



# 11<sup>th</sup> Spanish Conference on Electron Devices

Barcelona, 8-10 February 2017

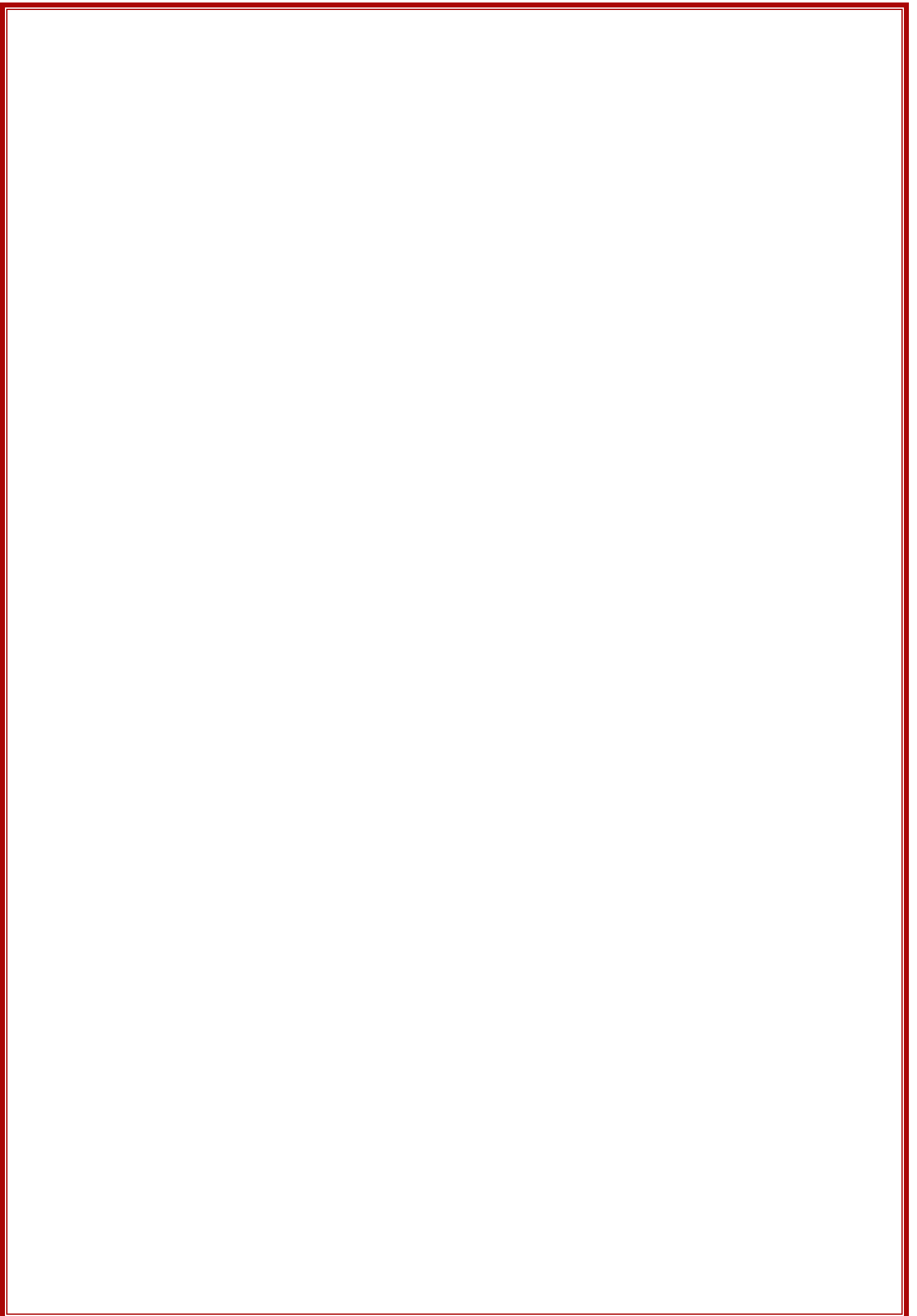


# BARCELONA

**8-10  
FEBRUARY  
2017**



[www.cde2017.es](http://www.cde2017.es)





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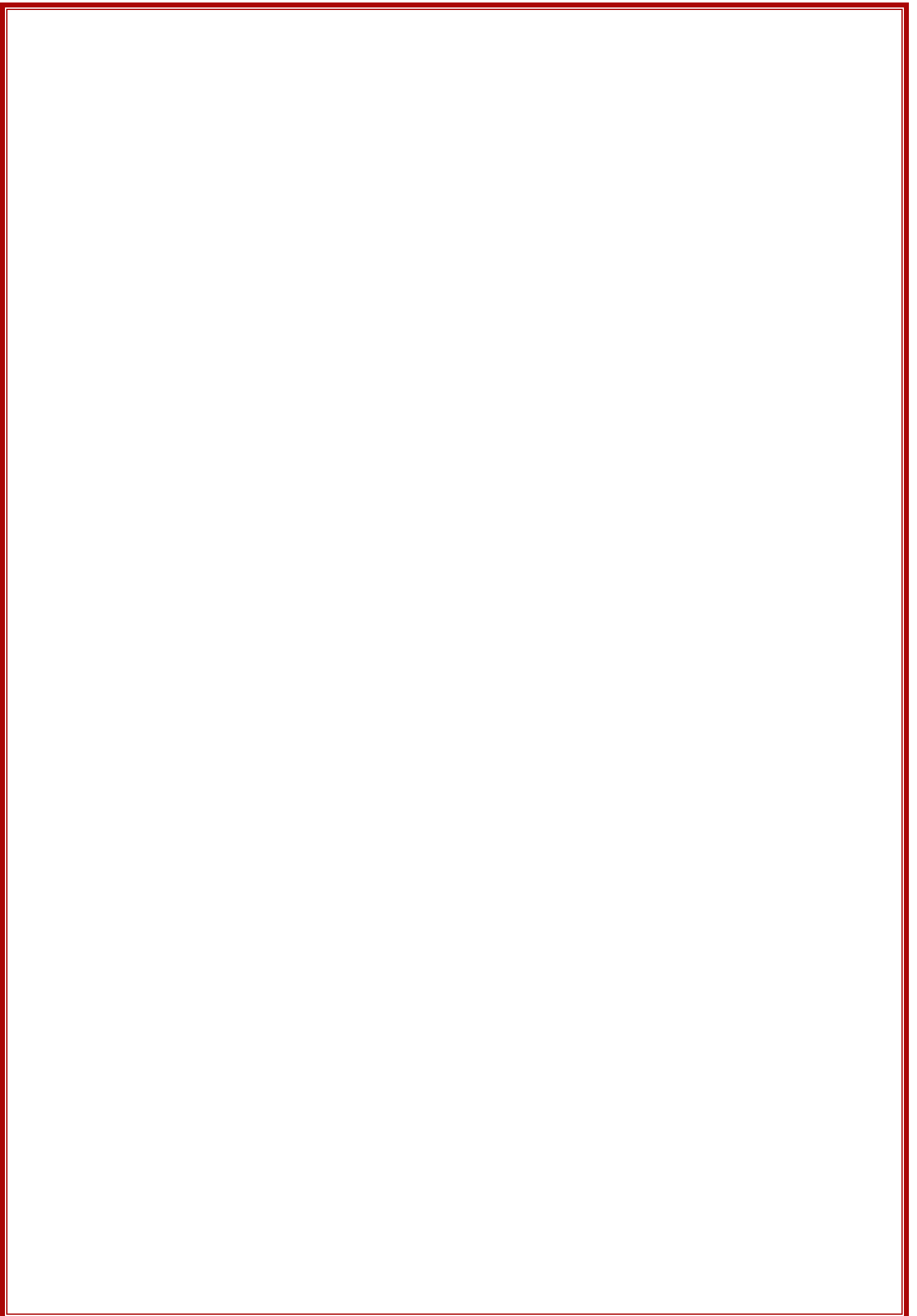
CDE'2017

11th Spanish Conference  
On Electron Devices

Facultat de Física  
Universitat de Barcelona

*Barcelona, Spain*  
*February 8-10, 2017*

[www.cde2017.es](http://www.cde2017.es)





# 11<sup>th</sup> Spanish Conference on Electron Devices

Barcelona, 8-10 February 2017



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Patrocinador platino



Colabora



Institut de Nanociència  
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Universitat de Barcelona







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## WELCOME LETTER

The Spanish Conference on Electron Devices (CDE) is the biannual meeting of the Spanish research groups and companies working in the field of electronic devices. In this 11th edition, which takes place from February 7th to 10th 2017, the conference returns to Barcelona, where this series started in 1997. The initial event was followed by the conferences in Madrid (1999), Granada (2001), Calella de la Costa-Girona (2003), Tarragona (2005), El Escorial-Madrid (2007), Santiago de Compostela (2009), Palma de Mallorca (2011), Valladolid (2013) and Aranjuez-Madrid (2015).

In this edition, the Conference program, which starts on February 8th, consists of 105 contributions. Out of them, 6 plenary/invited talks, 41 oral contributions and 58 poster presentations, which will be made visible throughout the duration of the conference to stimulate the discussion among the participants. Most of the contributions submitted and accepted at this conference come from Spanish Universities and Research Centres. In their majority, they are the result of cooperation between research teams from different institutions, including international universities. This proves the level of internationalisation of the Spanish Electron Device community.

The program is organized around five topic sessions, namely:

- S1 Graphene, new devices and device processing
- S2 Device modelling and simulation. New device concepts
- S3 Characterization and reliability
- S4 Sensors, actuators and micro/nano systems, including biomedical devices
- S4 Emerging devices
- S5 Optoelectronic, photovoltaic devices and displays. Hybrid and organic electronics

Special thanks are given to the organisations and companies that have given economical support to the organisation of this conference. Universitat de Barcelona, the Institute of Nanoscience and Nanotechnology of Universitat de Barcelona, Obra Social Fundación "La Caixa", the IEEE Spanish Section and the company Adler-Instrumentos are sincerely acknowledged for their economical support.

Finally, we want to warmly acknowledge the members of the different CDE Committees and all those researchers that, all together, collaborated in evaluating the submitted abstracts and helped in composing the final conference program. Without them, the conference's structure would be different. Our gratitude also goes to the chairs of the organising committees of previous editions, for their continuous support and for their help by providing practical information and direct help.

