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Michel Declercq **Yusuf Leblebici**

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Place: **Miles Davis Hall**
Co-Chairs: **Kristin De Meyer; *IMEC***
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Place: **Room A401**
Co-Chairs: **Henryk Przewlocki; *Institute of Electron Technology***
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Time: **Tuesday, September 19, 2006, 11:10 - 12:30**
Place: **Miles Davis Hall**
Co-Chairs: **Romuald Beck; *Warsaw University of Technology***
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A4L-H MEMS & Sensors

Time: **Tuesday, September 19, 2006, 11:10 - 12:30**
Place: **Room A401**
Co-Chairs: **Jacek Baborowski; *CSEM***
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Time: **Tuesday, September 19, 2006, 16:10 - 17:50**
Place: **Miles Davis Hall**
Co-Chairs: **Arnaud Pouydebasque; *Philips, Crolles***
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A8L-H Advanced Transport Models for Nanoscale Devices

Time: **Tuesday, September 19, 2006, 16:10 - 17:50**
Place: **Room A401**
Co-Chairs: **Bernd Meinerzhagen; *Technische Universitat Braunschweig***
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Time: **Tuesday, September 19, 2006, 16:10 - 17:50**
Place: **Room A402**
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B2L-G Carbon Nanotubes

Time: **Wednesday, September 20, 2006, 09:50 - 11:10**
Place: **Miles Davis Hall**
Co-Chairs: **Jacques Gautier; *LETI***
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Time: **Wednesday, September 20, 2006, 09:50 - 11:10**
Place: **Room A401**
Co-Chairs: **Giorgio Baccarani; *Università di Bologna***
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Time: **Wednesday, September 20, 2006, 11:10 - 12:30**
Place: **Miles Davis Hall**
Co-Chairs: **Stephen Hall; *The University of Liverpool***
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B4L-H Fluctuation/Variations

Time: **Wednesday, September 20, 2006, 11:10 - 12:30**
Place: **Room A401**
Co-Chairs: **Luc Harpeslagh; *0***
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B8L-G High Voltage Devices

Time: **Wednesday, September 20, 2006, 16:10 - 17:50**
Place: **Miles Davis Hall**
Co-Chairs: **Joachim Burghartz; *Institue for Microelectronics, Stuttgart***
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B8L-H Innovative Injection & Transport Devices

Time: **Wednesday, September 20, 2006, 16:10 - 17:50**
Place: **Room A401**
Co-Chairs: **Emmanuel Dubois; *Université des Sciences et Technologies de Lille***
Erich Kasper; *Universität Stuttgart*

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B8L-J Compact Models & Applications

Time: **Wednesday, September 20, 2006, 16:10 - 17:50**
Place: **Room A402**
Co-Chairs: **Raphael Clerc; *IMEP***
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C2L-G Imagers & Light Emitting Devices

Time: **Thursday, September 21, 2006, 09:50 - 11:10**
Place: **Miles Davis Hall**
Co-Chairs: **Eugenio Cantatore; *Philips***
Roland Thewes; *Infineon*

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Alberto Tosi, Sergio Cova, Franco Zappa, Politecnico di Milano; Mark Itzler, Rafael Ben-Michael, Princeton Lightwave Inc.

10:50
9114 **Improved Organic Light-Emitting Devices with Tunable IV by Inserting a Hole-Blocking Layer Between Hole-Injecting Layer and Hole-Transporting Layer** 339
Yoga Divayana, Nanyang Technological University Singapore; Baijun Chen, Xiaowei Sun, Nanyang Technological University; Guo-Qiang Lo, Institute of Microelectronics; Kalluri Sarma, Honeywell USA

C2L-H Process Integration

Time: **Thursday, September 21, 2006, 09:50 - 11:10**
Place: **Room A401**
Co-Chairs: **Franck Arnaud; *ST Microelectronics***
Carlos Mazure; *Soitec, Bernin, France*

