



11th Spanish Conference on Electron Devices
Barcelona, 8-10 February 2017



HAND PROGRAM

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8-10
FEBRUARY
2017



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CDE 2017 – PROGRAM

Wednesday February 8th, 2017

9:00 h – 11:30 h
9:00 h – 9:30 h

**REGISTRATION
PRELIMINAR WELCOME (Albert Romano & Atilà Herms)**

9:30 h – 10:15 h PLENARY TALK -1 **Dr. Frank Schwierz: 2D electronics and to speak on FET scaling, down to 1 nm)**
Institut für Mikro- und Nanoelektronik, Technische Universität Ilmenau, Ilmenau, Germany

10.15 h – 11:35 h SESSION 1. GRAPHENE, NEW MATERIALS, AND DEVICE PROCESSING

R-0076	Impact of scattering mechanisms and dimensions scaling in Graphene Field-Effect transistors Pedro Carlos Feijoo Guerro, Francisco Pasadas , José Manuel Iglesias , María Jesús Martín , Raúl Rengel , David Jiménez Jiménez
R-0080	Resistive switching behavior of graphene oxide films in symmetric metal-insulator-metal structures Eduard Masvidal-Codina , Jordi Muñoz , Gerard Pedreira , Raquel Rodríguez-Lamas , Adrián Sáez , Gemma Rius
R-0082	Making the most of transconductance: Optimization of graphene solution-gated field-effect transistors geometry for sensing applications. Eduard Masvidal Codina, Xavier Illa Vila, Rosa Villa Sanz, Jose Antonio Garrido Ariza, Anton Guimerà Brunet
R-0086	Transformation of graphene into graphene oxide by controlled electrical discharges for metal/insulator devices. Angel Luis Alvarez Castillo, Fernando Borrás , Jorge S. Moreno , Carmen Coya , Rodrigo Picos , Esteban Climent , Carmen Munuera , Alicia de Andrés

11:35 h – 12:00 h COFFEE BREAK



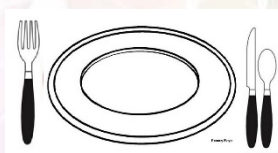
12:00 h – 13:00 h SESSION 2A. DEVICE MODELING AND SIMULATION. NEW DEVICE CONCEPTS.

R-0009	2D Simulation Evaluation of PE-TFET device. Daniel Nagy , Antonio J. García Loureiro, Karol Kalna , Natalia Seoane
R-0038	High channel mobility in 4H-SiC N-MOSFET using N2O oxidation combined with Boron diffusion treatment. Maria Cabello , victor Soler , Josep Montserrat , Jose Rebollo , Philippe Godignon , Jose Millán
R-0052	Influence of Process-Voltage-Temperature variations on the behavior of a hybrid circuit FET-SET. Esteve Amat , Joan Bausells , Francesc Perez Murano.

13:00 h – 14:00 h SESSION 5A. OPTOELECTRONIC, PHOTOVOLTAIC DEVICES AND DISPLAYS. HYBRID AND ORGANIC ELECTRONICS

R-0059	Combination of sub-second annealing techniques to reduce lateral segregation of Ti in Si supersaturated material. Eric García Hemme, Mao Wang , Slawomir Prucnal , Rodrigo García Hernansanz, Daniel Montero , Javier Olea , German González Díaz, Shengqian Zhou, W. Skorupa
R-0061	MOVPE issues in the development of ordered GaInP metamorphic buffers for multijunction solar cells. Manuel Hinojosa Arner, Iván García Vara, Carlos Algora del Valle
R-0095	Understanding the limiting factors of solvent annealed Small molecule-bulkheterojunction organic solar cells from an experimental perspective. Daniel Fernandez, Aurelien Viterisi, Vijay Challuri, James W. Ryan, Eugenia Martinez-Ferrero, Francesc Gispert-Guirado, Marta Martinez, Eduardo Escudero, Caterina Stenta, Lluís Marsal, Emilio Palomares

14:00 h – 15:15 h LUNCH



Wednesday February 8th, 2017

15:15h – 16:00h PLENARY TALK - 2 Dr. Jr-Hau He: ***Stable photocatalytic hydrogen evolution of Si-based photoelectrochemical cells up to 18%***
Computer, Electrical and Mathematical Sciences and Engineering (CEMSE) Division,
King Abdullah University of Science & Technology (KAUST)

16:00 h – 17:00 h SESSION 4A. SENSORS, ACTUATORS AND MICRO/NANO SYSTEMS. Including Biomedical devices.