Barcelona, January 27 2016

The CDE 2017 Local Organising Committee





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## CONFERENCE SESSIONS

SESSION 1. GRAPHENE, NEW MATERIALS, AND  
DEVICE PROCESSING

SESSION 2. DEVICE MODELING AND SIMULATION.  
NEW DEVICE CONCEPTS

SESSION 3. CHARACTERIZATION AND RELIABILITY

SESSION 4. SENSOR, ACTUATORS & MICRO/NANO  
SYSTEMS. INCLUDING BIOMEICAL DEVICES

SESSION 5. OPTOELECTRONIC, PHOTOVOLTAIC  
DEVICES & DISPLAYS. HYBRID & ORGANIC  
ELECTRONICS



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## SESSIONS PROGRAM

WEDNESDAY FEBRUARY 8TH, 2017		
09:00 H – 11:30 H		REGISTRATION
09:00 H – 09:30 H		PRELIMINARY WELCOME - ALBERT ROMANO & ATILÀ HERMS
09:30 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
11:35 H – 12:00 H		COFFEE BREAK
12:00 H – 13:00 H	SESSION 2A	DEVICE MODELING AND SIMULATION. NEW DEVICE CONCEPTS
13:00 H – 14:00 H	SESSION 5A	OPTOELECTRONIC, PHOTOVOLTAIC DEVICES AND DISPLAYS. HYBRID AND ORGANIC ELECTRONICS
14:00 H – 15:15 H		LUNCH
15:15 H – 16:00 H	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 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.
17:00 H – 18:30 H		COFFEE BREAK AND POSTER DISCUSSION
19:30 H – 21:30 H	SOCIAL EVENT	WELCOME RECEPTION PARANINFO HISTORICAL BUILDING

THURSDAY FEBRUARY 9TH, 2017		
08:00 H – 09:00 H		REGISTRATION
08:45 H – 09:30 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
09:30 H – 11:30 H	SESSION 3A	CHARACTERIZATION AND RELIABILITY
11:30 H – 12:30 H		COFFEE BREAK AND POSTER DISCUSSION
12:30 H – 13:20 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
14:30 H – 15:45 H		LUNCH
15:45 H – 16:30 H	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.
17:30 H – 18:30 H	SESSION 5B	OPTOELECTRONIC, PHOTOVOLTAIC DEVICES AND DISPLAYS. HYBRID AND ORGANIC ELECTRONICS
19:00 H –	SOCIAL EVENT	VISIT TO CASA MILÀ (LA PEDRERA)
21:00 H	SOCIAL EVENT	GALA DINNER



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FRIDAY FEBRUARY 10TH, 2017		
08:45 H – 09:30 H	PLENARY TALK 5	DR. RICARDO GARCÍA: FRONTIERS IN NANOTECHNOLOGY: A FORCE MICROSCOPY PERSPECTIVE. INSTITUTO DE CIENCIA DE MATERIALES DE MADRID, CSIC. MADRID, SPAIN
09:30 H – 10:30 H	SESSION 5C	OPTOELECTRONIC, PHOTOVOLTAIC DEVICES AND DISPLAYS. HYBRID AND ORGANIC ELECTRONICS
10.30 H – 11:30 H	SESSION 4C	SENSORS, ACTUATORS AND MICRO/NANO SYSTEMS. INCLUDING BIOMEDICAL DEVICES.
11:30 H – 12:30 H		COFFEE BREAK AND POSTER DISCUSSION
12:40 H – 14:00 H	SESSION 3B	CHARACTERIZATION AND RELIABILITY
14:00 H – 15:30 H		LUNCH
15:30 h – 16:30 h	SESSION 2C	DEVICE MODELING AND SIMULATION. NEW DEVICE CONCEPTS
16:30 h – 17:00 h		AWARDS CEREMONY and CLOSING REMARKS



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## CDE 2017 – SESSIONS PROGRAM

Wednesday February 8th, 2017

09:00 H – 11:30 H	REGISTRATION
09:00 H – 09:30 H	PRELIMINARY WELCOME
09:30 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	<p>Impact of scattering mechanisms and dimensions scaling in Graphene Field-Effect transistors</p> <p>P. C. Feijoo<sup>1,*</sup>, F. Pasadas<sup>1</sup>, J. M. Iglesias<sup>2</sup>, M. J. Martín<sup>2</sup>, R. Rengel<sup>2</sup> and D. Jiménez<sup>1</sup></p> <p><sup>1</sup> Departament d'Enginyeria Electrònica, Escola d'Enginyeria, Universitat Autònoma de Barcelona, 08193 Bellaterra, Cerdanyola del Vallès, Spain. <sup>2</sup> Departamento de Física Aplicada, Universidad de Salamanca, Salamanca 37008, Spain</p>
R-0080	<p>Resistive switching behavior of graphene oxide films in symmetric metal-insulator-metal structures</p> <p>Masvidal-Codina, Eduard<sup>1</sup>; Muñoz, Jordi<sup>2</sup>; Pedreira, Gerard<sup>2</sup>; Rodríguez-Lamas, Raquel<sup>3</sup>; Sáez, Adrián<sup>2</sup>; Rius, Gemma<sup>*1</sup></p> <p><sup>1</sup> Instituto de Microelectrónica de Barcelona, IMB-CNM- CSIC, Campus UAB, 08193 Bellaterra, Spain <sup>2</sup> Universitat Autònoma de Barcelona, Campus UAB, 08193 Bellaterra, Spain <sup>3</sup> Université Grenoble Alpes, CNRS, LMGP, F-38000 Grenoble, France</p>
R-0082	<p>Making the most of transconductance: Optimization of graphene solution-gated field-effect transistors geometry for sensing applications.</p> <p>Masvidal-Codina, E.<sup>a,b</sup>; Illa, X.<sup>a,b</sup>; Villa, R.<sup>a,b</sup>; Garrido, J.A.<sup>c,d</sup>; Guimerà, A.<sup>a,b</sup></p> <p><sup>a</sup> Institut de Microelectrónica de Barcelona (IMB-CNM, CSIC), Bellaterra, Spain <sup>b</sup> Centro de Investigación Biomédica en Red, Bioingeniería, Biomateriales y Nanomedicina (CIBER-BBN), Spain <sup>c</sup> Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC and The Barcelona Institute of Science and Technology, Bellaterra, Spain <sup>d</sup> ICREA, Barcelona, Spain.</p>



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## CDE 2017 – SESSIONS PROGRAM

R-0086	<p>Transformation of graphene into graphene oxide by controlled electrical discharges for metal/insulator devices.</p> <p>A.L. Alvarez, F. Borrás, J. Moreno, C. Coya, R. Picos <sup>a</sup>, E. Climent <sup>b</sup>, C. Munuera <sup>b</sup>, A. de Andrés <sup>b</sup></p> <p>E. T. S. I de Telecomunicación, Universidad Rey Juan Carlos, Móstoles, 28933 Madrid, Spain <sup>a</sup> Electronic Engineering Group, Physics Dept., Universitat de les Illes Balears, Spain <sup>b</sup> Instituto de Ciencia de Materiales de Madrid (CSIC), Cantoblanco, 28049 Madrid, Spain</p>
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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	<p>2D Simulation Evaluation of PE-TFET device.</p> <p><sup>1</sup>Daniel Nagy, <sup>1</sup>Antonio J. García-Loureiro, <sup>2</sup>Karol Kalna and <sup>1</sup>Natalia Seoane</p> <p><sup>1</sup>Centro Singular de Investigación en Tecnoloxías da Información, University of Santiago de Compostela, 15782 Santiago de Compostela, Spain <sup>2</sup>Electronic System Design Centre, College of Engineering, Swansea University</p>
R-0038	<p>High channel mobility in 4H-SiC N-MOSFET using N<sub>2</sub>O oxidation combined with Boron diffusion treatment</p> <p>M. Cabello, V. Soler, J. Montserrat, J. Rebollo, P. Godignon and J. Millan</p> <p>IMB-CNM CSIC, Campus UAB, 08193 Bellaterra, Spain</p>
R-0048	<p>DC characteristics with substrate temperature for GaN on Si MOS-HEMTs.</p> <p>Raúl Rodríguez del Rosario, Benito González Pérez, Javier García García, Aurelio Vega Martínez, Antonio Núñez Ordóñez</p> <p>Institute for Applied Microelectronics (IUMA), ULPGC, Las Palmas de G.C., Spain</p>





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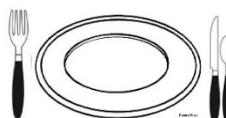
## CDE 2017 – SESSIONS PROGRAM

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

R-0059	<p>Combination of sub-second annealing techniques to reduce lateral segregation of Ti in Si supersaturated material</p> <p>E. García-Hemme<sup>1,2</sup>, M. Wang<sup>2</sup>, S. Prucnal<sup>2</sup>, R. García-Hernansanz<sup>1</sup>, D. Montero<sup>1</sup>, J. Olea<sup>1</sup>, G. González-Díaz<sup>1</sup>, S. Zhou<sup>2</sup> and W. Skorupa<sup>2</sup></p> <p><sup>1</sup> Dpto. Física Aplicada III, Facultad de Ciencias Físicas. Universidad Complutense de Madrid. 28040 Madrid. Spain. <sup>2</sup> Helmholtz Zentrum Dresden-Rossendorf, Institute of Ion Beam Physics and Materials research, Bautzner Landstr. 400, 01328 Dresden, Germany</p>
R-0061	<p>MOVPE issues in the development of ordered GaInP metamorphic buffers for multijunction solar cells</p> <p>Manuel Hinojosa Arner, Iván García Vara, Carlos Algora del Valle</p> <p>Instituto de Energía Solar, Universidad Politécnica de Madrid, Avda. Complutense 30, 28040 Madrid, Spain</p>
R-0095	<p>Understanding the limiting factors of solvent annealed Small molecule-bulkheterojunction organic solar cells from an experimental perspective</p> <p>Daniel Fernandez,<sup>a</sup> Aurelien Viterisi,<sup>b</sup> Vijay Challuri,<sup>a</sup> James W. Ryan,<sup>c</sup> Eugenia Martinez-Ferrero,<sup>d</sup> Francesc Gispert-Guirado,<sup>a</sup> Marta Martinez,<sup>a</sup> Eduardo Escudero,<sup>a</sup> Caterina Stenta,<sup>b</sup> Lluís Marsal,<sup>b</sup> Emilio Palomares.<sup>a</sup></p> <p>a Institute of Chemical Research of Catalonia (ICIQ), Tarragona, Spain. b Universitat Rovira i Virgili, Tarragona, Spain. c National Institute for Materials Science (NIMS), Tsukuba, Japan. d Eurecat Technological Centre, Mataró (Barcelona), Spain</p>

14:30 H – 15:45 H

LUNCH



15:15 H – 16:00 H    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 DIVISION, KING ABDULLAH UNIVERSITY OF SCIENCE & TECHNOLOGY (KAUST)



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## CDE 2017 – SESSIONS PROGRAM

16:00 H – 17:00 H    SESSION 4A    SENSORS, ACTUATORS AND MICRO/NANO SYSTEMS.  
INCLUDING BIOMEDICAL DEVICES.

