PROGRAM

TUESDAY, 25TH FEBRUARY

REGISTRATION 13:00 – 17:00		
	ROOM	**EDS MINI – COLLOQUIUM**
8:30 – 9:10	**AQCUA 3**	**"Leveraging semiconductor technology for the benefit of society"** Fernando Guarín, PhD GlobalFoundries, East Fishkill, NY, USA
9:10 – 10:00	**AQCUA 3**	**"Semiconductor Industry: A story of unprecedented growth, and we are just getting started!"** Ravi Todi, PhD Western Digital, Milpitas, CA, USA
10:00 – 10:30	**Coffee Break**	
10:30 – 11:20	**AQCUA 3**	**"Nanoelectronics to Nanotechnology: Challenges and Direction"** Durga Misra, PhD New Jersey Institute of Technology, NJIT, NJ USA
11:20 – 12:00	**AQCUA 3**	**"Reliability and Instability of GaN Power Field-Effect Transistors"** Jesús del Álamo, PhD Massachusetts Institute of Technology, Cambridge, MA, USA
12:00 – 13:10	**AQCUA 3**	**"Current Progress and Advances in Polymer Solar Cells"** Lluis F. Marsal, PhD University Rovira i Virgili Tarragona, Spain
13:10 – 14:20	**LUNCH / SRC MEETING**	
13:00 – 17:00	**EDS – ETC** **SNAP CIRCUITS TRAINING [TEC SJO]**	
14:20 – 14:50	**AQCUA 3**	**"Influence of Substrate Bias on the Mobility of Nanowire MOSFETs"** Marcelo Antonio Pavanello Department of Electrical Engineering, Centro Universitario FEI, Sao Bernardo do Campo, Brazil

	MOS – AK	
14:50 – 15:20	**AQCUA 3**	**"Analytical Current-Voltage Model for Double Gate a-IGZO TFTs with Symmetric Structure"** Antonio Cerdeira Altuzarra Solid-State Electronic Section, Dept. Electrical Engineering CINVESTAV, Mexico City
15:20 – 15:50	**AQCUA 3**	**"Approaches for Analytical (Compact) Modeling of Tunneling Currents in MOS Transistors"** Alexander Kloes Technische Hochschule Mittelhessen – University of Applied Sciences NanoP – Competence Center for Nanotechnology and Photonics Giessen, Germany
15:20 – 16:20	**Coffee Break**	
16:20 – 16:50	**AQCUA 3**	**"Modeling the Junctionless Ion Sensitive Field Effect Transistor"** Jean-Michel Sallese Swiss Federal Institute of Technology Lausanne (EPFL), 1015 Lausanne, Switzerland
16:50 - 17:20	**AQCUA 3**	**"The area scaling of charge trap induced time-dependent variability"** Gilson Wirth, UFRGS, Porto Alegre, Brazil
17:20 - 17:50	**AQCUA 3**	**"Characterization and modeling of 1/f noise in organic and IGZO TFTs"** Benjamin Iñiguez, Department of Electrical, Electronics Engineering and Automachine, Universitat Rovira i Virgili, 43007 Tarragona, Spain
18:00 – 19:00	**AQCUA 3**	**SRC MEETING (private)**
19:00 – 21:00	**WELCOME COCKTAIL**	

WEDNESDAY, 26TH FEBRUARY

REGISTRATION 7:00 – 17:00		
8:00 – 8:30	**OPENING CEREMONY**	
	VENTO 3	**VENTO 2**
8:30 – 9:00	**Invited "Status, Trends, Challenges and Possible Solutions for Nanoelectronic Devices"** Francis Balestra	**LASCAS – Imaging Techniques**
9:00 – 9:20	**A-2**	
9:20 – 9:40	**A-3**	
9:40 – 10:00	**A-4**	
10:00 – 10:30	**Coffee Break**	
10:30 – 11:30	**Keynote: "Integrated Platform Research"** Dr. Vida Ilderem Director of Integrated Platform Research, VP Intel Labs.	
11:30 – 13:00	**LUNCH**	
13:00 – 14:00	**Keynote: "Cognitive and Computational Neuroscience"** Dr. Shihab Shamma University of Maryland UMD	
14:00 – 15:00	**Keynote: "Nanoscale III-V Electronics: InGaAs FinFETs and Vertical Nanowire MOSFETs"** Jesus A. del Alamo Massachusetts Institute of Technology MIT	
15:00 – 16:00	**Posters/LAEDC Flash Session***	**Coffee Break**
16:20 – 16:50	**Invited "Status and Future Prospects of CMOS Scaling and Moore's Law – A Personal Perspective"** Frank Schwierz	**LASCAS - Sensors**
16:50 – 17:20	**Invited "A Journey from Devices to Systems with Negative Capacitance Transistors (NCFETs)"** Hussam Amrouch	**LASCAS - Sensors**