R-0021	Resistive gas sensors employing late transition metal doped n-type metal oxide nanomaterials. Eduard Llobet , Toni Vilic , Eric Navarrete , Sergio Roso
R-0032	From materials to devices: bottom-up integration of nanomaterials onto silicon microstructures for thermoelectric and piezoelectric applications. Luis Fonseca , Carlos Calaza , Marc Salleras , Inci Donmez , Gonzalo Murillo , Jaume Esteve , Albert Tarancón , Alex Morata , Jose D. Santos , Gerard Gadea
R-0037	Coupling Defects in Macroporous Silicon Photonic Crystals. David Cardador Maza, Didac Vega Bru, Daniel Segura Garcia, Angel Rodriguez Martinez

17:00 h – 18:00 h COFFEE BREAK



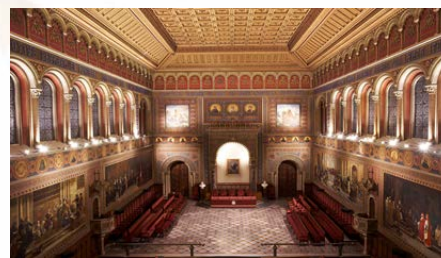
17:00 h – 18:30 h POSTER DISCUSSION

Posters will be displayed through all days of conference.



19:30 h – 21:30 h

WELCOME RECEPTION at PARANINFO (Historical Building).
Introduction by **Dr. Oriol Pujol, vicerector de Transformació Digital**



Facultat de Física - UB, Carrer de Martí
Universitat de Barcelona, Gran Via de les Corts Catalanes

Enviar indicaciones a tu teléfono

9:52-10:22 30 min
63
9:59 desde Diagonal-Av Joan XXIII - 10 min tarde
8 min cada 20 min

9:50-10:23 33 min
L3

9:50-10:20 30 min
L3 L2

9:55-10:33 37 min

Thursday February 9th, 2017

8:00 h – 9:00 h REGISTRATION

8:45 h – 9:30 h PLENARY TALK - 3 **Dr. Alejandro Pérez: Thin film chalcogenide solar cells: Challenges and perspectives for cost efficient photovoltaic technologies.**
IREC - Catalonia Institute for Energy Research, Barcelona, Spain

9:30 h – 11:30 h SESSION 3A. CHARACTERIZATION AND RELIABILITY.

R-0007	Conduction mechanisms in HIT solar cells. Rodrigo García Hermansanz, Eric García Hemme, Daniel Montero Álvarez, Álvaro del Prado Millan, Ignacio Mártel de la Plaza, Cristóbal Voz, L.G. Gerling, J. Puigdollers, Ramón Alcubilla
R-0011	A Physically Based Model to describe Resistive Switching in different RRAM technologies. Gerardo Gonzalez Cordero, Mireia Bargallo Gonzalez, Hector Garcia Garcia, Francesca Campabadal Segura, Salvador Dueñas Carazo, Helena Castan Lanaspá, Francisco Jimenez Molinos, Juan Bautista Roldan Aranda
R-0018	Resistive switching phenomena on Ta2O5-TiO2 based MIM structures. Salvador Dueñas, Helena Castán, Héctor García, Tónis Arroval, Aile Tamm, Taivo Jõgiaas, Kaupo Kukli, Jaan Aarik
Break of some minutes.	
R-0019	Resistive Switching with Bipolar Characteristics in TiN/Ti/HfO2/W Devices. Samuel Poblador Cester, María Cruz Acero Leal, Mireia Bargalló González, Francesca Campabadal Segura
R-0023	Analytical transfer equations for the spectral modelling of III-V multi-junction concentrator solar cells. Eduardo Fernández F.
R-0029	Control of the Bipolar Resistive Switching Conductivity for Neuromorphic Computing Applications. Marta Pedro Puig, Javier Martínez Martín, Mireia Bargallo Gonzalez, Rosana Rodríguez Martínez, Francesca Campabadal Segura, Montse Nafria Maqueda, Xavier Aymerich Humet

11:30 h – 12:30 h COFFEE BREAK and POSTER DISCUSSION



12:30 h – 13:15 h:

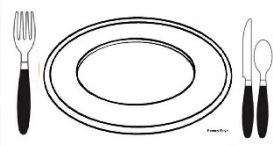
Fernando Martín Galende “EU funding opportunities for R&D projects in electronics”
Dpto. de Programa Marco de I+D de la Unión Europea - CDTI



13:20 h – 14:20 h SESSION 2B. DEVICE MODELING AND SIMULATION. NEW DEVICE CONCEPTS.

