2018 International Conference on Simulation of Semiconductor Processes and Devices (SISPAD 2018)

Austin, Texas, USA
24 – 26 September 2018

IEEE

IEEE Catalog Number: CFP18SSD-POD
ISBN: 978-1-5386-6791-0

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IEEE Catalog Number:	CFP18SSD-POD
ISBN (Print-On-Demand):	978-1-5386-6791-0
ISBN (Online):	978-1-5386-6790-3
ISSN:	1946-1569

Additional Copies of This Publication Are Available From:

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Program

Monday, September 24

Light breakfast (Zlotnik Family Ballroom 4 & 5 pre-function) 7:30 – 8:30

Session 1: Plenary (Zlotnik Family Ballroom 4)

Chairperson
Victor Moroz (Synopsys, USA)

8:30 – 8:40 Welcome and Opening Remarks
Leonard F. Register (SISPAD 2018 Conference General Chair, and The University of Texas at Austin, USA)

1.1 8:40 – 9:30 ***Plenary Talk*: Atomistic Simulations, Tools to Gain Fundamental Understanding in Materials And Device Properties** ..... N/A
Geoffrey Pourtois (IMEC, Belgium)

Break with snacks (Zlotnik Family Ballroom 4 & 5 pre-function) 9:30 – 9:50

Session 2: Quantum Transport (Zlotnik Family Ballroom 4)

Chairpersons
Sayed Hasan (Intel, USA)
Pierpaolo Palestri (University of Udine, Italy)

2.1 9:50 – 10:10 **Simulation of Quantum Current in Double Gate MOSFETs: Vortices in Electron Transport** **1**
P. B. Vyas[1], M. L. Van de Put[2], and M. V. Fischetti[1,2] ([1]Department of Electrical Engineering and [2]Department of Materials Science and Engineering, The University of Texas at Dallas, USA)

2.2 10:20 – 10:30 **Nonequilibrium Green's Function Method: Büttiker Probes for Carrier Generation and Recombination** **5**
Kuang-Chung Wang, Yuanchen Chu, Daniel Valencia, Junzhe Geng, James Charles, Prasad Sarangapani, and Tillmann Kubis (Electrical and Computer Engineering, Purdue University, USA)

2.3 10:30 – 10:50 **Electron-only Explicit Screening Quantum Transport Model for Semiconductor Nanodevices** **9**
Yuanchen Chu, Prasad Sarangapani, James Charles, Gerhard Klimeck and Tillmann Kubis (Network for Computational Nanotechnology, Purdue University, USA)

Lunch (Tejas Dining Room) 11:50 – 1:10

Session 4: Design-Technology Co-Optimization (Zlotnik Family Ballroom 4)

Chairpersons
Daniel Connelly (Atomera, USA)
Myung-Hee Na (IBM, USA)

Session 5: First Principles Analysis (Zlotnik Family Ballroom 5)

Chairpersons
Geoffrey Pourtois (IMEC, Belgium)
Mathieu Luisier (ETH Zurich, Switzerland)

Session 7: Memory I (Zlotnik Family Ballroom 5)

Chairpersons
Seong-Dong Kim (SK Hynix, Korea)
Uihui Kwon (Samsung, Korea)

Tuesday, September 25

Light Breakfast (Zlotnik Family Ballroom 4 & 5 pre-function) 7:30 – 8:30

Session 8: Plenary (Zlotnik Family Ballroom 4)

Chairperson
David Esseni (University of Udine, Italy)

8:30 – 8:40 SISPAD 2019 announcement
David Esseni (SISPAD 2019 Conference Chair and University of Udine, Italy)

Break with snacks (Zlotnik Family Ballroom 4 & 5 pre-function) 9:30 – 9:50

Session 9: Negative Capacitance FETs and Tunneling FETs (Zlotnik Family Ballroom 4)

Chairpersons
Daniel Connelly (Atomera, USA)
Juan Duarte (University of California, Berkeley, USA)

Session 10: Power Switches and Thermal Analysis (Zlotnik Family Ballroom 5)

Chairpersons
Aaron Thean (National University of Singapore, Singapore)
Anh-Tuan Pham (Samsung, USA)

Lunch (Tejas Dining Room) 11:40 – 1:00

Session 11: Reliability (Zlotnik Family Ballroom 4)

Chairpersons
Sudarshan Narayanan (GlobalFoundries, USA)
Lado Filipovic (Technical University, Wien, Austria)

