

## *Program*

# International Symposium on Flexible Electronics (ISFE)

April 6 – 9, 2008

Tarragona, Spain

### Conference Chair:

**Benjamin Iñiguez**

Department of Electronic, Electrical and Automatic Engineering  
Universitat Rovira i Virgili (URV)

*Co-sponsored by the IEEE Electron Devices Society  
under its  
Distinguished Lecturer Program*

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**Michael S. Shur**, Rensselaer Polytechnic Institute, USA  
**Tolis Voutsas**, Sharp Labs of America, USA  
**Euan Smith**, Cambridge Display Technology (CDT), UK  
**Warren Jackson**, HP Labs, USA

***The following invited speakers are***

***IEEE Electron Device Society***

***Distinguished Lecturers***

**Professor Benjamín Iñiguez**

**Professor M. Jamal Deen**

**Professor Yue Kuo**

**Professor Michael Shur**

**Sunday, April 6, 2008**

17:00 – 19:00                      **Registration**

19:00 – 20:30                      **Reception**

**Monday, April 7, 2008**

08:30                                      **OPENING SESSION**

Welcome and Conference Overview  
Benjamin Iñiguez, Conference Chair

08:40                                      **Session 1: MATERIALS AND INTERFACES**

Chair person: Dr Hagen Klauk, Max Planck Institute for Solid State  
Research (Germany)

08:40 – 09:20                      Technical roadmapping of organic electronics  
William Eccleston (*invited paper*)  
University of Liverpool (UK)

09:20 – 09:40                      Impedance of carrier injection at the metal-organic  
interface mediated by surface states  
Germà Garcia-Belmonte  
Universitat Jaume I (Spain)

09:40 – 10:00                      Flexible and transferable single-crystal Si nanomembranes  
incorporating strain and hybrid crystal orientations  
Shelley A. Scott  
University of Wisconsin-Madison (USA)

10:00 – 10:20                      High-performance spiral inductors and MIM capacitors  
monolithically integrated on a flexible plastic substrate  
Zhenqiang Ma  
University of Wisconsin-Madison (USA)

10:20 – 11:00                      Interface and bulk properties of evaporated small-molecule layers  
Thorvald Andersson (*invited paper*)  
Chalmers University (Sweden)

11:00 – 11:30                      Coffee Break

**Monday, April 7, 2008 (continued)**

- 11:30 **Session 2: FABRICATION PROCESSES I**  
Chair person: Dr Warren B Jackson, Hewlett-Packard Labs (USA)
- 11:30 – 12:10 Low temperature A-Si:H and poly-Si TFTs for flexible electronics  
Yue Kuo (*invited paper*)  
Texas A&M University (USA)
- 12:10 – 12:30 Flexible sub-micrometer channel length OTFTs by nano-imprint lithography  
H. Gold  
Joanneum Research (Austria)
- 12:30 – 12:50 Flexible complementary TFTs on PET employing transferable hybrid oriented single-crystal silicon nanomembranes  
Huiqing Pang  
University of Wisconsin-Madison (USA)
- 12:50 – 13:2:10 Photo response of inkjet fabricated air stable organic TFTs  
Kamol Wasapinyokul  
Electrical Engineering Division, University of Cambridge (UK)
- 13:10 – 13:30 Advances on amorphous oxide TFTS  
Elvira Fortunato, CENIMAT/I3N, FCT-UNL (Portugal)
- 13:30 Lunch
- 15:00 **Session 3: FABRICATION PROCESSES II**  
Chair person: Prof Lluís F Marsal, Universitat Rovira i Virgili (Spain)
- 15:00 – 15:40 Flexible field-effect transistors fabricated on 25 µm pen foil  
François Furthner (*invited paper*)  
Holst Centre, TNO-Netherlands Organisation for Applied Scientific Research (The Netherlands)
- 15:40 - 16:00 Organic thin-film transistors on bank notes  
Ute Zschieschang  
Max Planck Institute for Solid State Research (Germany)
- 16:00 – 16:20 Improvements on (BEHP-PPV)-CO-(MEH-PPV) based OLEDs using Mg and treated PEDOT:PSS as electrodes  
J.C. Sánchez  
Sección de Electrónica del Estado Sólido, Departamento de Ingeniería Eléctrica, CINVESTAV-IPN (Mexico)
- 16:20 - 16:40 Flexible photodetectors on a plastic substrate employing transferable single-crystal germanium  
Zhenqiang Ma  
University of Wisconsin-Madison (USA)

