

2017 Fifth Berkeley Symposium on Energy Efficient Electronic Systems & Steep Transistors Workshop (E3S 2017)

**Berkeley, California, USA
19-20 October 2017**



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University of California, Berkeley
Berkeley, CA
October 19-20, 2017

Presentations

- 1 *Roadmap Evolution: From NTRS to ITRS, from ITRS 2.0 to IRDS*
Paolo Gargini (IRDS, USA) invited
- 104 *Sub-unity Body Factor: The Next CMOS and Beyond CMOS Technology Booster for Enhanced Energy Efficiency?*
A. Ionescu (Ecole Polytechnique Fédérale Lausanne, Switzerland) invited
- N/A *N3XT 3D Nanosystems for Energy-Efficient Abundant-Data Computing*
S. Mitra (Stanford University, USA) invited
- 90 *Standby-Power-Free Integrated Circuits Using MTJ-Based VLSI Computing for IoT Applications*
T. Hanyu (Tohoku University, Japan) invited
- N/A *Keynote Presentation: "Building a Platform for AI"*
A. Khosrowshahi (Intel Corporation, USA) invited keynote
- 107 *Memristive Boltzmann Machine: A Hardware Accelerator for Combinatorial Optimization and Deep Learning*
E. Ipek (University of Rochester, USA) and M. N. Bojnordi (University of Utah, USA) invited
- N/A *Advance of Steep Transistors*
A. Seabaugh (University of Notre Dame, USA) invited
- 40 *III-V/Ge-based Tunneling MOSFET*
S. Takagi, D. Ahn, T. Gotow, K. Nishi, T. Bae, T. Katoh, R. Matsumura, R. Takaguchi, K. Kato and M. Takenaka (University of Tokyo, Japan) invited
- 99 *Steep Switch with Hybrid Operation Mechanism for Performance Improvement*
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- N/A *Modeling the Influence of Dielectric Interface Traps on I-V Characteristics of TFETs*
P. Asbeck and J. Ming (University of California, San Diego, USA)
- 143 *Deep Learning with Coherent Nanophotonic Circuits*
Y. Shen, N. C. Harris, D. Englund and M. Soljacic (Massachusetts Institute of Technology, USA) invited

- 79 *Use of Analog Spintronics Device in Performing Neuro-morphic Computing Functions*
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- 153 *An Ising Computing to Solve Combinatorial Optimization Problems*
M. Yamaoka (Hitachi Ltd., Japan) *invited*
- 110 *Technology Breakthrough by Ferroelectric HfO₂ for Ultralow Power Logic and Memory*
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- N/A *Prospects for Ultrafast MRAM with <10 psec Write Latency*
J. Bokor (University of California, Berkeley, USA) *invited*
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- N/A *Integration of Polysilicon-based Photonics in a 12-inch Wafer 65nm Bulk CMOS Process*
V. Stojanovic,¹ S. Moazeni,¹ A. Atabaki,² F. Pavanello,³ H. Gevorgyan,⁴ J. Notaros,² L. Alloatti,² M. Wade,⁵ C. Sun,⁵ S. Kruger,⁶ H. Meng,² K. Al Qubaisi,⁴ I. Wang,⁴ B. Zhang,⁴ A. Khilo,⁴ C. Baicco,⁶ M. Popovic,⁴ and R. Ram² (¹University of California, Berkeley, USA, ²Massachusetts Institute of Technology, USA, ³Ghent University-IMEC, Belgium, ⁴Boston University, USA, ⁵Ayar Labs, Inc., USA, ⁶SUNY Polytechnic Institute, USA)
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L.-E. Wernersson (Lund University, Sweden) *invited*

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A. Verhulst,¹ D. Verreck,¹ W. G. Vandenberghe,² Q. Smets,¹ M. Mohammed,^{1,3} J. Bizindavyi,^{1,3} M. M. Heyns,^{1,3} B. Soree,^{1,3,4} N. Collaert,¹ and A. Mocuta¹ (¹IMEC, Leuven, Belgium, ²Univ. of Texas at Dallas, USA, ³KU Leuven, Belgium, ⁴UAntwerp, Belgium) *invited*
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F. Fischer (University of California, Berkeley, USA)
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