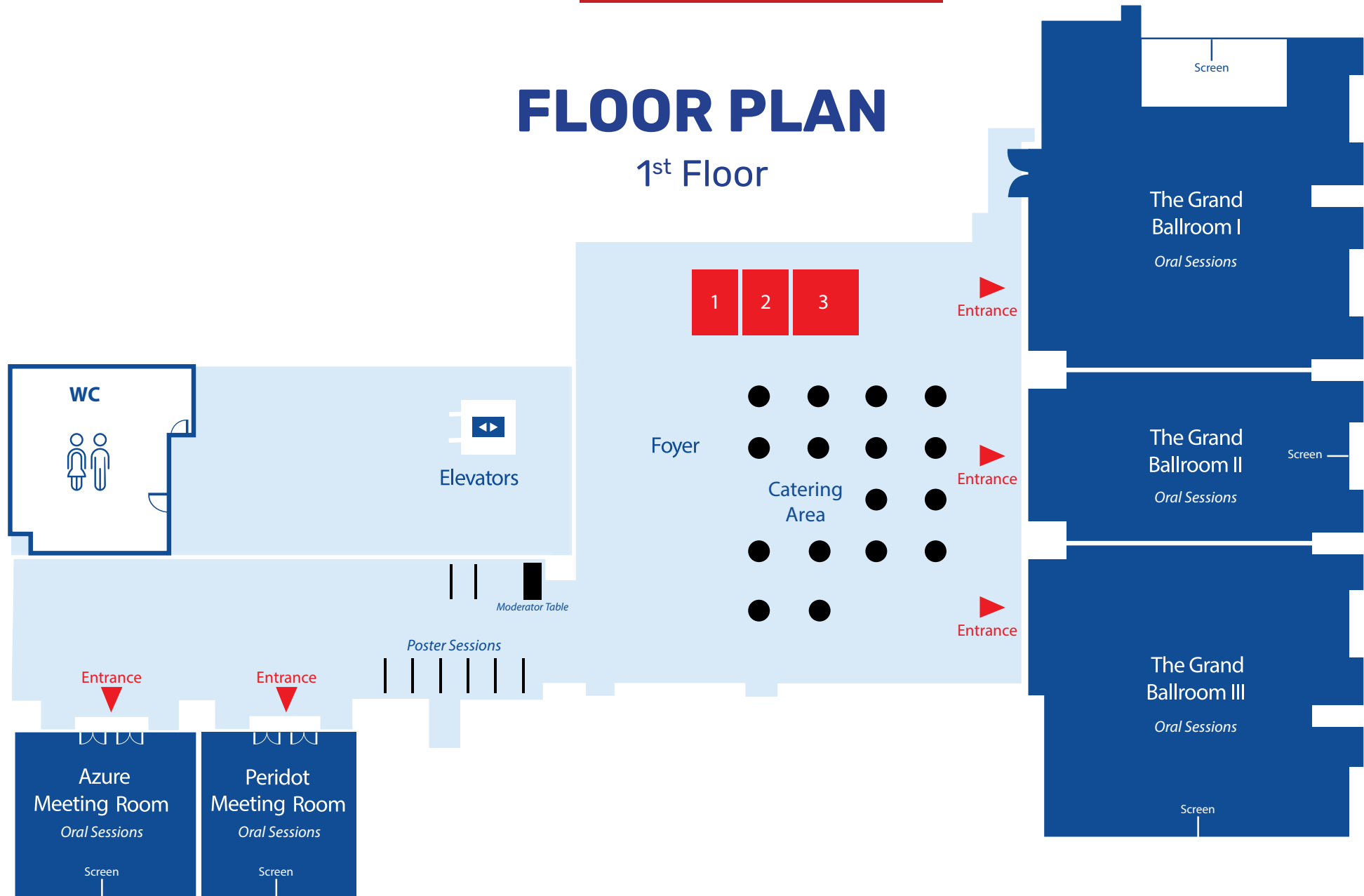
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