17:20 – 17:40	**D-3**	**M-1**
17:40 – 18:00	**D-4**	**M-2**
18:00 – 18:20	**D-5**	**M-3**
18:20 – 18:40	**D-6**	**M-4**
18:40 – 19:00		**M-5**
19:00 – 21:00	**IEEE YP/WIE NETWORKING SESSION**	

Device Physics

A-1	**Invited "Status, Trends, Challenges and Possible Solutions for Nanoelectronic Devices"** Francis Balestra
A-2	**Time Dependent Threshold Voltage Variability due to Random Telegraph Noise** Gilson Wirth
A-3	**Microwave High-Voltage CBiCJFET Technology for Analog Integrated Circuits** Dmitry Drozdov, Nikolay Prokopenko, Evgeny Savchenko, Pavel Dukanov, Andrey Grushin and Anna Bugakova
A-4	**MiSiM: Microstructured Fibers' Simulator** Paola Montero, Ricardo Román-Brenes, Francisco Siles and Jaime Cascante-Vindas

Devices and Materials

D-1	**Invited "Status and Future Prospects of CMOS Scaling and Moore's Law – A Personal Perspective"** Frank Schwierz
D-2	**Invited "A Journey from Devices to Systems with Negative Capacitance Transistors (NCFETs)"** Hussam Amrouch
D-3	**Analysis of the Electrical Parameters in SOI n-type Junctionless Nanowire Transistors at High Temperatures** Thales Augusto Ribeiro and Marcelo Antonio Pavanello
D-4	**Analysis of the Thermal Properties of Self-Cascode Structures Composed by UTBB Transistors** Fernando José Costa, Renan Trevisoli Doria, Michelly De Souza and Rodrigo Trevisoli Doria
D-5	**Dynamic Response Considerations in Typical CMOS-MEMS Accelerometer Structures** Benito Granados-Rojas, Alfredo Reyes-Barranca, Griselda Stephany Abarca-Jiménez and Yesenia Eleonor Gonzalez-Navarro

D-6	**Single and complex devices on three topological configurations of HfO2 based RRAM** Óscar G. Ossorio, Samuel Poblador, Guillermo Vinuesa, Salvador Dueñas, Helena Castán, Marcos Maestro-Izquierdo, Mireia G. Bargalló and Francesca Campabadal
D-7	**Stress- and Trap-Induced Body Fluctuations in 45nm SOI MOSFETs** Edmundo Gutierrez, Oscar Huerta and Omar Lopez

Modeling

M-1	**Equation-based modeling of electrothermal behavior of a SiC MOSFET chip during a short circuit** Yannick Dumollard, Emmanuel Batista, Jean-Marc Dienot and Laurent Pecastaing
M-2	**Dynamic Validation of the Full Model for AOSTFTs using a Ring Oscillator based on a-IGZO TFTs** Jorge Gaspar, Yoanlys Hernandez, Magali Estrada, Antonio Cerdeira and Benjamin Iñiguez
M-3	**Modernization of Low-Temperature JFET Models Built into LTspice CAD Systems, Taking into Account the Results of their Experimental Study** Oleg Dvornikov, Valentine Dziatlau, Vladimir Tchekhovski, Nikolay Prokopenko, Alexey Zhuk and Anna Bugakova
M-4	**Parameter extraction and compact drain current model for IGZO transistor from 210K up to 370K** Harold Cortes-Ordonez, Wondwosen Eshetu Muhea, Magali Estrada, Antonio Cerdeira, Gerard Ghibaudo, Xavier Mescot and Benjamin Iñiguez Nicolau
M-5	**Invited: Schottky barrier height extraction of multi-channel one-dimensional FETs,** Anibal Pacheco-Sanchez, Eloy Ramirez-Garcia, Mauro Alberto Enciso-Aguilar and David Jiménez

