UNIVERSITAT ROVIRA i VIRGILI

CAD-TFT 2019 Workshop

Tarragona (Spain), July 9-10 2019

Technical Programme

July 9 2019

8:45-16:00 **Registration**

9:15-9:30 **WELCOME**

PROCESS TECHNOLOGIES · *Chairs: Subjune Jung and Radu Sporea*

9:30-10:00

Emerging Designs of Thin Film Transistors with Schottky Contacts

Paul Lining Zhang. College of Electronic Science and Technology, Shenzhen University, China.

10:00-10:30

Defect Self-Compensation for High-Mobility Bilayer InGaZnO/In2O3 Thin-Film Transistor

Guoli Li. School of Physics and Electronics, Hunan University, Changsha, Hunan Province, China.

11:30-12:00

Room Temperature Solution Synthesized p-Type Copper(I) Iodide Semiconductors for Transparent Thin Film Transistors

Yong-Young Noh. Department of Chemical Engineering, Pohang University of Science and Technology, Pohang, Republic of Korea

11:00-11:30 Coffee Break

11:30-12:00

Aligned Silver Nanowire Transparent Electrodes for Displays and Sensors

Hyunhyub Ko. School of Energy and Chemical Engineering, Ulsan National Institute Science and Technology (UNIST), Ulsan, Republic of Korea

12:00-12:30

High-resolution, solution-processed tandem organic electronics

Do Hwan Kim. Department of Chemical Engineering, Hanyang University, Seoul, Korea.

12:30-13:00

Organic-Inorganic Hybrid Materials for Advanced Functionality Development in Large Area Electronics

Myung-Gil Kim. Department of Chemistry, Chung-Ang University, Seoul, Republic of Korea.

13:00-14:30 Lunch

14:30-15:30

TUTORIAL · *Chair: Benjamin Iñiguez*

Verilog-A for Compact Modeling Implementation.

Slobodan Mijalkovic, Silvaco Europe Ltd., St. Ives, UK.

DEVICE AND SENSORS DESIGN · *Chair: Hyunhyub Ko*

15:30-16:00

Parameterized Inkjet Printing for Computer-Aided Printed Electronics Design

Jimin Kwon, Yongwoo Lee, and Sungjune Jung. Future IT Innovation Laboratory and Department of Creative IT Engineering, Pohang University of Science and Technology (POSTECH), Republic of Korea.

16:00-16:20

Design and Characterization of TFT arrays for ISFET applications

Ashkan Rezaee[1], Simon Ogier[2], Marc Codina[1], Borja Herranz[1], Mohammad Mashayekhi[3], Jordi Carrabina[1]

[1] CEPHIS. Engineering School, Universitat Autònoma de Barcelona, Spain.[2] Neudrive Ltd., UK. [3] Eurecat, Barcelona, Spain.

16:20-16:40

High gain depletion-load amplifiers based on source-gated transistors

Eva Besterlink and Radu Sporea

Advanced Technology Institute, University of Surrey, Guildford, United Kingdom.

20:30 GALA DINNER

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July 10 2019

9:00-13:00 Registration

CHARACTERIZATION AND PARAMETER EXTRACTION · *Chairs: Myun-Gil Kim and Fabrizio Torricelli*

09:30-10:00
Design and Modelling of Field-Coupled TFTs for Sensor Applications
Kai Wang. Key Laboratory of Display Material and Technology, State Key Laboratory of Optoelectronic Materials and Technologies, School of Electronics and Information Technology, Sun Yat-sen University, Guandong, China.

10:00-10:30
Characterization and Benchmarking of Organic and Emerging Material Thin-Film Transistors from Application Perspectives
Xiaojun Guo. Department of Electronic Engineering, Shanghai Jiao Tong University, Shanghai, China.

10:30-11:00
How to extract interface and bulk trap states in thin film transistor
Ling Li. Key Laboratory of Microelectronic Devices and Integrated Technology, Institute of Microelectronics of the Chinese Academy of Sciences, Beijing, China.