**Monday, April 7, 2008 (continued)**

- 16:40 – 18:00      **POSTER SESSION AND BRIEFING**  
Chair person: Prof William Eccleston, University of Liverpool (UK)
- 16:40 - 16:43      Photoconductivity of fluorene copolymer with carbazole group in main chain  
Jaroslaw Jung  
Department of Molecular Physics, Faculty of Chemistry, Technical University of Lodz (Poland)
- 16:43 – 16:46      The correlation between the physico-chemical characteristics and catalytic activity of COO(I), COO(II) and COO(I,II).  
Virendra Goswami  
Indian Institute of Technology (IIT) Kharagpur (now, Institute of Engineering & Emerging Technology) (India)
- 16:46 – 16:49      Effective N- and P-type doping in flexible single-crystal  
Huiqing Pang  
University of Wisconsin-Madison (USA)
- 16:49 – 16:52      All-solid-state inorganic single-sided flexible electrochromic device  
Shang Hui Nien  
Department of Materials Science and Engineering, Feng Chia University (Taiwan)
- 16:52 – 16:55      Transparent conductive zinc oxide thin films by chemical bath deposition for flexible electronic applications  
Rong-Fuh Louh  
Dept. of Materials Science & Engineering, Feng Chia University (Taiwan)
- 16:55 – 16:58      High-performance ZnO thin-film transistors on flexible substrate  
Jae-Kyu Lee  
Division of Materials Science and Engineering, Hanyang University (Korea)
- 16:58 – 17:01      Fabrication and characterisation of organic field-effect transistors (OFETs) based on single crystals of tetrathiafulvalene derivatives  
Raphael Pfattner  
Institut de Ciencia de Materials de Barcelona ICMAB-CSIC (Spain)
- 17:01 – 17:04      Density of bandgap states in pentacene measured from the temperature dependence of thin-film transistors  
Joaquim Puigdollers  
Dept. Enginyeria Electronica-Universitat Politècnica Catalunya (Spain)

**Monday, April 7, 2008 (continued)**

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|---------------|---|
| 17:04 – 17:07 | Origin of the different performance of top and bottom contact organic field effect transistors<br>Susanne Scheinert<br>TU Ilmenau (Germany) |
| 17:07 – 17:10 | Model for the injection of charge through the contacts of organic transistors<br>P. Lara Bullejos<br>Universidad de Granada (Spain)         |
| 17:10 – 17:13 | High-efficiency white organic light-emitting diodes using codoped blue emitting layers<br>Young Kwan Kim<br>Hongik University (Korea)       |
| 17:13 – 18:00 | Poster Viewing/Discussion Session with coffee   |



**Tuesday, April 8, 2008**

- 09:00 **Session 4: PHYSICS AND CHARACTERIZATION OF ORGANIC TFT**  
Chair person: Prof Michael S Shur, Rensselaer Polytechnic Institute (USA)
- 09:00 – 09:40 Contacts effects on the charge transport in polymer IC thin-film field-effect transistors  
M. Jamal Deen (*invited paper*)  
McMaster University (Canada)
- 09:40 – 10:00 Variation of the electrical characteristics of PMMA on P3HT polymer tfts under stress.  
M. Estrada and J. C. Sánchez  
Sección de Electrónica del Estado Sólido (SEES), Departamento de Ingeniería Eléctrica, CINVESTAV (Mexico)
- 10:00 – 10:20 Peculiarities of OFET performance due to hopping transport  
Susanne Scheinert  
TU Ilmenau (Germany)
- 10:20 – 10:40 Space-charge-limited currents in organics with distributed transport and trap states  
Gernot Paasch  
IFW Dresden (Germany)
- 10:40 – 11:10 Coffee Break
- 11:10 **Session 5: DEVICE MODELING**  
Chair person: Prof M. Jamal Deen, McMaster University (Canada)
- 11:10 – 11:50 Compact capacitance model for thin film transistors with non-ideal contacts  
Michael S. Shur (*invited paper*)  
Rensselaer Polytechnic Institute (USA)
- 11:50 – 12:10 Influence of fabrication process variations on model parameters in OTFTS  
Rodrigo Picos  
Universitat de les Illes Balears (Spain)
- 12:10 – 12:30 Improved extrinsic compact TFT model  
V.O. Turin  
Orel State Technical University (Russia)