09:50
9353 **Highly Reliable Tin/ZrO2/TiN 3D Stacked Capacitors for 45 nm Embedded DRAM Technologies** **343**
Audrey Berthelot, Philips Semiconductors; Christian Caillat, STMicroelectronics; Vincent Huard, Philips Semiconductors; Sebastien Barnola, CEA-LETI; Bruce Boeck, Helene Del-Puppo, Freescale Semiconductor, Inc.; Nicolas Emonet, Frederic Lalanne, STMicroelectronics

10:10
9157 **High Performance 65nm SOI Transistors Using Laser Spike Annealing** **347**
Tenko Yamashita, Philip A. Fisher, Oleg Gluschenkov, Hideki Kimura, Ravikumar Ramachandran, Anda C. Mocuta, Jon Kluth, Takahiro Kawamura, Katsunori Onishi, David Fried, Shreesh Narasimha, David Brown, Sameer Jain, Koji Miyamoto, Greg Freeman+, Sadanand V. Deshpande, Scott Luning, Shih-Fen Huang, John Pellerin, Hideaki Kuroda

10:30
9431 **LASER Anneal to Enable Ultimate CMOS Scaling with PMOS Band Edge Metal Gate/High-K Stacks** **351**
David Gilmer, J.K. Schaeffer, W.J. Taylor, G. Spencer, D.H. Triyoso, M. Raymond, D. Roan, J. Smith, C. Capasso; R.I. Hegde, Freescale Semiconductor, Inc.

10:50
9503 **Superior N- and PMOSFET Scalability Using Carbon Co-Implantation and Spike Annealing** **355**
Emmanuel Augendre, IMEC; Bartek Pawlak, Philips; Stefan Kubicek, Thomas Hoffmann, T. Chiarella, C. Kerner, S. Severi, A. Falepin, J. Ramos, A. De Keersgieter, P. Eyben, D. Vanhaeren, W. Vandervorst, M. Jurczak, P. Absil and S. Biesemans, IMEC

C2L-J Carrier Mobility in Multi-Gate Devices

Time: **Thursday, September 21, 2006, 09:50 - 11:10**
Place: **Room A402**
Co-Chairs: **Lothar Risch; *Infineon***
Thomas Skotnicki; *STM*

09:50
9403 **Local Volume Inversion and Corner Effects in Triangular Gate-All-Around MOSFETs** **359**
Kirsten Emilie Moselund, Didier Bouvet, Lucas Tschuor, Vincent Pott, Paolo Dainesi, Adrian Ionescu, EPFL

10:10
9442 **Effective Mobility Extraction Based on a Split RF C-V Method for Short-Channel FinFETs** **363**
Javier Ramos, Simone Severi, Christoph Kerner, Thomas Chiarella, Axel Nackaerts, Thomas Hoffmann, Nadine Collaert, Malgorzata Jurczak, Serge Biesemans; IMEC

10:30
9593 **Experimental Evidence of Mobility Enhancement in Short-Channel Ultra-Thin Body Double-Gate MOSFETs** **367**
Wipa Chaisantikulwat, Mireille Mouis, Gerard Ghibaudo, Sorin Cristoloveanu, IMEP; Julie Widiez, Maud Vinet, Simon Deleonibus, CEA-LETI

C4L-G Innovative Multigate Devices

Time: **Thursday, September 21, 2006, 11:10 - 12:30**
Place: **Miles Davis Hall**
Co-Chairs: **Thomas Ernst;** ***LETI***
Malgorzata Jurczak; ***IMEC***

11:10
9148 **Design Considerations and Comparative Investigation of Ultra-Thin SOI, Double-Gate and Cylindrical Nanowire Fets** **371**
Elena Gnani, Susanna Reggiani, Massimo Rudan, Giorgio Baccarani, University of Bologna