R-0021	<p>Resistive gas sensors employing late transition metal doped n-type metal oxide nanomaterials.</p> <p>Eduard Llobet , Toni Vilic , Eric Navarrete , Sergio Roso</p> <p>MINOS-EMaS, Enginyeria Electrònica, Universitat Rovira i Virgili, Avda. Països Catalans, 26, 43007, Tarragona.</p>
R-0032	<p>From materials to devices: bottom-up integration of nanomaterials onto silicon microstructures for thermoelectric and piezoelectric applications.</p> <p>Luis Fonseca, Carlos Calaza, Marc Salleras, Inci Donmez, Gonzalo Murillo, Jaume Esteve Albert Tarancón<sup>1</sup>, Alex Morata<sup>1</sup>, Jose D. Santos<sup>1</sup>, Gerard Gadea<sup>1</sup></p> <p>IMB-CNM (CSIC) Carrer dels Til·lers s/n, Campus UAB, 08193 Bellaterra, Spain. <sup>1</sup> Institut de Recerca en Energia de Catalunya (IREC), Jardins de les Dones de Negre 1, 08930 Sant Adrià de Besòs, Barcelona, Spain.</p>
R-0037	<p>Coupling Defects in Macroporous Silicon Photonic Crystals.</p> <p>David Cardador Maza, Didac Vega Bru, Daniel Segura Garcia, Angel Rodriguez Martinez</p> <p>Micro I Nanotecnologies, department d'Enginyeria Electrònica, Universitat politècnica de Catalunya, C/Jordi Girona, 31, 08031, Barcelona, Spain.</p>

17:00 H – 18:30 H

COFFEE BREAK AND POSTER  
DISCUSSION





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## CDE 2017 – SESSIONS PROGRAM

19:30 H – 21:30 H SOCIAL EVENT WELCOME RECEPTION PARANINFO HISTORICAL BUILDING



Departure Time	Duration
9:52-10:22	30 min
9:59 desde Diagonal-Av Joan XXIII	10 min tarde
9:50-10:23	33 min
9:50-10:20	30 min
9:55-10:33	37 min



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## CDE 2017 – SESSIONS PROGRAM

Thursday February 10th, 2017

08:00 H – 09:00 H

REGISTRATION

08:45 H – 09:30 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

09:30 H – 11:30 H

SESSION 3A

CHARACTERIZATION AND RELIABILITY

R-0007	<p>Conduction mechanisms in HIT solar cells.</p> <p>R. García-Hernansanz<sup>*,1</sup>, E. García-Hemme<sup>1</sup>, D. Montero<sup>1</sup>, A. del Prado<sup>1</sup>, I. Mártel<sup>1</sup>, C. Voz<sup>2</sup>, L.G. Gerling<sup>2</sup>, J. Puigdollers<sup>2</sup>, R. Alcubilla<sup>2</sup></p> <p><sup>1</sup> Dpto. Física Aplicada III, Facultad de Ciencias Físicas. Universidad Complutense de Madrid. 28040 Madrid (Spain) <sup>2</sup> Departament d'Enginyeria Electronica. Universitat Politècnica de Catalunya. 08034 Barcelona (Spain)</p>
R-0011	<p>A Physically Based Model to describe Resistive Switching in different RRAM technologies.</p> <p>G. González-Cordero<sup>1</sup>, M.B. González<sup>2</sup>, H. García<sup>3</sup>, F. Campabadal<sup>2</sup>, S. Dueñas<sup>3</sup>, H. Castán<sup>3</sup>, F. Jiménez-Molinos<sup>1</sup>, J.B. Roldán<sup>1</sup></p> <p><sup>1</sup> Departamento de Electrónica y Tecnología de Computadores, Universidad de Granada (Spain), <sup>2</sup> Institut de Microelectrònica de Barcelona, IMB-CNM (CSIC), Campus UAB, 08193 Bellaterra, (Spain) <sup>3</sup> Departamento de Electrónica, Universidad de Valladolid, Paseo de Belén 15, 47011 Valladolid, (Spain)</p>
R-0018	<p>Resistive switching phenomena on Ta<sub>2</sub>O<sub>5</sub>-TiO<sub>2</sub> based MIM structures.</p> <p>Salvador Dueñas<sup>1</sup>, Helena Castán<sup>1</sup>, Héctor García<sup>1</sup>, Tónis Arroval<sup>2</sup>, Aile Tamm<sup>2</sup>, Taivo Jõgiaas<sup>2</sup>, Kaupo Kukli<sup>2,3</sup>, and Jaan Aarik<sup>2</sup></p> <p><sup>1</sup> Department of Electronics, University of Valladolid. Paseo Belén, 15. 47011 Valladolid, Spain <sup>2</sup> Institute of Physics, University of Tartu, Ravila 14c, 50411 Tartu, Estonia. <sup>3</sup> Department of Chemistry, University of Helsinki, P. O. Box 55, FI-00014 Helsinki, Finland.</p>
Break of some minutes.	





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## CDE 2017 – SESSIONS PROGRAM

R-0019	<p>Resistive Switching with Bipolar Characteristics in TiN/Ti/HfO<sub>2</sub>/W Devices.</p> <p>Samuel Poblador Cester, María Cruz Acero Leal, Mireira Bargalló González, Francesca Campabadal Segura</p> <p>Institut de Microelectrónica de Barcelona, IMB-CNM (CSIC), Campus UAB, 08193 Bellaterra, Spain.</p>
R-0023	<p>Analytical transfer equations for the spectral modelling of III-V multi-junction concentrator solar cells</p> <p>Eduardo F. Fernández<sup>1</sup>, Marios Theristis<sup>2*</sup>, Antonio Garcia-Loureiro<sup>3</sup>, Alberto Soria-Moya<sup>1</sup>, Florencia Almonacid<sup>1</sup>, George E. Georghiou<sup>2</sup> and Pedro Pérez-Higueras<sup>1</sup></p> <p><sup>1</sup> Centro de Estudios Avanzados en Energía y Medio Ambiente (CEAEMA), University of Jaen, Las Lagunillas Campus, Jaen, 23071, Spain <sup>2</sup> PV Technology Laboratory, FOSS Research Centre for Sustainable Energy, Department of Electrical and Computer Engineering, University of Cyprus, Nicosia, 1678, Cyprus <sup>3</sup> Centro de Investigación en Tecnologías de la Información (CITIUS), University of Santiago de Compostela, Santiago de Compostela E15782, Spain</p>
R-0029	<p>Control of the Bipolar Resistive Switching Conductivity for Neuromorphic Computing Applications.</p> <p>M. Pedro<sup>1</sup>, J. Martin-Martinez<sup>1</sup>, M. B. Gonzalez<sup>2</sup>, R. Rodriguez<sup>1</sup>, F. Campabadal<sup>2</sup>, M. Nafria<sup>1</sup> and X. Aymerich<sup>1</sup></p> <p><sup>1</sup> Electronic Engineering Dept., Universitat Autònoma de Barcelona, Edifici Q, 08193 Bellaterra, Spain <sup>2</sup> Institut de Microelectrónica de Barcelona, IMB-CNM (CSIC), Campus UAB, 08193 Bellaterra, Spain</p>

11.30 H – 12:30 H

COFFEE BREAK AND POSTER  
DISCUSSION



12:30 H – 13:20 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





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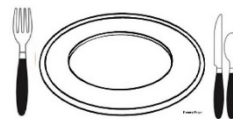
## CDE 2017 – SESSIONS PROGRAM

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

R-0036	<p>Microwave detection up to 43.5 GHz by GaN nano-diodes: Experimental and analytical responsivity.</p> <p>H. Sánchez-Martín<sup>1</sup>, S. Sánchez-Martín<sup>1</sup>, O. García-Pérez<sup>1</sup>, S. Pérez<sup>1</sup>, J. Mateos<sup>1</sup>, T. González<sup>1</sup>, C. Gaquière<sup>2</sup> and I. Íñiguez-de-la-Torre<sup>1</sup></p> <p><sup>1</sup> Departamento de Física Aplicada, Universidad de Salamanca, Plaza de la Merced s/n, 37008 Salamanca, Spain</p> <p><sup>2</sup> Institut d'Electronique, Microelectronique et de Nanotechnologies (IEMN), Villeneuve D'Ascq, France</p>
R-0052	<p>Influence of Process-Voltage-Temperature variations on the behavior of a hybrid circuit FET-SET.</p> <p>Esteve Amat, Joan Bausells, Francesc Perez Murano</p> <p>IMB-CNM, CSIC, Barcelona, 08193, Spain</p>
R-0066	<p>Power Transfer Efficiency of Silicon Nanostructured Thermoelectric Generators</p> <p>Paula López Martínez, Gabriel Capeáns García, Andrea Hernández Rodríguez, Diego Cabello Ferrer</p> <p>Centro Singular de Investigación en Tecnoloxías da Información (CITIUS) Universidade de Santiago de Compostela, Spain</p>

14:30 H – 15:45 H

LUNCH



15:45 H – 16:30 H

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



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## CDE 2017 – SESSIONS PROGRAM

16:30 H – 17:30 H    SESSION 4B    SENSORS, ACTUATORS AND MICRO/NANO SYSTEMS.  
INCLUDING BIOMEDICAL DEVICES.