**Tuesday, April 8, 2008 (continued)**

- 12:30 – 12:50                      Fabrication and modelling of sandwich dielectrics for logic and non-volatile memory  
Munira Raja  
Liverpool University (UK)
- 13:00                                      Lunch
- 15:00                                      **Session 6: OLEDs AND ORGANIC SOLAR CELLS**  
Chair person: Prof Thorvald Andersson, Chalmers University (Sweden)
- 15:00 – 15:40                      Total matrix-addressing a solution for flexible OLED displays  
Euan Smith (*invited paper*)  
CDT Ltd. Cambridge, UK.
- 15:40 – 16:00                      Conduction mechanisms of N-crystalline-silicon /P3HT heterojunction solar cells  
Jairo Cesar Nolasco Montaña  
Universitat Rovira I Virgili (Spain)
- 16:00 – 16:20                      Enhanced performance of OLED based on a molecularly doped polymer  
Stephanie Cheylan  
ICFO - Institute of Photonic Sciences (Spain)
- 16:20 – 16:40                      Organic photodiodes on flexible substrates  
Anja Hasse  
Joanneum Research (Austria)
- 16:40 – 17:00                      Coffee Break
- 17:30                                      Guided tourist visit
- 21:00                                      Gala dinner

**Wednesday, April 9, 2008**

- 08:40 **Session 7: FLEXIBLE CIRCUITS AND DISPLAYS**  
Chair person: Yue Kuo, Texas A&M University (USA)
- 08:40 – 09:20 Current status and perspective of flextronics employing transferable single-crystal silicon  
Zhenqiang Ma (*invited paper*)  
University of Wisconsin-Madison (USA)
- 09:20 – 09:40 Inkjet printed rf resonators on flexible substrate  
Weining Chen and Kamol Wasapinyokul  
Electrical Engineering Division, University of Cambridge (UK)
- 09:40 - 10:20 Roll-to-roll fabrication of flexible display backplane electronics with self-aligned imprint lithography (SAIL)  
W. B. Jackson (*invited paper*)  
Hewlett-Packard Labs (USA)
- 10:20 – 11:10 Coffee Break
- 11:10 **Session 8: FLEXIBLE SENSORS AND ACTUATORS**  
Chair person: Rodrigo Picos, Universitat de les Illes Balears (Spain)
- 11:10 – 11:50 Skin-like sensors and actuators interacting with people  
Tsuyoshi Sekitani and Takao Someya (*invited paper*)  
Quantum-Phase Electronics Center, School of Engineering, The University of Tokyo (Japan)
- 11:50 – 12:10 Organic films for plastic pressure sensors  
E. E. Laukhina  
Institut de Ciència de Materials de Barcelona (ICMAB-CSIC)
- 12:10 – 12:30 Quantum processes of self-assembly, photosynthesis and molecular computing in artificial minimal living cells  
Arvydas Tamulis  
Vilnius University Institute of Theoretical Physics and Astronomy (Lithuania)
- 12:30 – 12:50 All-organic electroactive composite for sensing and actuation  
Giovanni Sicurella  
Dipartimento di Ingegneria Elettrica Elettronica e dei Sistemi, Università degli studi di Catania (Italy)
- 12:50 – 13:10 **Closing Session**
- 13:10 Lunch and Departure