R-0036	Microwave detection up to 43.5 GHz by GaN nano-diodes: Experimental and analytical responsivity. Héctor Sánchez Martín, Sergio Sánchez Martín, Óscar García Pérez, Susana Pérez Santos, Javier Mateos López, Tomás González Sánchez, Christophe Gaquière, Ignacio Iñiguez de la Torre Mulas
R-0066	Power Transfer Efficiency of Silicon Nanostructured Thermoelectric Generators. Paula López Martínez, Gabriel Capeáns García, Andrea Hernández Rodríguez, Diego Cabello Ferrer
R-0048	DC characteristics with substrate temperature for GaN on Si MOS-HEMTs. Raúl Rodríguez del Rosario, Benito González Pérez, Javier García García, Aurelio Vega Martínez, Antonio Núñez Ordóñez

14:30 h – 15:45 h LUNCH



Thursday February 9th, 2017

15:45h – 16:30h PLENARY TALK - 4 Dr. Josep Samitier: Evolution from lab-on-a-chip to organ-on-a-chip.
Nanobioengineering group, Institute for Bioengineering of Catalonia (IBEC), Baldiri Reixac 10-12, 08028 Barcelona, Spain

16:30 h – 17:30 h SESSION 4B. SENSORS, ACTUATORS AND MICRO/NANO SYSTEMS. Including Biomedical devices.

R-0042	Active surface potential control in nanostructured MOX layers. Manuel Domínguez-Pumar , Lukasz Kowalski , Raul Calavia , Eduard Llobet
R-0047	Multisensor platform for indoor air quality. Gemma García Mandayo, Jurgi González de Chávarri Ostolaza, Emily Anne Hammes , Laura Parellada Monreal, Irene Castro Hurtado, Enrique Castaño Carmona, Isabel Ayerdi Olaizola, Helmut Knapp
R-0020	Conditioning Lab on PCB to Control Temperature and Mix Fluids at the Microscale for Biomedical Applications. Miguel Cabello Valverde, Carmen Aracil Fernández, Francisco Perdigones Sánchez, Jose Manuel Quero Reboul

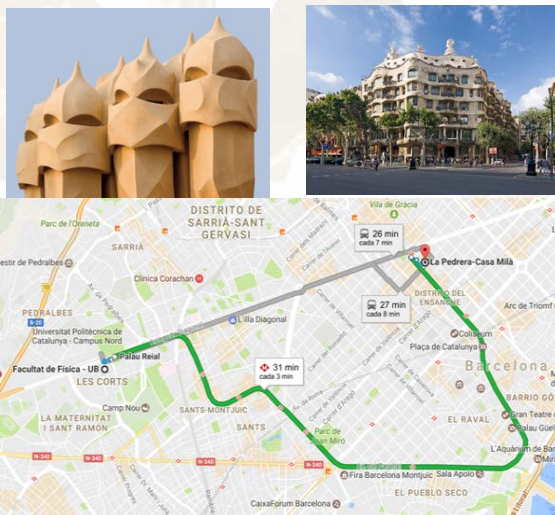
17:30 h – 18:30 h: SESSION 5B. OPTOELECTRONIC, PHOTOVOLTAIC DEVICES AND DISPLAYS. HYBRID AND ORGANIC ELECTRONICS.

R-0040	Monocrystalline Si quasi-spheres obtained by high-temperature reorganization in solid phase. MOISES GARIN ESCRIVA, MARIA MAGDALENA SOLA GARCIA, RAMON ALCUBILLA GONZALEZ
R-0043	Hydrogenated amorphous SiTi for photovoltaic applications. Javier Olea Ariza, Eric García Hemme, Rodrigo García Hernansanz, Daniel Montero Álvarez, Enrique San Andrés Serrano, Ignacio Mártel de la Plaza
R-0045	Effects of Pd-doped TiOx on High Efficiency Organic Solar Cells Performance. Lluís F. Marsal Garví, Josep Pallarès Marzal, José Guadalupe Sánchez López, Víctor Samuel Balderrama Vázquez, Magali Estrada del Cueto, Josep Ferré Borrull, Caterina Stenta

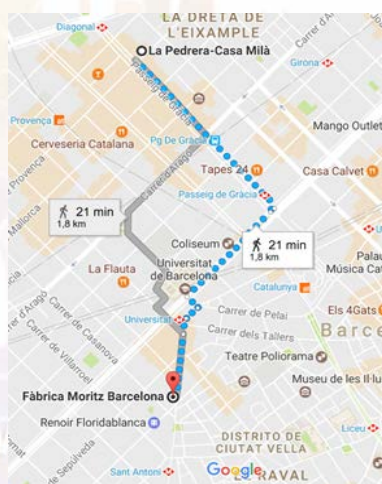
19:00 h - SOCIAL EVENT:

VISIT TO CASA MILÀ (LA PEDRERA)

First group of people begins at 19h00
Second group of people begins at 19h30



21:00 h - GALA DINNER.