R-0042	<p>Active surface potential control in nanostructured MOX layers.</p> <p>M. Domínguez-Pumar<sup>1</sup>, L. Kowalski<sup>1</sup>, R. Calavia<sup>2</sup>, E. Llobet<sup>2</sup></p> <p><sup>1</sup>Micro and Nano Technologies Group, Electronic Engineering Department, Universitat Politècnica de Catalunya, Barcelona, Spain <sup>2</sup>Electronic Engineering Department, Universitat Rovira i Virgili, Tarragona, Spain</p>
R-0047	<p>Multisensor platform for indoor air quality.</p> <p>J. González-Chávarri<sup>1</sup>, E. Hammes<sup>2</sup>, L. Parellada<sup>1</sup>, I. Castro-Hurtado<sup>1</sup>, E. Castaño<sup>1</sup>, I. Ayerdi<sup>1</sup>, H. Knapp<sup>2</sup>, G.G. Mandayo<sup>1</sup></p> <p><sup>1</sup>Ceit-IK4 and Tecnun (Universidad de Navarra), P. Manuel Lardizabal 15, 20018, San Sebastián, Spain <sup>2</sup>CSEM, Center Central Switzerland, Untere Gründlistrasse 1, CH-6055 Alpnach, Switzerland</p>
R-0020	<p>Conditioning Lab on PCB to Control Temperature and Mix Fluids at the Microscale for Biomedical Applications.</p> <p>Miguel Cabello Valverde, Carmen Aracil Fernández, Francisco Perdigones Sánchez, José Manuel Quero Reboul</p> <p>Universidad de Sevilla, C/ S. Fernando, 4, C.P. 41004-Sevilla, España.</p>

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

R-0040	<p>Monocrystalline Si quasi-spheres obtained by high-temperature reorganization in solid phase</p> <p>Moisés Garín Escrivá, María Magdalena Sola García, Ramón Alcubilla Gonzalez</p> <p>Departament d'Enginyeria Electrònica, Universitat Politècnica de Catalunya, c/ Jordi Girona 1-3, Barcelona, 08034, Spain.</p>
R-0043	<p>Hydrogenated amorphous SiTi for photovoltaic applications</p> <p>Javier Olea Ariza, Eric García Hemme, Rodrigo García Hernansanz, Daniel Montero Álvarez, Enrique San Andrés Serrano, Ignacio Mártel de la Plaza</p> <p>Depto. Física Aplicada III, Facultad de Ciencias Físicas. Universidad Complutense de Madrid. 28040 Madrid. Spain.</p>





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R-0045	<p>Effects of Pd-doped TiOx on High Efficiency Organic Solar Cells Performance</p> <p>J. G. Sánchez<sup>1</sup>, V. S. Balderrama<sup>2</sup>, C. Stenta<sup>1</sup>, M. Estrada<sup>2</sup>, J. Ferré-Borrull<sup>1</sup>, L. F. Marsal<sup>1*</sup> and J. Pallarès<sup>1*</sup></p> <p><sup>1</sup> Departament d'Enginyeria Electrònica Elèctrica i Automàtica Universitat Rovira i Virgili Av. Països Catalans 26, 43007 Tarragona, Spain</p> <p><sup>2</sup> Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional (CINVESTAV-I.P.N) Av. Instituto Politécnico Nacional 2508, 07360 Ciudad de México, México.</p>
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19:00 H – SOCIAL EVENT VISIT TO CASA MILÀ (LA PEDRERA)  
First group of people at 19:00h / Second group of people at 19:30h





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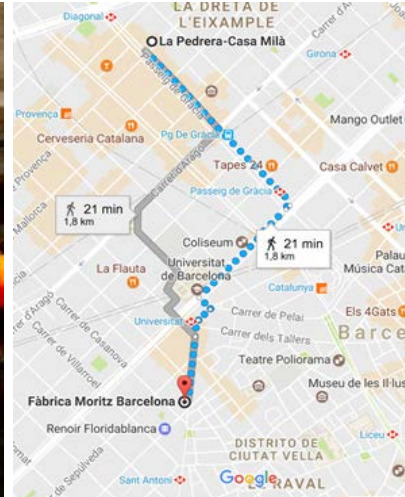


## CDE 2017 – SESSIONS PROGRAM

21:00 H

SOCIAL EVENT

GALA DINNER





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## CDE 2017 – SESSIONS PROGRAM

Friday February 10th, 2017

08:45 H – 09:30 H    PLENARY TALK 5    DR. RICARDO GARCÍA:  
FRONTIERS IN NANOTECHNOLOGY: A FORCE MICROSCOPY  
PERSPECTIVE.  
INSTITUTO DE CIENCIA DE MATERIALES DE MADRID, CSIC. MADRID,  
SPAIN

09:30 H – 10:30 H    SESSION 5C    OPTOELECTRONIC, PHOTOVOLTAIC DEVICES AND DISPLAYS.  
HYBRID AND ORGANIC ELECTRONICS

R-0004	<p>Dopant-Free Carrier Selective Contacts: A Paradigm-Shift in Crystalline Silicon Photovoltaic Technology</p> <p>Luis Guillermo Gerling , Gerard Masmitja , Pablo Ortega , Isidro Martin , Cristóbal Voz, Joaquim Puigdollers , Ramón Alcobilla</p> <p>Micro and Nanotechnologies Group. Departament d'Enginyeria Electrònica, Universitat Politècnica de Catalunya. Jordi Girona 1-3, Mòdul C4, 08034 Barcelona, Spain.</p>
R-0013	<p>Multijunction solar cells incorporating Group IV SiGeSn alloys</p> <p>Pablo Caño<sup>1</sup>, Andrew Johnson<sup>2</sup>, Ignacio Rey-Stolle<sup>1</sup></p> <p><sup>1</sup> Instituto de Energía Solar – UPM, ETSI de Telecomunicación, Avda. Complutense 30, 28040 Madrid (Spain) <sup>2</sup> IQE PLC, Pascal Close, St. Mellons, Cardiff, CF3 0LW, U.K.</p>
R-0027	<p>Supersaturated Silicon based devices for Focal Plane Array detectors for the near and mid IR range at room temperature</p> <p>Daniel Montero Álvarez<sup>*</sup>, Rodrigo García Hernansanz, Eric García Hemme, Javier Olea Ariza, Enrique San Andrés Serrano, Álvaro Del Prado Millán, Germán González Díaz</p> <p>Dept. Física Aplicada III, Facultad de Ciencias Físicas. Universidad Complutense de Madrid. 28040 Madrid. Spain</p>



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## CDE 2017 – SESSIONS PROGRAM

10.30 H – 11:30 H    SESSION 4C    SENSORS, ACTUATORS AND MICRO/NANO SYSTEMS.  
INCLUDING BIOMEDICAL DEVICES.

R-0063	<p>Measuring low H field and currents with AMR sensors</p> <p>Miriam Naranjo-Esparcia<sup>(1)</sup>, Cándid Reig<sup>(2)</sup>, Jan Kubik<sup>(1)</sup>, Pedro Tomás-Molina<sup>(1)</sup>, Javier Calpe<sup>(1)</sup></p> <p><sup>(1)</sup> Analog Devices, Inc., <sup>(2)</sup> ETSE, Universitat de Valencia</p>
R-0084	<p>Technological solutions for large area microstrip radiation silicon sensors for the LHC upgrade</p> <p>J. Fernández-Tejero<sup>*</sup>, M. Ullán<sup>*</sup>, C. Fleta<sup>*</sup>, D. Quirion<sup>*</sup></p> <p><sup>*</sup> Institut de Microelectrònica de Barcelona (IMB-CNM, CSIC), Campus UAB-Bellaterra, 08193 Barcelona, Spain</p>
R-0090	<p>Single metal oxide nanowires for gas sensing</p> <p>Guillem Domènech-Gil<sup>a</sup>, Elena Lopez-Aymerich<sup>a</sup>, Irmina Peiró Riera<sup>a</sup>, Jordi Samà<sup>a</sup>, Paolo Pellegrino<sup>a</sup>, Isabel Gràcia<sup>b</sup>, Carles Cané<sup>b</sup>, Sven Barth<sup>c</sup>, Albert Romano-Rodríguez<sup>a</sup></p> <p><sup>a</sup> Universitat de Barcelona, Dept. of Engineering and Institut of Nanoscience and Nanotechnology (IN2UB), Martí i Franquès 1, 08028 Barcelona, Spain <sup>b</sup> Consejo Superior de Investigaciones Científicas (CSIC), Centro Nacional de Microelectrónica, Institut de Microelectrònica de Barcelona, 08193 Bellaterra, Spain <sup>c</sup> Vienna University of Technology, Institute of Materials Chemistry, 1060 Vienna, Austria</p>

11.30 H – 12:30 H

COFFEE BREAK AND POSTER  
DISCUSSION



12:40 H – 14:00 H

SESSION 3B

CHARACTERIZATION AND RELIABILITY

R-0033	<p>Atomic Layer Deposition and Characterization of Erbium-Iron-Oxide Thin Films.</p> <p>Aile Tamm<sup>1</sup>, Kristjan Kalam<sup>1</sup>, Helina Seemen<sup>1</sup>, Peeter Ritslaid<sup>1</sup>, Kaupo Kukli<sup>1,2</sup>, Jaan Aarik<sup>1</sup>, Mikko Heikkilä<sup>2</sup>, Joosep Link<sup>3</sup>, Raivo Stern<sup>3</sup>, Salvador Dueñas<sup>4</sup>, Helena Castán<sup>4</sup>, Héctor García<sup>4</sup></p> <p><sup>1</sup> Institute of Physics, University of Tartu, W.Ostwaldi 1, 50411 Tartu, Estonia. <sup>2</sup> Department of Chemistry, University of Helsinki, P. O. Box 55, FI-00014 Helsinki, Finland. <sup>3</sup> National Institute of Chemical Physics and Biophysics, Akadeemia tee 23, EE-12618 Tallinn, Estonia <sup>4</sup> Department of Electronics, University of Valladolid, 47011 Valladolid, Spain.</p>
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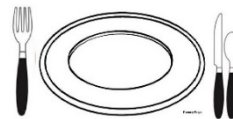