11:00-11:30 Coffee Break

11:30-12:00
Dependence with illumination of the contact region of organic phototransistors.
A. Romero, J. González (Universidad de Granada), M. J. Deen (McMaster University), and J. A. Jiménez-Tejada (Universidad de Granada)

12:00-12:20
Analysis and parameter extraction in I-V characteristics in high mobility OTFTs from 150K to 350K
H. Cortes-Ordoñez[1], K. Romanjek[2], G. Ghibaudo[3], X. Mescot[3] and B.Iñiguez[1]
[1]Universitat Rovira i Virgili, Tarragona, Spain.
[2]CEA-Liten, Grenoble, France.
[3]IMEP-LAHC MINATEC/INPG, Grenoble, France.

12:20-12:40
Low Frequency Noise (LFN) Characterization of High Mobility Polymeric OTFT devices
Wondwosen E. Muhea[1], K. Romanjek [2], X. Mescot[3], C. G. Theodorou[3], M. Charbonneau[2], F. Mohamed[4], G. Ghibaudo[3] and B. Iñiguez[1]
[1]Department of Electrical, Electronics, and Automachine Engineering, Universitat Rovira i Virgili, Tarragona, Spain. [2]Université Grenoble Alpes, CEA-LITEN, Grenoble, France.

[3]IMEP-LAHC, Univ. Grenoble Alpes, Univ. Savoie Mont Blanc, CNRS, Grenoble INP, Grenoble, France. [4]Silvaco France, Montbonnot St Martin, France.

12:40-13:00

An Improved Measurement Technique for the Characterization of Organic Thin Film Transistors

G. Dharbandy[1], C. Roemer[1], J. Pruefer[1], J. Leise[1], A. Kloes[1]
[1]NanoP, TH Mittelhessen University of Applied Sciences, Giessen, Germany.

13:00-14:30 Lunch

COMPACT MODELING · *Chairs: Slobodan Mijalkopvic and Magali Estrada*

14:30-15:00

DC and AC Modeling of Amorphous Oxide Semiconductor Thin Film Transistors

Antonio Cerdeira, SEES, Depto. de Ingeniería Eléctrica, CINVESTAV-IPN, Av. IPN 2208, CP 07360, Mexico City, Mexico.

15:00-15:30

Compact Physical-based Drain-Current Model of a-IGZO TFTs for Circuit Simulation

Fabrizio Torricelli. Department of Information Engineering, University of Brescia, via Branze 38, 25123 Brescia, Italy.

15:30-15:50

Validity of Extended Gaussian Disordered Model for OFETs application

Yongjeong Lee[1], Sungyeop Jung[2], Gilles Horowitz[1] and Yvan Bonnassieux[1]
[1] LPICM, CNRS UMR 7647, Ecole polytechnique, IPParis, Palaiseau, France
[2] i-LAB, Pohang University of Science and Technology (POSTECH), Pohang, Korea.

15:50-16:10

Verification of a Charge-Based Capacitance Model for Staggered Organic Thin-Film Transistors

Jakob Simon Leise [1,2], Jakob Prüfer [1,2], Ghader Darbandy [1], Masoud Seifaei [3], Yiannos Manoli [3], Hagen Klauk [4], Benjamin Iñíguez [2] and Alexander Kloes [1]
[1] NanoP, TH Mittelhessen University of Applied Sciences, Giessen, Germany.
[2]DEEEA, Universitat Rovira i Virgili, Tarragona, Spain.
[3]Fritz Huettinger Chair of Microelectronics, IMTEK, University of Freiburg, Germany.
[4]Max-Planck-Institute for Solid State Research, Stuttgart, Germany.

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16:10-16:30

Analytical Model for V_T,roll-off and DIBL Effect in Short Channel Staggered Organic Thin-Film Transistors

Jakob Prüfer [1,2], Jakob Simon Leise [1,2], Ghader Darbandy[1], James W. Borchert [3,4], Hagen Klauk[3], Benjamin Iñíguez [2], Thomas Gneiting [5] and Alexander Kloes[1]

[1]NanoP, TH Mittelhessen University of Applied Sciences, Giessen, Germany. [2]DEEEA, Universitat Rovira i Virgili, Tarragona, Spain. 3Max Planck Institute for Solid State Research, Stuttgart, Germany. 4Functional Polymers, Institute of Polymer Chemistry, Universität Stuttgart.

16:30-16:40 Closure of the CAD-TFT workshop

With the collaboration of: Diputació Tarragona

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