THURSDAY, 27TH FEBRUARY

	VENTO 3	VENTO 2
8:20 – 8:50	**Invited "Exploring Quantum Tunneling in Ultrathin Transistors with Multiple Top Gates"** Stefan Blawid	**LASCAS – Artificial Intelligence**
8:50 – 9:20	**Invited "Self-Heating in FinFETs: Characterization, Reliability and Impact on Logic Circuits"** Durga Misra	
9:20 – 9:40	**D-10**	
9:40 – 10:00	**D-11**	
10:00 – 10:30	**Coffee Break**	
10:30 – 11:30	**Keynote: "Overview of 5G Radio Systems, Requirements, Challenges, and Research Areas"** Dr. Sayfe Kiaei Arizona State University ASU	
11:30 – 13:00	**LUNCH**	
13:00 – 13:50	**Keynote: "Energy-Scalable Many-Core Servers: Follow Your Brain!"** Dr. David Atienza École Polytechnique Fédérale de Lausanne EPFL	
13:50 – 14:20	**Invited "Granularity Effects in Electromigration"** Lado Filipovic	**Invited "Threshold Voltage Adjustment in Organic Thin-film Transistors Through the Use of Interface Amino Acids Interlayers"** Eloi Ros
14:20 – 14:40	**Invited "Electrical Characterization of Advanced MOSFETs Towards Analog and RF Applications"** Valeriya Kilchytska	**O-2**
14:40 – 14:50		**O3**
14:50 – 15:00	**Invited "Emerging CMOS Compatible Magnetic Memories and Logic"** Viktor Sverdlov	
15:00 – 15:10		**O4**
15:10 – 15:20		
15:20 – 15:50	**Coffee Break**	

15:50 – 16:10	**A-6**	**Invited "Threshold Voltage of Organic Field-effect Transistors"** Yvan Bonnassieux
16:10 – 16:20	**M-6**	
16:20 – 16:30		**O-6**
16:30 – 16:40	**M-7**	
16:40 – 16:50		**O-7**
16:50 – 17:00	**M-8**	
17:00 – 17:10		**O-8**
17:10 – 17:20	**M-9**	
17:20 – 17:30		
17:30 – 21:00	**GALA DINNER**	

Devices and Materials

D-8	**Invited "Exploring Quantum Tunneling in Ultrathin Transistors with Multiple Top Gates"** Stefan Blawid
D-9	**Invited "Self-Heating in FinFETs: Characterization, Reliability and Impact on Logic Circuits"** Durga Misra
D-10	**Electrical and Thermal Characterization for SOI p-type FinFET down to Sub- Kelvin Temperatures** Omar Lopez Lopez, Ismael Martínez Ramos, Edmundo A. Gutierrez Dominguez, Daniel Durini Romero, Daniel Ferrusca Rodriguez, Miguel Velazquez, Francisco J. De la Hidalga Wade and Victor H. Gómez Rivera
D-11	**Technologies for Realisation of Ultra-thin Chips** Yogeenth Kumaresan, Nivasan Yogeswaran and Ravinder Dahiya
D-12	**Invited "Granularity Effects in Electromigration"** Lado Filipovic
D-13	**Invited "Electrical Characterization of Advanced MOSFETs Towards Analog and RF Applications"** Valeriya Kilchytska
D-14	**Invited "Emerging CMOS Compatible Magnetic Memories and Logic"** Viktor Sverdlov

Organic Devices

O-1	**Invited "Threshold Voltage Adjustment in Organic Thin-film Transistors Through the Use of Interface Amino Acids Interlayers"** Eloi Ros