## CDE 2017 – SESSIONS PROGRAM

R-0035	<p>Geometry and bias dependence of trapping effects in planar GaN nanodiodes</p> <p>H. Sánchez-Martín<sup>1</sup>, O. García-Pérez<sup>1</sup>, I. Iñiguez-de-la-Torre<sup>1</sup>, S. Pérez<sup>1</sup>, J. Mateos<sup>1</sup>, C. Gaquière<sup>2</sup> and T. González<sup>1</sup></p> <p><sup>1</sup> Departamento de Física Aplicada, Universidad de Salamanca, Plaza de la Merced s/n, 37008 Salamanca, Spain <sup>2</sup> Institut d'Électronique, Microélectronique et de Nanotechnologies (IEMN), Villeneuve D'Ascq, France</p>
R-0054	<p>In situ TEM assessment of nanoresistive switching in Ni-HfO<sub>2</sub>-Si capacitors: the conducting filament mechanism</p> <p>Gemma Martín<sup>1</sup>, Mireia B. González<sup>2</sup>, Francesca Campabadal<sup>2</sup>, Sònia Estradé<sup>1</sup>, Francesca Peiró<sup>1</sup> and Albert Cornet<sup>1</sup></p> <p><sup>1</sup> MIND/IN2UB, Departament d'Enginyeries: Electrònica, Universitat de Barcelona, Martí i Franqués 1, 08028 Barcelona, Spain <sup>2</sup> Institut de Microelectrònica de Barcelona, IMB-CNM (CSIC), Campus UAB, 08193 Bellaterra, Spain</p>
R-0085	<p>Effects of HfO<sub>2</sub> Gate dielectric and KOH-based pre-treatments on AlGaIn/GaN Metal-Oxide-Semiconductor High Electron Mobility Transistors</p> <p>Zhan Gao<sup>*</sup>, M<sup>a</sup> Fátima Romero Rojo, Fernando Calle Gómez</p> <p>Dep. Ingeniería Electrónica and Instituto de Sistemas Optoelectrónicos y Microtecnología ETSI Telecomunicación, Universidad Politécnica de Madrid, Av. Complutense 30, 28040 Madrid, Spain</p>

14:00 H – 15:30 H

LUNCH



15:30 H – 16:30 H

SESSION 2C

DEVICE MODELING AND SIMULATION. NEW DEVICE CONCEPTS

R-0062	<p>RF noise model for AlGaIn/GaN HEMT</p> <p><sup>1</sup>Wondwosen E. Muhea, <sup>2</sup>Fetene M. Yigletu, <sup>1</sup>Antonio Lazaro, and <sup>1</sup>Benjamín Iñiguez*, <i>Senior Member, IEEE</i></p> <p><sup>1</sup> Department of Electronics, Electrical, and Automation Engineering, Universitat Rovira I Virgili, Av. Paisos Catalans, 26, 43007, Tarragona, Spain. <sup>2</sup> Department of Electrical and Computer Engineering, University of California Davis, 1 Shields Ave, Davis, CA 95616, USA.</p>
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R-0073	<p>Monte Carlo analysis of III-V PIN diodes for Tunnel-FETs and Impact Ionization-MOSFETs</p> <p>B. G. Vasallo<sup>1</sup>, V. Talbo<sup>1</sup>, T. González<sup>1</sup>, Y. Lechaux<sup>2</sup>, N. Wichmann<sup>2</sup>, S. Bollaert<sup>2</sup>, and J. Mateos<sup>1</sup></p> <p><sup>1</sup> Applied Physics Department, University of Salamanca, Plaza de la Merced s/n, 37008 Salamanca, Spain <sup>2</sup> Institute of Electronics, Microelectronics and Nanotechnology, 59652 Villeneuve d'Ascq, France</p>
R-0097	<p>Analysis of bidirectional switch solutions based on different power devices</p> <p>M. Fernández<sup>1</sup>, X. Perpiñà<sup>1</sup>, M. Vellvehi<sup>1</sup>, D. Sánchez<sup>1</sup>, T. Cabeza<sup>2</sup>, S. Llorente<sup>2</sup>, X. Jordà<sup>1</sup>, †J. Millán<sup>1</sup></p> <p><sup>1</sup> IMB-CNM (CSIC) 08193 Cerdanyola (Barcelona), Spain <sup>2</sup> BSH Electrodomésticos España S.A, 50016 Montañana (Zaragoza), Spain</p>

16:30 H – 17:00 H

AWARDS CEREMONY AND CLOSING REMARKS



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## LIST OF POSTERS BY SESSIONS

### SESSION 1. GRAPHENE, NEW MATERIALS, AND DEVICE PROCESSING

R-0060	<p>Flexible Inkjet-Printed Hybrid Circuit: Surface Mount Devices Assembled by Silver Nanoparticles-Based Ink.</p> <p>J Arrese, E Xuriguera, G Vescio, Beatriz Medina-Rodriguez, A. Cornet, and A. Cirera</p> <p>MIND-IN2UB, Engineering Department: Electronics, Universitat de Barcelona, Martí i Franquès 1, Barcelona 08028</p>
R-0067	<p>A small-signal equivalent circuit of RF graphene field-effect transistors that guarantees charge conservation</p> <p>Francisco Pasadas Cantos, David Jiménez Jiménez</p> <p>Departament d'Enginyeria Electrònica, Escola d'Enginyeria, Universitat Autònoma de Barcelona, Campus UAB 08193 Bellaterra, Spain</p>
R-0088	<p>Contact resistance in metal/graphene junctions from first principles.</p> <p>Xavier Cartoixà<sup>1</sup>, K L N Acharya<sup>2</sup>, F. Jovell<sup>1</sup>, Juan José Palacios<sup>2</sup></p> <p><sup>1</sup> Departament d'Enginyeria Electrònica, Universitat Autònoma de Barcelona, Bellaterra, Spain <sup>2</sup> Departamento de Física de la Materia Condensada, Universidad Autónoma de Madrid, Cantoblanco, Spain</p>
R-0091	<p>Effect of the intercalation of graphite in a metal/graphene contact.</p> <p>Ferran Jovell, Xavier Cartoixà</p> <p>Departament d'Enginyeria Electrònica, Universitat Autònoma de Barcelona, Bellaterra, Spain</p>



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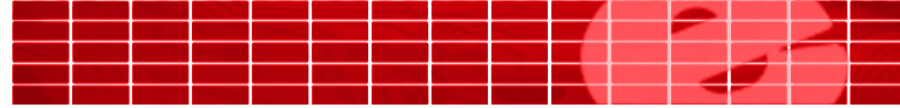
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## CDE 2017 – LIST OF POSTERS BY SESSIONS

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CDE 2017 – LIST OF POSTERS BY SESSIONS

SESSION 2. DEVICE MODELING AND SIMULATION.  
NEW DEVICE CONCEPTS

R-0005	<p><b>SPIICE Simulation of HfO<sub>2</sub>-Based 1T1R Structures Using the Logistic Hysteron</b></p> <p>G.A. Patterson<sup>1</sup>, C. Cagli<sup>2</sup>, A. Rodriguez-Fernandez<sup>1</sup>, L. Perniola<sup>2</sup>, J. Suñé<sup>1</sup>, E. Miranda<sup>1</sup></p> <p><sup>1</sup> Departament d'Enginyeria Electrònica, Universitat Autònoma de Barcelona, 08193, Cerdanyola del Valles, Spain <sup>2</sup> CEA, LETI, MINATEC Campus, Grenoble, France</p>
R-0015	<p><b>Improving a nozzle tip with a guard ring for an electrospray system</b></p> <p>Bremnen Véliz<sup>1,2</sup>, Sandra Bermejo<sup>1</sup> and Luis Castañer<sup>1</sup></p> <p><sup>1</sup> Polytechnic University of Catalonia, Dept. of Electronic Engineering, MNT Group, Jordi Girona 1-3, Barcelona, Spain.. <sup>2</sup> Salesian Polytechnic University, GISCOR Group, Guayaquil, Ecuador.</p>
R-0016	<p><b>Sensing properties of ZnO Nanostructured Layers.</b></p> <p>Lluís M. Guia<sup>1</sup>, Pedro J. Rodríguez-Cantó<sup>2</sup>, Vicente Muñoz-Sanjosé<sup>1</sup>, Sergio Arana<sup>3</sup>, Cándid Reig<sup>4</sup></p> <p><sup>1</sup> Departamento de Física Aplicada, Universitat de València <sup>2</sup> INTENANOMAT S.L. <sup>3</sup> CEIT <sup>4</sup> Departamento de Ingeniería Electrónica, Universitat de València</p>
R-0022	<p><b>GWM: An intelligent task manager applied to semiconductor statistical studies</b></p> <p>G. Indalecio, F. Gomez-Folgar, N. Seoane and A.J. García-Loureiro</p> <p>CITIUS, University of Santiago de Compostela 15782 Santiago de Compostela, Spain</p>
R-0048	<p><b>DC characteristics with substrate temperature for GaN on Si MOS-HEMTs</b></p> <p>R. Rodríguez, B. González, J. García, A. Vega, and A. Núñez</p> <p>Institute for Applied Microelectronics (IUMA), ULPGC, Las Palmas de G.C., Spain</p>
R-0051	<p><b>Electrical characteristics improvement of P3HT:PCBM solar cells by addition of PbS quantum dots stabilized with thiophenol/decanethiol mixed ligands</b></p> <p>J.C. Ferrer, F. Rodríguez-Mas, J.L. Alonso, S. Fernández de Ávila</p> <p>Área de Electrónica, Universidad Miguel Hernández, Av. Universidad, s/n, Ed. Innova, 03202 Elche, Spain</p>



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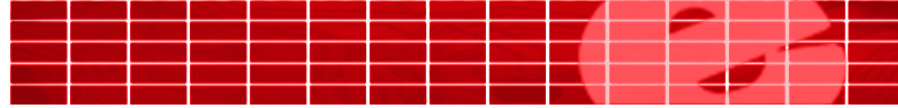
## CDE 2017 – LIST OF POSTERS BY SESSIONS