Session 12: Memory II (Zlotnik Family Ballroom 5)

Chairpersons
Geert Eneman (IMEC, Belgium)
Andrea Ghetti (Micron, Italy)

Break with snacks (Zlotnik Family Ballroom 4 & 5 pre-function) 2:20 – 2:40

Session 13: Transistor Design and Optimization (Zlotnik Family Ballroom 4)

Chairpersons
Phil Oldiges (IBM, USA)
Francis Benistant

Session 14: Advanced Transport Modeling (Zlotnik Family Ballroom 5)

Chairpersons
Denis Rideau (STMicroelectronics, Inc., France)
William Vandenberghe (University of Texas at Dallas, USA)

Break 4:10 – 4:40

Poster Session (Rowling Hall, Guadalupe Room)

Conference Dinner (Zlotnik Family Ballroom 5)

6:30 – … Plated Dinner

Wednesday, September 26

Light Breakfast (Zlotnik Family Ballroom 4 & 5 pre-function) 7:30 – 8:30

Session 15: Plenary (Zlotnik Family Ballroom 4)

Chairperson
Leonard F. Register (The University of Texas at Austin, USA)

15.1 8:30 – 9:20 ***Plenary Talk*: Novel Materials + Novel Integration = Novel Electronics** ..... **N/A**
Aaron Thean (National University of Singapore, Singapore)

Break (Zlotnik Family Ballroom 4 & 5 pre-function) 9:20 – 9:40

Session 16: Advanced Technology Analysis (Zlotnik Family Ballroom 4)

Chairpersons
Jürgen Lorenz (Fraunhofer IISB, Germany)
Guangrui (Maggie) Xia (University of British Columbia, Vancouver, Canada)

16.1 9:40 – 10:10 ***Invited Talk*: Experiments and Modeling of Mass Transport Phenomena in SiGe Devices** ..... N/A
Guangrui (Maggie) Xia (University of British Columbia, Vancouver, Canada)

16.2 10:10 – 10:30 **Topography Simulation of 4H-SiC-Chemical-Vapor-Deposition Trench Filling Including an Orientation-Dependent Surface Free Energy** **331**
Kazuhiro Mochizuki, S. Ji, R. Kosugi, Y. Yonezawa, and H. Okumura (National Institute of Advanced Industrial Science and Technology (AIST), Japan)

16.3 10:30 – 10:50 **Steady-State Empirical Model for Electrical Activation of Silicon-Implanted Gallium Nitride** **336**
Alexander Toifl[1], V. Simonka[1], A. Hossinger[2], S. Selberherr[1], and J. Weinbub[1] ([1]Technical University of Vienna, Austria, [2]Silvaco Europe, Cambridge, UK)

16.4 10:50 – 11:10 **Technique for Asymmetric Source/Drain Resistance Extraction on a Single Gate Length MOSFET** **340**
Phil Oldiges[1], C. Zhang[2], X. Miao[2], M. Kang[3], and T. Yamashita[2] ([1]IBM Research, Yorktown Heights, NY, USA, [2]IBM Research, Albany, NY, USA, [3]Samsung, Albany, NY, USA)

16.5 11:10 – 11:30 **N7 FinFET Self-Aligned Quadruple Patterning Modeling** **344**
Sylvan Baudot[1], S. Guissi[2], A.P. Milenin[1], J. Ervin[2], and T. Schram[1] ([1]IMEC, Leuven, Belgium, [2]Coventor, Villebon sur Yvette, France)

16.6 11:30 – 11:50 **Dynamical Space Partitioning for Acceleration of Parallelized Lattice Kinetic Monte Carlo Simulations** **348**
Takeshi Nishimatsu[1], A. Payet[2], B. Lee[3], Y. Kayama[1], K. Ishikawa[1], A. Schmidt[2], I. Jang[2], and D.S. Kim[2] ([1]Samsung, Yokohama, Japan, [2]Samsung, Hwaseong-si, Korea, [3]Samsung, San Jose, CA, USA)

Session 17: Interaction of Transistors and Circuits (Zlotnik Family Ballroom 5)

Chairpersons
Philippe Matagne (IMEC, Belgium)
Azad Naeemi (Georgia Tech. University, Atlanta, USA)

Lunch (Tejas Dining Room) 11:50 – 1:00

Conference Ends