Friday February 10th, 2017

8:45h – 9:30h PLENARY TALK -5

Dr. Ricardo García: Frontiers in nanotechnology: A force microscopy perspective.
Instituto de Ciencia de Materiales de Madrid, CSIC. Madrid, Spain

9:30 h – 10:30 h SESSION 5C.

OPTOELECTRONIC, PHOTOVOLTAIC DEVICES AND DISPLAYS. HYBRID AND ORGANIC ELECTRONICS.

R-0004	Dopant-Free Carrier Selective Contacts: A Paradigm-Shift in Crystalline Silicon Photovoltaic Technology. Luis Guillermo Gerling , Gerard Masmitja , Pablo Ortega , Isidro Martín , Cristóbal Voz , Joaquim Puigdollers , Ramón Alcobilla
R-0013	Multijunction solar cells incorporating Group IV SiGeSn alloys. Pablo Caño Fernández, Andrew Johnson , Ignacio Rey-Stolle
R-0027	Supersaturated Silicon based devices for Focal Plane Array detectors for the near and mid IR range at room temperature. Daniel Montero Álvarez, Rodrigo García Hernansanz, Eric García Hemme, Javier Olea Ariza, Enrique San Andrés Serrano, Álvaro Del Prado Millán, Germán González Díaz

10:30 h – 11:30 h SESSION 4C.

SENSORS, ACTUATORS AND MICRO/NANO SYSTEMS. Including Biomedical devices

R-0063	Measuring low H field and currents with AMR sensors. Miriam Naranjo Esparcia, Cándid Reig , Jan Kubik , Pedro Tomás Molina, Javier Calpe Maravilla
R-0084	Technological solutions for large area microstrip radiation silicon sensors for the LHC upgrade. Javier Fernández Tejero, Miguel Ullán Comes, Celeste Fleta Corral, David Quirion
R-0090	Single metal oxide nanowires for gas sensing. Guillem Domènech Gil, Elena Lopez Aymerich, Irmina Peiró Riera, Jordi Samà , Paolo Pellegrino , Isabel Gràcia , Barth Sven , Albert Romano Rodríguez

11:30 h – 12:30 h COFFEE BREAK and POSTER DISCUSSION

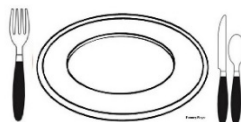


12:40 h – 14:00 h SESSION 3B.

CHARACTERIZATION AND RELIABILITY.

R-0033	Atomic Layer Deposition and Characterization of Erbium-Iron-Oxide Thin Films. Tamm Aile , Kalam Kristjan , Seemen Helina , Kukli Kaupo , Heikilä Mikko , Link Joosep , Dueñas Salvador , Castán Helena
R-0035	Geometry and bias dependence of trapping effects in planar GaN nanodiodes. Héctor Sánchez Martín, Oscar García Pérez, Ignacio Iñiguez de la Torre Mulas, Susana Pérez Santos, Javier Mateos López, Christophe Gaquière , Tomás González Sánchez
R-0054	In situ TEM assessment of nanoresistive switching in Ni-HfO ₂ -Si capacitors: the conducting filament mechanism. Gemma Martín , Mireia B. González, Francesca Campabadal , Sònia Estradé , Francesca Peiró , Albert Cornet
R-0085	Effects of HfO ₂ Gate dielectric and KOH-based pre-treatments on AlGaIn/GaN Metal-Oxide-Semiconductor High Electron Mobility Transistors. Zhan Gao , M ^o Fátima Romero Rojo, Fernando Calle Gómez

14:00 h – 15:30 h LUNCH



15:30 h – 16:30 h: SESSION 2C.

DEVICE MODELING AND SIMULATION. NEW DEVICE CONCEPTS.

R-0062	RF noise model for AlGaIn/GaN HEMT. Wondwosen Eshetu Muhea , Fetene Mulugeta Yigletu , Antonio Lazaro , Benjamin Iñiguez
R-0073	Monte Carlo analysis of III-V PIN diodes for Tunnel-FETs and Impact Ionization-MOSFETs. Beatriz García Vasallo, Vincent Talbo , Tomás González , Yoann Lechaux , Nicolas Wichmann , Sylvain Bollaert , Javier Mateos
R-0097	Analysis of bidirectional switch solutions based on different power devices. Manuel Fernández Martínez, Xavier Perpiñà Giribet, Miquel Vellvehi Hernández, David Sánchez Sánchez, Tomás Cabeza Gozalo, Sergio Llorente Gil, Xavier Jordà Sanuy, José Millán Gómez

16:30 h – 17:00 h AWARDS CEREMONY and CLOSING REMARKS.