R-0053	<p>Evaluation of energy barriers for topological transitions of Si self-interstitial clusters by classical molecular dynamics and the kinetic activation-relaxation technique</p> <p>Pedro López<sup>1</sup>, D. Calvo<sup>2</sup>, I. Santos<sup>1</sup>, M. Aboy<sup>1</sup>, L. A. Marqués<sup>1</sup>, M. Trochet<sup>3</sup>, N. Mousseau<sup>3</sup> and L. Pelaz<sup>1</sup></p> <p><sup>1</sup> Departamento de Electricidad y Electrónica, Universidad de Valladolid, ETSI Telecomunicación, Paseo de Belén 15, 47011 Valladolid, Spain <sup>2</sup> Dept. of Information Technology and Electrical Engineering, ETH Zürich, Gloriastrasse 35, 8092 Zürich, Switzerland. <sup>3</sup> Département de physique and Regroupement québécois sur les matériaux de pointe, Université de Montréal, C.P. 6128, succ. Centre-ville, Montréal (Québec) H3C 3J7, Canada</p>
R-0056	<p>Numerical study of p-type InSb and GaSb nanowires</p> <p>C. Martínez-Blanco<sup>1</sup>, A. Toral<sup>1</sup>, J. M. González-Medina<sup>1</sup>, E.G. Marín<sup>2</sup>, F. G. Ruiz<sup>1</sup>, A. Godoy<sup>1</sup> and F. Gámiz<sup>1</sup></p> <p><sup>1</sup> Dpto. de Electrónica; Facultad de Ciencias, Campus Fuentenueva s/n: Granada 18071, Spain <sup>2</sup> Dipartimento di Ingegneria dell'Informazione, Università di Pisa, Via G. Caruso 16, 56122 Pisa, Italy</p>
R-0062	<p>RF noise model for AlGaIn/GaN HEMT</p> <p>Wondwosen E. Muhea<sup>1</sup>, Fetene M. Yigletu<sup>2</sup>, Antonio Lazaro<sup>1</sup>, and Benjamín Iniguez<sup>1</sup>, Senior Member, IEEE</p> <p><sup>1</sup> Department of Electronics, Electrical, and Automation Engineering, Universitat Rovira i Virgili, Av. Paisos Catalans, 26, 43007, Tarragona, Spain. <sup>2</sup> Department of Electrical and Computer Engineering, University of California Davis, 1 Shields Ave, Davis, CA 95616, USA.</p>
R-0065	<p>Impact of Self-heating and Hot Phonons on the Drift Velocity in Graphene</p> <p>José M. Iglesias, María J. Martín, Elena Pascual, Raúl Rengel</p> <p>Departamento de Física Aplicada, Universidad de Salamanca. Plaza de La Merced s/n. 37008, Salamanca, Spain</p>
R-0068	<p>SPICE modeling of RRAM thermal reset transitions for circuit simulation purposes.</p> <p>F. Jiménez-Molinos, G. González-Cordero, P. Cartujo, J.B. Roldán</p> <p>Departamento de Electrónica y Tecnología de Computadores, Universidad de Granada (Spain)</p>
R-0069	<p>Band gaps modelling of dilute bismide (GaBi<sub>x</sub>As<sub>1-x</sub>) and dilute nitride (GaN<sub>x</sub>As<sub>1-x</sub>)</p> <p>Umair Ahmad Nasir, Natalia Seoane and Antonio Garcia Loureiro</p> <p>Centro de Investigación en Tecnologías da Información (CITIUS) Universidade de Santiago de Compostela, Santiago de Compostela, Spain</p>



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R-0070	<p>A combined Monte Carlo-balance equations approach for the study of small-signal and noise properties of graphene.</p> <p><b>Raúl Rengel, José M. Iglesias, Elena Pascual and María J. Martín</b></p> <p>Departamento de Física Aplicada, University of Salamanca, 37008 Salamanca, Spain</p>
R-0072	<p>Transmission Electron Microscopy Image Simulation of Extended Defects in Silicon.</p> <p><b>Manuel Ruiz, Luis A. Marqués, María Aboy, Iván Santos, Pedro López, Lourdes Pelaz</b></p> <p>Departamento de Electrónica, Universidad de Valladolid, E.T.S.I. de Telecomunicación, 47011 Valladolid, Spain.</p>
R-0078	<p>Electrical Characterization and Radiation Hardness of a New 3D Vertical JFET Transistor.</p> <p><b>Lucía Ré, Pablo Fernández-Martínez, David Flores, Salvador Hidalgo, David Quirion, and Miguel Ullán</b></p> <p>Instituto de Microelectrónica de Barcelona, Centro Nacional de Microelectrónica (IMB-CNM, CSIC) C/ dels Til·lers, Campus de la Universitat Autònoma de Barcelona, 08193 – Bellaterra (Barcelona), Spain</p>
R-0081	<p>Substrate bulk-induced effect beyond the interface in hybrid lead iodide perovskites</p> <p><b>Carmen Coya<sup>1</sup>, Esteban Climent-Pascual<sup>2</sup>, Jorge Sebastián Moreno<sup>1</sup>, Angel Luis Alvarez<sup>1</sup>, Bruno Clasen Hames<sup>3</sup>, Elena Mas-Marzá<sup>3</sup>, Iván Mora-Seró<sup>3</sup>, Alicia de Andrés<sup>2</sup></b></p> <p><sup>1</sup>Escuela Técnica Superior de Ingeniería de Telecomunicación (ETSIT), Universidad Rey Juan Carlos, 28933, Madrid, Spain. <sup>2</sup>Instituto de Ciencia de Materiales de Madrid, Consejo Superior de Investigaciones Científicas, Cantoblanco, Madrid, 28049, Spain. <sup>3</sup>Institute of Advanced Materials (INAM), Universitat Jaume I, 12006 Castelló, Spain</p>
R-0083	<p>A model for the contact resistance between metal and 2D semiconductor.</p> <p><b>Ferney Chaves*, David Jiménez</b></p> <p>Departament d'Enginyeria Electrònica, Escola d'Enginyeria, Universitat Autònoma de Barcelona, Campus UAB, 08193 Bellaterra, Spain</p>
R-0089	<p>Electron-phonon scattering rates in nanostructures.</p> <p><b>Martí Raya-Moreno, Xavier Cartoixà</b></p> <p>Departament d'Enginyeria Electrònica, Universitat Autònoma de Barcelona, Bellaterra, Spain</p>



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R-0092	<p>Charge-state dependency of defect kinetics in HfO<sub>2</sub>.</p> <p>Laura Urquiza, Xavier Cartoixa</p> <p>Departament d'Enginyeria Electrònica, Universitat Autònoma de Barcelona, Bellaterra, Spain</p>
R-0098	<p>Computation method and comparison of semiconductor power losses within bidirectional switches (BDS).</p> <p>J.L. Gálvez, X. Perpiñà, M. Vellvehí, D. Sánchez, X. Jordà, J. Millán</p> <p>IMB-CNM (CSIC), C/ del Tèl·lers. Campus UAB. 08193 Cerdanyola del Vallès (Bellaterra), Spain.</p>
R-0100	<p>Structural and electro-optical characterization of ZnO/p-Si light-emitting devices</p> <p>Oriol Blázquez, Julià López-Vidrier, Pablo Vales, Sergi Hernández and Blas Garrido</p> <p>MIND-IN2UB, Department of Engineering: Electronics, University of Barcelona, Martí i Franquès 1, 08028 Barcelona, Spain</p>
R-0102	<p>Memristive characterization of SiAlON thin films</p> <p>Oriol Blázquez,<sup>1</sup> Eduardo Mariño,<sup>1</sup> Iván Camps,<sup>2</sup> Sergi Hernández,<sup>1</sup> Rosalía Serna,<sup>2</sup> and Blas Garrido<sup>1</sup></p> <p><sup>1</sup>MIND-IN2UB, Department of Engineering: Electronics, University of Barcelona, C/Martí i Franquès 1, 08028 Barcelona, Spain <sup>2</sup>Laser Processing Group, Institute of Optics, CSIC, C/Serrano 121, 28006 Madrid, Spain</p>



### SESSION 3. CHARACTERIZATION AND RELIABILITY

R-0002	<p><b>Top electrode dependence of the resistive switching behavior in HfO<sub>2</sub>/n+Si-based devices.</b></p> <p>J. Muñoz-Gorritz<sup>1</sup>, M.C. Acero<sup>2</sup>, M.B. Gonzalez<sup>2</sup>, F. Campabadal<sup>2</sup></p> <p><sup>1</sup>Departament d'Enginyeria Electrònica, Universitat Autònoma de Barcelona, 08193 Bellaterra, Spain.  <sup>2</sup>Institut de Microelectrònica de Barcelona, IMB-CNM, CSIC. Campus UAB, 08193 Bellaterra, Spain.</p>
R-0006	<p><b>Characterization of the Fatigue Profile in La1/3Ca2/3MnO3 Films Caused by the EPIR Mechanism</b></p> <p>W. Román Acevedo<sup>1,2</sup>, D. Rubi<sup>1,2,3</sup>, U. Lüders<sup>4</sup>, P. Granel<sup>5</sup>, P. Levy<sup>1,2,3</sup>, E. Miranda<sup>7</sup></p> <p><sup>1</sup> GlyA y INN, CNEA, Buenos Aires, Argentina,  <sup>2</sup> Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET), Argentina,  <sup>3</sup> Escuela de Ciencia y Tecnología, UNSAM, Buenos Aires, Argentina,  <sup>4</sup> CRISMAT, CNRS UMR 6508, ENSICAEN, Caen Cedex 4, France,  <sup>5</sup> INTI - CMNB, Buenos Aires, Argentina,  <sup>7</sup> Universitat Autònoma de Barcelona, Cerdanyola del Valles, Barcelona, Spain</p>
R-0010	<p><b>SPICE simulation of RRAM circuits. A compact modeling perspective</b></p> <p>G. González-Cordero, J.B. Roldán, F. Jiménez-Molinos</p> <p>Departamento de Electrónica y Tecnología de Computadores, Universidad de Granada, Spain</p>
R-0017	<p><b>Advanced electrical characterization of atomic layer deposited Al<sub>2</sub>O<sub>3</sub> MIS-based structures</b></p> <p>Héctor García, Helena Castán, and Salvador Dueñas</p> <p>Department of Electronics, University of Valladolid. Paseo Belén, 15. 47011 Valladolid, Spain.</p>
R-0030	<p><b>Atomic layer deposition and characterization of ZrO<sub>2</sub>-Fe<sub>2</sub>O<sub>3</sub> thin films</b></p> <p>Kristjan Kalam<sup>1</sup>, Helina Seemen<sup>1</sup>, Peeter Ritslaid<sup>1</sup>, Aile Tamm<sup>1</sup>, Kaupo Kukli<sup>1,2</sup>, Aarne Kasikov<sup>1</sup>, Joosep Link<sup>3</sup>, Raivo Stern<sup>3</sup>, Salvador Dueñas<sup>4</sup>, Helena Castán<sup>4</sup>, Héctor García<sup>4</sup></p> <p><sup>1</sup> Institute of Physics, University of Tartu, W. Ostwald 1, 50411 Tartu, Estonia.  <sup>2</sup> Department of Chemistry, University of Helsinki, P. O. Box 55, FI-00014 Helsinki, Finland.  <sup>3</sup> National Institute of Chemical Physics and Biophysics, Akadeemia tee 23, 12618 Tallinn, Estonia.  <sup>4</sup> Department of Electronics, University of Valladolid. Paseo Belén, 15. 47011 Valladolid, Spain.</p>
R-0044	<p><b>Enhancement of Resistive Switching Measurement Time-Resolution by a Developed Ultrafast System</b></p> <p>M. Maestro, J. Diaz-Fortuny, J. Martin-Martinez, A. Crespo-Yepes, R. Rodriguez, M. Nafria and X. Aymerich</p> <p>Departament d'Enginyeria Electrònica, Universitat Autònoma de Barcelona (UAB), Bellaterra, Spain</p>