O-2	**Noise Based Variability Approach for DC Statistical Analysis of Organic TFT Based Circuits** Aristeidis Nikolaou, Jakob Leise, Jakob Pruefer, Ute Zschieschang, Hagen Klauk, Ghader Darbandy and Alexander Kloes
O-3	**Subphthalocyanine-Diketopyrrolopyrrole conjugates for Non-Fullerene Acceptor-based Polymer Solar Cells with a High Open Circuit Voltage** José Guadalupe Sánchez López, María João Álvaro Martins, Giulia Lavarda, Desiré Molina Alcaide, Tomás Torres, Josep Pallarès, Ángela Sastre Santos and Lluis F. Marsal
O-4	**Study of the Degradation of PTB7-Th:PC70BM-based Solar Cells using TiOx as Electron Transport Layers under Ambient Environment** Alfonsina Abat Amelenan Torimtubun, José G. Sánchez, Josep Pallarès and Lluis F. Marsal
O-6	**New Deposition Technique for Inverted Polymer Solar Cells Using ZnO-ETL** Enas Moustafa, José Sanchez, Lluis Marsal and Josep Pallarés
O-7	**Design and Simulation of Flexible Thin-Film Electrodes for Cell Culture Stimulation** Juan J. Montero-Rodríguez, Karla Ramirez-Sanchez, Gerardo Valladares-Castrillo, Esteban D. Avendano-Soto and Ricardo Starbird-Perez
O-8	**Effect of Thermal Annealing up to 200°C on SnO Thin Films Deposited at Room Temperature by Direct Current Magnetron Sputtering** Samuel Martinez Arreola, Salvador Ivan Garduño Vertiz, Norberto Hernandez Como and Magali Estrada del Cueto

Modeling

M-6	**Does the threshold voltage extraction method affect device variability?, Gabriel Espineira, Antonio Jesus García Loureiro and Natalia Seoane**
M-7	**Numerical Simulation of Wideband SiC N-N Heterostructure Diode** Udayan Patankar
M-8	**Analytical Method Based On A Trapezoidal Shape For Edgeless Gate Enclosed (EGE) MOSFET Width Over Length Calculation** Boris Contreras, Jean-Michel Sallese and Gladys Ducoudray
M-9	**SPICE Simulation of Radiation Induced Charges and Currents in Silicon Substrate** Chiara Rossi and Jean-Michel Sallese

FRIDAY, 28TH FEBRUARY

	VENTO 3	VENTO 2
8:30 – 9:00	**Invited "R&D Opportunities in Photovoltaic Systems"** Pritpal Singh, PhD	**LASCAS – Digital Communications**
9:00 – 9:20	**A-7**	
9:20 – 9:40	**A-8**	
9:40 – 10:00	**D-7**	
10:00 – 10:30	**Coffee Break**	
10:30 – 11:30	**Keynote: "Artificial Neural Networks for EMC Engineering"** Dr. Christian Schuster Hamburg University of Technology	
11:30 – 13:00	**LUNCH**	
13:00 – 14:00	**Keynote: "The Medicine of the Future You'll Take Only Once, and it is Bioelectronic"** Dr. Wouter Serdjin Delft University of Technology	
14:00 – 14:20	**O10**	**Invited "Graphene for Radio Frequency Electronics"** Henri Happy
14:20 – 14:30	**O11**	
14:30 – 14:40		**A10**
14:40 – 14:50	**O12**	
14:50 – 15:00		**A11**
15:00 – 15:10	**Invited "Musculoskeletal Modeling as a Tool for Biomechanical Analysis"** Manuel Cardona	
15:10 – 15:30		**IEEE Special Interest Group on Humanitarian Technologies (SIGHT) – Funding Opportunities**
15:30 – 16:00	**Coffee Break**	
16:00 – 16:20	**Invited "Scaling Down Channel Dimensions in Thin-Film Transistors: Challenges and Prospects"** Ananth Dodabalapur	**LASCAS – System Simulation and Test**