11:30
9177 **Experimental Evidence for Reduction of Gate Tunneling Current in FinFET Structures and its Dependence on the Fin Width** **375**
Tamara Rudenko, National Academy of Sciences of Ukraine; Valeria Kilchytska, Université catholique de Louvain; Nadine Collaert, IMEC; Alexey Nazarov, National Academy of Sciences of Ukraine; Malgorzata Jurczak, IMEC; Denis Flandre, Université catholique de Louvain

11:50
9568 **High Threshold Voltage Matching Performance on Gate-All-Around MOSFET** **379**
Augustin Cathignol, Antoine Cros, STMicroelectronics; Samuel Harrison, Philips Semiconductors; Robin Cerrutti, Philippe Coronel, STMicroelectronics; Arnaud Pouydebasque, Krysten Rochereau, Philips Semiconductors; Thomas Skotnicki, STMicroelectronics; Gerard Ghibaudo; IMEP

12:10
9461 **Double Gate Tunnel FET with Ultrathin Silicon Body and High-K Gate Dielectric** **383**
Kathy Boucart, Adrian Ionescu, EPFL

C4L-H High-K & Low-K Dielectrics

Time: **Thursday, September 21, 2006, 11:10 - 12:30**
Place: **Room A401**
Co-Chairs: **Judith Mueller;** ***Freescale***
Luca Selmi; ***Universita degli Studi di Udine***

11:10
9215 **A Novel Bias Temperature Instability Characterization Methodology for High-K MOSFETs** **387**
Dawei Heh, Gennadi Bersuker, Rino Choi, Chadwin Young, Byoung Lee, Sematech

11:30
9612 **Investigation of the High Temperature Stability of TiN-Al2O3-TiN Capacitors for Sub 50nm Deep Trench DRAM** **391**
Tim Böscke, Stephan Kudelka, Annette Sänger, Infineon Technologies SC300 GmbH; Jörg Müller, TU Hamburg-Harburg; Wolfgang Krautschneider, Hamburg University of Technology

11:50
9346 **Cross-Wafer Controlled Interface Layer Thickness Variation, and its Application to SiO2 / High-k Stack Characterisation** **395**
Barry O'Sullivan, IMEC & KU Leuven; Vidya Kaushik, Freescale assignee at IMEC; Lars-Åke Ragnarsson, IMEC; Lionel Trojman, IMEC & KU Leuven; Bart Onsia, Nausikaa Van Hoornick, Erika Rohr, IMEC; Stefan Degendt, IMEC & KU Leuven; Marc Heyns; IMEC

12:10
9256 **The Analysis of Dielectric Breakdown in Cu/Low-k Interconnect System** **399**
Nam Hwang, Institute of Microelectronics; Tam Lyn Tan, Nanyang Technological University; Cheng Kuo Cheng, Institute of Microelectronics; Chee Lip Gan, Nanyang Technological University; An Yan Du, Dim Lee Kwong, Institute of Microelectronics

C8L-G DRAM & Flash Memory

Time: **Thursday, September 21, 2006, 16:10 - 17:50**
Place: **Miles Davis Hall**
Co-Chairs: **Stefan Bengtsson; *Chalmers University of Technology***
Guido Groeseneken; *IMEC*

16:10
9349 **Does Multi-Trap Assisted Tunneling Explain the Oxide Thickness Dependence of the Statistics of SILC in Flash Memory Arrays?** **403**
Elisa Vianello, Francesco Driussi, David Esseni, Luca Selmi, University of Udine; Michiel van Duuren, Frans Widdershoven, Philips Research Leuven

16:30
9272 **A Study of the As-Processed and Generated Leakage Paths in Al2O3-Based Dielectric Stacks for Nonvolatile Memory Applications** **407**
Daniel Ruiz Aguado, Bogdan Govoreanu, Robin Degraeve, Jan Van Houdt, Kristin De Meyer, IMEC

16:50
9221 **Detection of Single-Electron Transfer Events and Capacitance Measurements in Submicron Floating-Gate Memory Cells** **411**
Yuri Tkachev, Silicon Storage Technology, Inc.; Alexander Kotov, SST

17:10
9251 **Reliability of Recess-Channel Gate Cell Transistor Under Gate-Induced Drain Leakage Stress and Positive Bias Fowler-Nordheim Gate Stress** **415**
Heung-Jae Cho, Yong Soo Kim, Se-Aug Jang, Tae-Yoon Kim, Kwan-Yong Lim, Min Gyu Sung, Moon Sig Joo, Seun Rryong Lee, Hong-Seon Yang; Jin-Woong Kim, Hynix Semiconductor Inc.

