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PROGRAM

September 9

9:00–9:10 Opening and Welcome Remarks
N. Mori (*Osaka Univ., Japan*)

Session 1: Plenary

Chairpersons: K. Sonoda (*Renesas Electronics, Japan*)
M. Stettler (*Intel, USA*)

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"Physics of Electronic Transport in Low-Dimensionality Materials for Future FETs"
M.V. Fischetti[1], W.G. Vandenberghe[1], B. Fu[1], S. Narayanan[1], J. Kim[1], Z.-Y. Ong[1], A. Suarez-Negreira[1], C. Sachs[1], and S.J. Aboud[2] ([1]*Univ. Texas Dallas, USA*, [2]*Stanford Univ., USA*) 1

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"Current Status and Future Prospects of Non-Volatile Memory Modeling"
A. Benvenuti[1], A. Ghetti[1], A. Mauri[1], H. Liu[2], and C. Mouli[2]
([1]*Micron Technology, Italy*, [2]*Micron Technology, USA*) 5

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K. Hamada (*Toyota Motor Corporation, Japan*) 9

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N. Goldsman (*Univ. Maryland, USA*)

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T. Wada (*Samsung, Japan*)

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P. Dorion[1,2], O. Cueto[1], M. Reyboz[1], J.C. Barbé[1], A. Grigoriu[3], and Y. Maday[2]
([1]*CEA-Leti, France,* [2]*UPMC, France,* [3]*Univ. Paris Diderot, France*) 33

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([1]*Univ. Modena and Reggio Emilia, Italy,* [2]*Stanford Univ., USA*) 37

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C.-K. Lin (*TSMC, Taiwan*)

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C. Sandow[1], R. Baburske[1], F.-J. Niedernostheide[1], F. Pfirsch[1], and C. Töchterle[2]
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([1]*Univ. Maryland, USA,* [2]*U.S. Army Research Lab., USA*) 61

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([1]*Univ. Texas Austin, USA,* [2]*SEMATECH, USA*) 73

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([1]*TU Wien, Austria,* [2]*Ioffe Phys. Tech. Inst., Russia,* [3]*imec, Belgium*) 89

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September 11

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T. Grasser (*TU Wien, Austria*)

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([1]*Fraunhofer IISB, Germany,* [2]*Univ. Glasgow, UK,* [3]*Gold Standard Simulations Ltd., UK*) 289

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([1]*Stanford Univ., USA,* [2]*Intel Corporation, USA*) 301

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"Unifying Self-heating and Aging Simulations with TMI2"
W.-K. Lee, K. Huang, J. Liang, J.-Y. Chen, C. Hsiao, K.-W. Su, C.-K. Lin, and M.-C. Jeng (*TSMC, Taiwan*) 333

13-2 13:50–14:10

"New Perspective on Lifetime Prediction Approach for BTI and HCI Stressed Device and Its Impact on Circuit Lifetime"
M.-C. Park[1,2], G.-Y. Yang[1], J.-S. Yang[2], K.-H. Lee[1], and Y.-K. Park[1]
([1]*Samsung Electronics, Korea,* [2]*Sungkyunkwan Univ., Korea*) 337

13-3 14:10–14:30

"Three-Dimensional Simulation for the Reliability and Electrical Performance of Through-Silicon Vias"
L. Filipović[1], F. Rudolf[1], E. Bär[2], P. Evanschitzky[2], J. Lorenz[2], F. Roger[3], A. Singulani[3], R. Minixhofer[3], and S. Selberherr[1] ([1]*TU Wien, Austria,* [2]*Fraunhofer IISB, Germany,* [3]*ams AG, Austria*) 341

13-4 14:30–14:50

"High-Accuracy Estimation of Soft Error Rate using PHYSERD with Circuit Simulation"
T. Kato, T. Uemura, and H. Matsuyama (*Fujitsu Semiconductor Ltd., Japan*) 345

14:50–15:10 *Coffee Break*

Session 14: Frontier of Simulation Methodology and Application

Chairpersons: S. Uno (*Ritsumeikan Univ., Japan*)
J. Lorenz (*Fraunhofer Institut IISB, Germany*)

14-1 15:10–15:40 **[invited talk]**

"Novel Biosensing Devices for Medical Applications: Soft Contact-Lens Sensors for Monitoring Tear Sugar"
K. Mitsubayashi (*Tokyo Medical and Dental Univ., Japan*) 349

14-2 15:40–16:00

"A Technique to Model the AC Response of Diffuse Layers at Electrode/Electrolyte Interfaces and to Efficiently Simulate Impedimetric Biosensor Arrays for Many Analyte Configurations"
F. Pittino and L. Selmi (*Univ. Udine, Italy*) 353

14-3 16:00–16:20

"Full-Scale Whole Device EMC/MD Simulation of Si Nanowire Transistor Including Source and Drain Regions by Utilizing Graphic Processing Units"
A. Suzuki[1], T. Kamioka[2], Y. Kamakura[3], and T. Watanabe[1]
([1] *Waseda Univ., Japan,* [2] *Toyota Tech. Inst., Japan,* [3] *Osaka Univ., Japan*) 357

14-4 16:20–16:40

"Quantum Transport in NEMO5: Algorithm Improvements and High Performance Implementation"
Y. He, T. Kubis, M. Povolotskyi, J. Fonseca, and G. Klimeck (*Purdue Univ., USA*) 361

14-5 16:40–17:00

"Cell-Centered Finite Volume Schemes for Semiconductor Device Simulation"
K. Rupp, M. Bina, Y. Wimmer, A. Jüngel, and T. Grasser (*TU Wien, Austria*) 365

17:00–17:10 Closing
N. Mori (*Osaka Univ., Japan*)