16:20 – 16:40	**M-10**	
16:40 – 17:00	**M-11**	
17:30 – 18:00	**CLOSING CEREMONY**	

Device Physics

A-5	**Invited "R&D Opportunities in Photovoltaic Systems"** Pritpal Singh, PhD
A-6	**Direct Source-to-Drain Tunneling Current in Ultra-Short Channel DG MOSFETs by Wavelet Transform** Kerim Yilmaz, Atieh Farokhnejad, Francisco Criado, Benjamín Iñíguez, François Lime and Alexander Klös
A-7	**Influence of thermal annealing on MIM and MIS structures with Al2O3 and a-HIZO deposited at low temperature** Isai Hernandez, Ivan Garduño and Norberto Hernandez
A-8	**Analysis of Inkjet Printing Conditions for ZnO Nanoparticles Patterns Towards the Fabrication of Fully Printed Thin Film Devices** Josue Fajardo, Salvador Ivan Garduño and Magali Estrada del Cueto
A-10	**Using Current Pulses to Control the Intermediate Conductance States in Hafnium Oxide-Based RRAM Devices** Hector Garcia, Oscar G. Ossorio, Salvador Dueñas and Helena Castán
A-11	**Evolution of Electron Device Education and Research at Rochester Institute of Technology** Robert Pearson and Ivan Puchades
A-12	**Invited "Scaling Down Channel Dimensions in Thin-Film Transistors: Challenges and Prospects"** Ananth Dodabalapur

Organic Devices

O-9	**Invited "Musculoskeletal Modeling as a Tool for Biomechanical Analysis"** Manuel Cardona
O-10	**Impact of the Hafnium Oxide as Hole Blocking Layer on the Performance of Organic Solar Cells** Magaly Ramírez Como, Victor S. Balderrama Vázquez, Magali Estrada de Cueto, Angel Sacramento Orduño, José G. Sánchez López and Lluis F. Marsal
O-11	**Inverted Polymer Solar Cells Using V2O5/NiO as anode selective contact: Degradation Study** Angel Sacramento, Victor Balderrama, Magaly Ramírez-Como, José G. Sánchez, Magali Estrada and Lluis F. Marsal
O-12	**Assessing water content in polymers using capacitive sensors: Impact of the water distribution** Rosane Moura Dos Santos, Catherine Dehollain Dehollain, Marco Mattavelli, Diego Barrettino and Jean-Michel Sallese

Modeling

M-10	**Modeling a nanometer FD-SOI transistor with a basic all-region MOSFET model** Mariana Siniscalchi, Nicolás Gammarano, Sylvain Bourdel, Carlos Galup-Montoro and Fernando Silveira

M-11	**Modeling and simulation of MEMS test structures using finite element method for stress mapping in thin film coatings** Parsoua Abedini Sohi, Irina Stateikina and Mojtaba Kahrizi

Posters/Flash Session*

(Wednesday 26th February 15:00 – 16:00)

P1	**Voice command integrated with Electric wheelchair system design and electro stimulator for people with spinal cord injury.** Luisa Amanda Navarrete Traña
P2	**Proposal of facial recognition system for optimized access control using IoT** Federico Machado, Héctor Carías and Pedro Alvarez
P3	**Facial Recognition System Model of Automated Registration with Computer Vision** Julio Bello Pavón and Byron Murillo Melendez
P4	**Loyal Lighting Smart lighting system with IoT.** Kenneth Lacayo Arauz, Oscar Cruz Mendoza and Julio Bello Pavón
P5	**Development of virtual plant over embedded system.** Luis Kelman Belloso Huezo and Denis Alfredo Altuve Santamaría
P7	**Division algorithms - From Past to Present Chance to Improve Area Time and Complexity for Digital Applications** Udayan Patankar and Miguel Flores
P8	**RFID Data-logger prototype to primary traceability in Nicaragua** Gerardo Huerta Robles and Eliezer Mendez Delgado
P9	**Sistema acuapónico automatizado para cultivo familiar en comunidades de terreno vulnerable en Nicaragua** Cristian Alberto Garcia Cruz and Lesly Mariela Escobar Garcia
P10	**Intelligent vehicle parking counting system in shopping centers through an Arduino app powered by solar energy.** Danny Luna
P11	**UV Meter for Testing Quality of Water treated by a Solar Water Disinfection System** Javier Urquizo, Christa Cook, Wesley Shugart-Schmidt, Viviana Villavicencio and Pritpal Singh
P12	**Automation of an electric block making machine with select material for the rural community of Quilaca, Chinandega through a pulley system** Alexis Orlando Solis Melendez
P13	**Design of a low-cost ECG implemented at Pastor Jimenes health center in Jalapa Nueva Segovia, Nicaragua** Pedro Caceres and Brandon Sandy
P14	**Design of a voltage multiplier module for tangent tests of dielectric loss angle to be used at National University of Engineering. UNI-Nicaragua.** Luis Chévez