17:30
9544 **Fast Kerf- and Tester-Compatible Method for RC Characterization of DRAM Memory Cells** **419**
Jens Sauerbrey, Infineon Technologies AG; Birgit Holzapfl, Marcus Unertl, Theo Haywood, Erdmute Wohlrab, Infineon Technologie AG; Alexander Frey, Siemens AG; Roland Thewes, Infineon Technologies AG

C8L-H Emerging Materials & Devices

Time: **Thursday, September 21, 2006, 16:10 - 17:50**
Place: **Room A401**
Co-Chairs: **Olof Engström; *LETI***
Joseph Tringe; *Lawrence Livermore National Laboratory*

16:10
9400 **Non-Linear Gate Length Dependence of On-Current in Si-Nanowire FETs** **423**
Walter Michael Weber, Andrew Graham, Georg Duesberg, Maik Liebau, Lutz Geelhaar, Qimonda Dresden GmbH & Co.; Eugen Unger, Henning Riechert, Franz Kreupl, Qimonda AG; Paolo Lugli; Technische Universität München

16:30
9582 **Low Temperature Single Electron Characteristics in Gate-All-Around MOSFETs** **427**
Vincent Pott, Didier Bouvet, Julien Boucart, Lucas Tschuor, Kirsten Emilie Moselund, Adrian Ionescu, EPFL

16:50
9467 **Thermoelectric and Thermionic Micro-Converters** **431**
York Christian Gerstenmaier, Siemens AG; Gerhard Wachutka, Munich University of Technology

17:10
9059 **Semi-Insulating Czochralski-Silicon for Radio Frequency Applications** **435**
Kanad Mallik, Cornelis de Groot, Peter Ashburn, University of Southampton; Peter Wilshaw, University of Oxford

17:30
9607 **Fluoride Resonant Tunneling Diodes Using Lattice-Matched Buffer Layers on Si Substrates** **439**
Kazuo Tsutsui, Tokyo Isntitute of Technology; Natsuko Matsudo, Tokyo Institute of Technology; Motoki Maeda, Kochi Univ. of Technology; So Watanabe, Tokyo Institute of Technology

C8L-J Modeling of Gate Stacks & Dielectrics

Time: **Thursday, September 21, 2006, 16:10 - 17:50**
Place: **Room A402**
Co-Chairs: **Herve Jaouen; *ST Microelectronics***
Grasser Tibor; *TU Wien*

16:10
9410 **Validity of the Flat Band Perturbation Technique in Non-Ohmic Region** **443**
Ananda Roy, EPFL; Christian Enz, CSEM

16:30
9150 **Model for Electron Redistribution in Silicon Nitride** **447**
Arnaud Furnémont, Maarten Rosmeulen, Jan Van Houdt, Kristin De Meyer, Herman Maes, IMEC

16:50
9317 **Impact of Fermi Level Pinning at Polysilicon Gate Grain Boundaries on Nano-MOSFET Variability: A 3-D Simulation Study** **451**
Andrew Brown, Gareth Roy, Asen Asenov, University of Glasgow

17:10
9411 **Analytical Modelling of Large Signal Cyclo-Stationary Low Frequency Noise for Arbitrary Periodic Input** **455**
Ananda Roy, EPFL; Christian Enz, CSEM

17:30
9263 **Temperature Dependent Dielectric Absorption of MIM Capacitors: RF Characterization and Modeling** **459**
Philipp Riess, Peter Baumgartner, Infineon Technologies