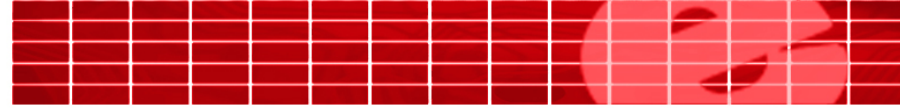
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R-0049	<p>Characterization of amorphous Si generated through classical molecular dynamics simulations</p> <p>Iván Santos, Pedro López, María Aboy, Luis A. Marqués, Lourdes Pelaz</p> <p>Departamento de Electricidad y Electrónica, E.T.S.I. Telecomunicación, Universidad de Valladolid, Paseo Belén 15, 47011, Valladolid, Spain</p>
R-0055	<p>Ni/HfO<sub>2</sub>/Si resistive switching structures: A device level and nanoscale analysis with CAFM</p> <p>S. Claramunt<sup>a</sup>, Q. Wu<sup>a</sup>, M. Maestro<sup>a</sup>, M. Porti<sup>a</sup>, M.C. Acero<sup>b</sup>, M. B. Gonzalez<sup>b</sup>, J. Martin-Martinez, F. Campabadal<sup>b</sup>, M. Nafria<sup>a</sup></p> <p><sup>a</sup> Universitat Autònoma de Barcelona. Dept. Enginyeria Electrònica Edifici Q, 08193 Bellaterra, Spain <sup>b</sup> Institut de Microelectrònica de Barcelona, IMB-CNM (CSIC), Campus UAB, 08193 Bellaterra, Spain</p>
R-0058	<p>Flux-Charge Characterizing of Reset Transition in Bipolar Resistive-Switching Memristive Devices</p> <p>M. M. Al Chawa<sup>1</sup>, R. Picos<sup>1</sup>, E. Covi<sup>2</sup>, S. Brivio<sup>2</sup>, E. Garcia-Moreno<sup>1</sup>, S. Spiga<sup>2</sup></p> <p><sup>1</sup>Electronic Engineering Group, Physics Department, Universitat de les Illes Balears, Palma de Mallorca, 07122, Spain. <sup>2</sup>Laboratorio MDM, IMM-CNR, Via C. Olivetti 2, 20864 Agrate Brianza (MB), Italy</p>
R-0074	<p>Combination of local and distributed resistive switching in ultra-thin (&lt;2nm) TiO<sub>2</sub> films</p> <p>Na Xiao, Macro A. Villena, Yuanyuan Shi, Xu Jing, Fei Hui, Mario Lanza</p> <p>Institute of Functional Nano&amp; Soft Materials, Soochow University, Collaborative Innovation Center of Suzhou Nano Science &amp; Technology, 199 Ren-Ai Road, Suzhou, 215123, China</p>
R-0096	<p>Lock-in Infrared Thermography: a tool to locate and analyse failures in power devices</p> <p>M. Vellvehi, X. Perpiñà, J. León, D. Sánchez and X. Jordà</p> <p>Institut de Microelectrònica de Barcelona, Centre Nacional de Microelectrònica (IMB-CNM, CSIC) Campus U.A.B 08193, Cerdanyola del Vallès (Barcelona).</p>



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SESSION 4. SENSOR, ACTUATORS & MICRO/NANO SYSTEMS. INCLUDING BIOMEDICAL DEVICES.

R-0001	<p>The design and analysis of a novel structural MEMS piezoresistive pressure sensor</p> <p>Chuang Li, Francisco Cordovilla, José L. Ocaña</p> <p>UPM Laser Center, Polytechnical University of Madrid, Carretera de Valencia, km. 7.3, 28031 Madrid, Spain</p>
R-0012	<p>Dynamic Study of the Gate of an n-MOS Microfluidic Transistor for Computational Microfluidics</p> <p>Emilio Franco, Francisco Perdigonés and José Manuel Quero</p> <p>Universidad de Sevilla, Escuela Superior de Ingeniería, Sevilla, Spain</p>
R-0014	<p>Detection of low levels of NO<sub>2</sub> with electrospun tin dioxide nanofibers based sensors</p> <p>J. P. Santos<sup>1</sup>, E. Hontañón<sup>1</sup>, I. Sayago<sup>1</sup>, M. J. Fernández<sup>1</sup> and J. Lozano<sup>2</sup></p> <p><sup>1</sup>GRIDSEN, Instituto de Tecnologías Físicas y de la Información ITEFI-CSIC. Madrid, Spain. <sup>2</sup>Department of Electric and Electronic Engineering and Automation, University of Extremadura, Badajoz, Spain</p>
R-0024	<p>Love wave toluene sensor based on multi-guiding layers</p> <p>D. Matatagui<sup>1,2</sup>, M.J. Fernandez<sup>1</sup>, J. Fontecha<sup>1</sup>, J.P. Santos<sup>1</sup>, I. Sayago<sup>1</sup>, I. Gràcia<sup>3</sup>, J. Lozano<sup>4</sup>, M.C. Horrillo<sup>1</sup></p> <p><sup>1</sup>GRIDSEN, ITEFI-CSIC, Serrano 144, 28006 Madrid, Spain <sup>2</sup>CCADET, Universidad Nacional Autónoma de México, CU 04510 D.F., Mexico <sup>3</sup>Instituto de Microelectrónica de Barcelona, CSIC, Campus UAB, 08193 Bellaterra, Spain <sup>4</sup>Escuela de Ingenierías Industriales. Universidad de Extremadura. Badajoz, Spain</p>
R-0025	<p>ZnO and ZnO/SnO<sub>2</sub> nanofibers as resistive gas sensors for NO<sub>2</sub> detection</p> <p>Sayago, E. Hontañón, M.J. Fernández, I. Gràcia<sup>a</sup> and J.P. Santos</p> <p>GRIDSEN, Instituto de Tecnologías Físicas y de la Información ITEFI-CSIC. <sup>a</sup> Instituto de Microelectrónica de Barcelona, CSIC, Campus UAB, 08193 Bellaterra, Spain</p>
R-0026	<p>Micromachined sensors based on ZnO structures and their thermo- and photo-activated response to reducing gases</p> <p>S. Vallejos<sup>a</sup>, I. Gracia<sup>b</sup>, E. Figueras<sup>b</sup>, N. Pizurova<sup>c</sup>, J. Hubalek<sup>a,d</sup>, C. Cané<sup>b</sup></p> <p><sup>a</sup>SIX Research Centre, Brno University of Technology, Brno, Czech Republic <sup>b</sup>Instituto de Microelectrónica de Barcelona (IMB-CNM, CSIC), Barcelona, Spain <sup>c</sup>Institute of Physics of Materials, Academy of Sciences of Czech Republic, Brno, Czech Republic <sup>d</sup>Central European Institute of Technology, Brno University of Technology, Brno, Czech Republic</p>





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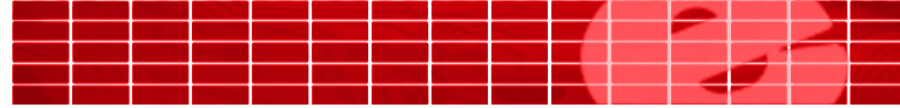
R-0028	<p>Sub-<math>\mu</math>A detection by means of GMR sensors using a custom read-out interface</p> <p>D. García-Romeo<sup>1</sup>, N. Medrano<sup>1</sup>, B. Calvo<sup>1</sup>, P. A. Martínez<sup>1</sup>, M. D. Cubells-Beltrán<sup>2</sup>, C. Reig<sup>2</sup>, S. Cardoso<sup>3</sup>, P.P. Freitas<sup>3</sup></p> <p><sup>1</sup>Group of Electronic Design (GDE), Universidad de Zaragoza, Zaragoza, Spain <sup>2</sup>Department of Electronic Engineering, University of Valencia, Valencia, Spain <sup>3</sup>INESC-MN, Lisboa, Lisboa, Portugal</p>
R-0031	<p>Macroporous Silicon with 500 nm periodicity for near-infrared applications</p> <p>Didac Vega Bru, David Cardador Maza, Ángel Rodríguez Martínez</p> <p>Grup de recerca en Micro i Nanotecnologia (MNT), departament d'Enginyeria Electrònica, Universitat Politècnica de Catalunya (UPC), c/ Jordi Girona 1-3, Barcelona 08034, Spain</p>
R-0034	<p>Integrated anion-exchange cartridge for [<sup>18</sup>F]F<sup>-</sup> preconcentration in a PDMS radiopharmacy chip</p> <p>B. Salvador<sup>1</sup>, A. Luque<sup>1</sup>, A. Corral<sup>2</sup>, D. Orta<sup>2</sup>, I. Fernández<sup>2</sup>, L. Fernández<sup>2</sup>, J. M. Quero<sup>1</sup></p> <p><sup>1</sup>Dept. Ingeniería Electrónica <sup>2</sup>Centro Nacional de Aceleradores, US, CSIC, Junta de Andalucía, Universidad de Sevilla</p>
R-0041	<p>Improved transmission and thermal emission in macroporous silicon with 700 nm pitch</p> <p>D. Cardador, D. Vega, D. Segura, A. Rodriguez</p> <p>Micro i Nanotecnologies, Departament d'Enginyeria Electrònica, Universitat Politècnica de Catalunya, C/Jordi Girona, 31, 08031, Barcelona, Spain</p>
R-0050	<p>Electrochemical characterization of ionogel actuators</p> <p>Nerea Gil-González<sup>1</sup>, T. Akyazi<sup>2,3</sup>, E. Castaño<sup>1</sup>, F. Benito-Lopez<sup>3,4</sup>, M.C. Morant-Miñana<sup>5</sup></p> <p><sup>1</sup>CEIT and Tecnun (University of Navarra), Donostia-San Sebastián, Spain <sup>2</sup>Tecnun (University of Navarra), Donostia-San Sebastián, Spain <sup>3</sup>Analytical Microsystems &amp; Materials for Lab-on-a-Chip (AMMa-LOAC) Group, Microfluidics UPV/EHU Cluster, Analytical Chemistry Department, University of the Basque Country UPV/EHU, Vitoria-Gasteiz, Spain <sup>4</sup>Insigh Centre for Data Analytics, National Centre for Sensor Research, Dublin City University, Dublin, Ireland <sup>5</sup>CIC nanoGUNE Consolider, Donostia-San Sebastián, Spain</p>





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R-0057	<p><b>Development of gas sensors based in photonic crystal slabs</b></p> <p>Oraman Yoosefi, MJ Yahyapour, Daniel Segura, Didac Vega, Federico Dios, Angel Rodriguez</p> <p>Micro I Nanotechnologies, department d'Enginyeria Electrònica, Universitat politècnica de Catalunya, C/Jordi Girona, 31, 08031, Barcelona, Spain</p>
R-0075	<p><b>Detection of air pollutants with a Wireless Sensor Networks combined with Pattern Recognition Methods</b></p> <p>Patricia Arroyo, Jesús Lozano, José Ignacio Suárez, José Luis Herrero, Pablo Carmona</p> <p>Industrial Engineering School, University of Extremadura. Av. Elvas s/n, Badajoz, Spain</p>
R-0087	<p><b>Optofluidic System for fluorescence cytometry</b></p> <p>L. Méndez<sup>1</sup>, J.J. Gonzalez-Murillo<sup>1</sup>, M. Cabello<sup>2</sup>, J. Jaramillo-Villegas<sup>1</sup>, I. Bernat<sup>1</sup>, O. Castillo<sup>2</sup>, M. Moreno-Sereno<sup>1</sup>, A. Romano-Rodríguez<sup>1</sup></p> <p><sup>1</sup>Engineering Department: Electronics, Universitat de Barcelona, c/ Martí I Franqués 1. 08028 Barcelona, Spain  <sup>2</sup>IMB-CNM CSIC, Campus UAB, 08193 Bellaterra, Spain</p>
R-0094	<p><b>Single metal oxide nanowires for gas sensors with ultra-low power consumption</b></p> <p>G. Domènech-Gil<sup>1</sup>, J. Samà<sup>1</sup>, J.D. Prades<sup>1</sup>, O. Casals<sup>1</sup>, F. Hernandez-Ramirez<sup>1,2</sup>, I. Gràcia<sup>3</sup>, S. Barth<sup>4</sup>, A. Romano-Rodríguez<sup>1</sup></p> <p><sup>1</sup>MIND-IN2UB-Dept. Enginyeria: Electrònica, Universitat de Barcelona (UB), Martí i Franqués 1, 08028, Barcelona, Spain.  <sup>2</sup>Institut de Recerca en Energia de Catalunya, Jardins de les Dones de Negre 1,08930 Sant Adrià de Besòs, Spain  <sup>3</sup>Institut de Microelectrònica de Barcelona, IMB-CNM-CSIC, 08193 Bellaterra, Spain  <sup>4</sup>Institute of Materials Chemistry, TU Wien, Getreidemarkt 9/165, A-1060 Vienna, Austria</p>
R-0099	<p><b>Optical design of an optofluidic device for flow micro-cytometry</b></p> <p>I. Rodríguez-Diez, L. Méndez, J.J. González-Murillo, J. Jaramillo-Villegas, I. Bernat A. Romano-Rodríguez<sup>1</sup>, M. Moreno-Sereno</p> <p>Engineering Department: Electronics, Universitat de Barcelona, C/ Martí I Franqués 1. 08028 Barcelona, Spain</p>



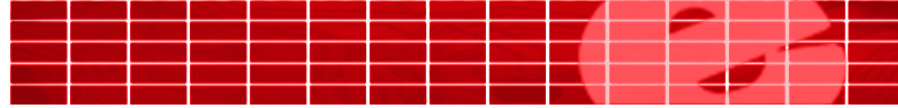
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SESSION 5. OPTOELECTRONIC, PHOTOVOLTAIC  
DEVICES & DISPLAYS. HYBRID & ORGANIC  
ELECTRONICS

R-0003	<p>Cost-effective cleaning solutions based on H<sub>2</sub>O/NH<sub>3</sub>/H<sub>2</sub>O<sub>2</sub> mixtures for ALD Al<sub>2</sub>O<sub>3</sub> passivated IBC c-Si solar cells</p> <p>G. Masmitjà, P. Ortega, I. Martín, G. López, E. Calle, L.G. Gerling, C.Voz, R. Alcubilla</p> <p>Micro and Nanotechnologies Group MNT. Departament d'Enginyeria Electrònica, Universitat Politècnica de Catalunya UPC. C/ Jordi Girona 1-3, Modulo C-4, 08034 Barcelona, Spain</p>
R-0008	<p>Interdigitated back contacted c-Si(p) solar cells with photovoltaic efficiencies beyond 22%</p> <p>E. Calle, P. Ortega, G. López, I. Martín, D. Carrió, G. Masmitjà, C.Voz, A. Orpella, J. Puigdollers, R. Alcubilla</p> <p>Micro and Nanotechnologies Group MNT. Departament d'Enginyeria Electrònica, Universitat Politècnica de Catalunya UPC. C/ Jordi Girona 1-3, Modulo C-4, 08034 Barcelona, Spain</p>
R-0039	<p>Silicon nitride layers for DopLa-IBC solar cells</p> <p>A.Méndez, I. Martín, G. López, P. Ortega, A. Orpella, R. Alcubilla</p> <p>Departament d'Enginyeria Electrònica, Universitat Politècnica de Catalunya. Gran Capità s/n, Modul C4, 08034 Barcelona, Spain</p>
R-0046	<p>Hole-selective contacts by RF magnetron sputtering for heterojunction silicon solar cell structures</p> <p>J. Bertomeu<sup>1</sup>, R. Perea<sup>1</sup>, L.G. Gerling<sup>1</sup>, J.M. Asensi<sup>1</sup>, J. Andreu<sup>1</sup>, J. Puigdollers<sup>1</sup>, C. Voz<sup>2</sup></p> <p><sup>1</sup> Departament de Física Aplicada, Universitat de Barcelona, c/ Martí i Franquès 1–11, 08028 Barcelona <sup>2</sup> Departament d'Enginyeria Electrònica, Universitat Politècnica de Catalunya, c/ Jordi Girona 1–3, 08034 Barcelona</p>
R-0064	<p>Impact of Annealing on the Performance of 1 eV GaNAsSb Solar Cells</p> <p>Iván Lombardero<sup>1</sup>, Mario Ochoa<sup>1</sup>, Iván García<sup>1</sup>, Manuel Hinojosa<sup>1</sup>, Pablo Caño<sup>1</sup>, Jesús Bautista<sup>1</sup>, Luis Cifuentes<sup>1</sup>, Ignacio Rey-Stolle<sup>1</sup>, Carlos Algora<sup>1</sup>, Andrew Johnson<sup>2</sup>, J. Iwan Davies<sup>2</sup>, Kian Hua Tan<sup>3</sup>, Wan Khai Loke<sup>3</sup>, Satrio Wicaksono<sup>3</sup>, Soon Fatt Yoon<sup>3</sup></p> <p><sup>1</sup>Instituto de Energía Solar, Universidad Politécnica de Madrid, Avda. Complutense 30, 28040 Madrid, Spain <sup>2</sup>IQE plc, Cardiff, UK <sup>3</sup>School of Electrical and Electronic Engineering, Nanyang Technological University, Nanyang Avenue, Singapore 639798, Republic of Singapore</p>



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R-0077	<p>Alternative substrates for thin film chalcogenide solar cells: Towards a more functional building integration</p> <p>I. Becerril-Romero<sup>1</sup>, M. Colina<sup>1</sup>, S. Giraldo<sup>1</sup>, M. Neuschitzer<sup>1</sup>, M. Placidi<sup>1</sup>, V. Izquierdo-Roca<sup>1</sup>, E. Saucedo<sup>1</sup>, A. Pérez-Rodríguez<sup>1,2</sup></p> <p><sup>1</sup>IREC - Catalonia Institute for Energy Research, 08930, Sant Adrià de Besòs, Barcelona, Spain <sup>2</sup>IN<sup>2</sup>UB – Departament d'Enginyeries: Electrònica. Universitat de Barcelona. 08028 Barcelona, Spain</p>
R-0093	<p>Fabrication and characterization of ring resonators for biochemical analysis</p> <p>Daniel Segura, Didac Vega, Oraman Yoosefi, Federico Dios, Angel Rodriguez</p> <p>Micro I Nanotecnologies, department d'Enginyeria Electrònica, Universitat Politècnica de Catalunya, C/Jordi Girona, 31, 08031, Barcelona, Spain</p>