

Makoto Takamiya

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Research Interests

VLSI circuit design, especially

- (1) Integrated power management circuits for wireless powering and energy harvesting for wearable and IoT applications
- (2) Programmable gate driver IC for power transistors (IGBTs)
- (3) Integrated DC-DC converters for energy efficient microprocessors

Education

04/97 – 03/00 **Ph.D.** in Electronic Engineering, University of Tokyo, Japan
04/95 – 03/97 **M.S.** in Electronic Engineering, University of Tokyo, Japan
04/91 – 03/95 **B.S.** in Electronic Engineering, University of Tokyo, Japan

Academic Positions

04/05 – present **Associate Professor** in University of Tokyo, Japan
VLSI Design and Education Center and Institute of Industrial Science
04/13 – 04/14 **Visiting Scholar** in University of California, Berkeley, USA
The Ubiquitous Swarm Lab, Prof. Jan Rabaey

Industry Positions

04/00 – 03/05 **Circuit designer** in NEC Corporation, Japan
Circuit design of high speed digital LSI's

Awards

- [1] IEEE SSCS Kansai Chapter Academic Research Award, IEEE Solid-State Circuits Society Kansai Chapter, 2015.
- [2] Best Paper Award, IEEE Wireless Power Transfer Conference (WPTC), 2013.
- [3] Best Design Award in University LSI Design Contest, Asia-South Pacific Design Automation Conference (ASP-DAC), 2012.
- [4] Paul Rappaport Award 2010 (Best paper in EDS publications), IEEE Electron Devices Society.
- [5] IEEE SSCS Kansai Chapter Academic Research Award, IEEE Solid-State Circuits Society Kansai Chapter, 2011.
- [6] Paul Rappaport Award 2009 (Best paper in EDS publications), IEEE Electron Devices Society.
- [7] IEEE SSCS Kansai Chapter Academic Research Award, IEEE Solid-State Circuits Society Kansai Chapter, 2009.
- [8] SSDM Young Researcher Award, International Conference on Solid State Devices and Materials, 1999.

Professional Activities

- [1] Far East Regional Vice-Chair, IEEE International Solid-State Circuits Conference (ISSCC) (2019)
- [2] Far East Regional Secretary, IEEE International Solid-State Circuits Conference (ISSCC) (2018)
- [3] Member, Technical Program Committee, Power Management Sub-committee, IEEE International Solid-State Circuits Conference (ISSCC) (2018 - 2019)
- [4] Member, Technical Program Committee, Analog Sub-committee, IEEE International Solid-State Circuits Conference (ISSCC) (2015 - 2017)
- [5] Member, Technical Program Committee, IEEE SOI-3D-Subthreshold Microelectronics Technology Unified Conference (IEEE S3S) (2014 - 2018)
- [6] Associate editor, IEICE Electronics Express (ELEX) (2013 - 2015)
- [7] Member, Technical Program Committee, IEEE International 3D Systems Integration Conference (3DIC) (2009 - 2013)
- [8] Member, Technical Program Committee, IEEE Symposium on VLSI Circuits (2009 - 2017)
- [9] Member, Technical Program Committee, Custom Applications and Low Power Techniques Sub-committee (2006), Custom Applications and Power Management Sub-committee (2007), Power Management Sub-committee (2008 - 2011), IEEE Custom Integrated Circuits Conference (CICC) (2006 - 2011)
- [10] Member, Technical Program Committee, Advanced Silicon Circuits and Systems Sub-committee, International Conference on Solid State Devices and Materials (SSDM) (2003 - 2004)

Publications

(A) Book Chapters

- [1] M. Takamiya, K. Ishida, T. Sekitani, T. Someya, and T. Sakurai, "Organic Integrated Circuits for EMI Measurement," in the book entitled, "Stretchable Electronics", Editor: Takao Someya, Wilery-VCH, pp. 431-448, ISBN 978-3527329786, Feb. 2013.
- [2] M. Takamiya, T. Sekitani, K. Ishida, T. Someya, and T. Sakurai, "Large Area Electronics with Organic Transistors," in the book entitled, "Applications of Organic and Printed Electronics", Editor: Eugenio Cantatore, Springer, pp. 101-113, ISBN 978-1461431596, Oct. 2012.
- [3] M. Takamiya, K. Onizuka, K. Ishida, and T. Sakurai, "DC-DC Converter Technologies for On-Chip Distributed Power Supply Systems - 3D Stacking and Hybrid Operation," in the book entitled, "Emerging Technologies and Circuits", Editors: Amara Amara, Thomas Ea, and Marc Belleville, Springer, pp. 221-247, ISBN 978-9048193783, Sep. 2010.
- [4] M. Takamiya, K. Onizuka, and T. Sakurai, "AC Coupled Wireless Power Delivery," in the book entitled, "Coupled Data Communication Techniques for High-Performance and Low-Power Computing", Editors: Ron Ho and Robert Drost, Springer, pp. 193-204, ISBN 978-1441965875, June 2010.

(B) Journals

- [1] H. Obara, K. Wada, K. Miyazaki, M. Takamiya, and T. Sakurai, "Active Gate Control in Half-Bridge Inverters Using Programmable Gate Driver ICs to Improve Both Surge Voltage and Converter Efficiency," IEEE Transactions on Industry Applications, Vol.54, No.5, pp. 4603 - 4611, Sep./Oct. 2018.
- [2] C.-S. Wu, M. Takamiya, and T. Sakurai, "Clocked Hysteresis Control Scheme With Power-Law Frequency Scaling in Buck Converter to Improve Light-Load Efficiency for IoT Sensor Nodes," IEEE Transactions on Very Large Scale Integration (VLSI) Systems, Vol. 26, No. 6, pp. 1139-1150, June 2018.
- [3] Y. Uno, H. Qiu, T. Sai, S. Iguchi, Y. Mizutani, T. Hoshi, Y. Kawahara, Y. Takehi, and M. Takamiya, "Luciola: A Millimeter-Scale Light-Emitting Particle Moving in Mid-Air Based On Acoustic Levitation and Wireless Powering," Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT), Volume 1, Issue 4, Article No. 166, 17 pages, Dec. 2017.
- [4] S. Iguchi, T. Sakurai, and M. Takamiya, "A Low-Power CMOS Crystal Oscillator Using a Stacked-Amplifier Architecture," IEEE Journal of Solid-State Circuits, Vol.52, No.1, pp. 3006 - 3017, Nov. 2017.

- [5] K. Miyazaki, S. Abe, M. Tsukuda, I. Omura, K. Wada, M. Takamiya, and T. Sakurai, "General-Purpose Clocked Gate Driver IC With Programmable 63-Level Drivability to Optimize Overshoot and Energy Loss in Switching by a Simulated Annealing Algorithm," *IEEE Transactions on Industry Applications*, Vol.53, No.3, pp. 2350 - 2357, May/June 2017.
- [6] T. Someya, H. Fuketa, K. Matsunaga, H. Morimura, T. Sakurai, and M. Takamiya, "Design and Analysis of Ultra-Low Power Glitch-Free Programmable Voltage Detector Based on Multiple Voltage Copier," *IEICE Transaction on Electronics*, Vol.E100-C, No.4, pp. 349 - 358, April 2017.
- [7] A. K. M. M. Islam, M. Hamamatsu, T. Yokota, S. Lee, W. Yukita, M. Takamiya, T. Someya, and T. Sakurai, "Programmable Neuron Array Based on a 2-Transistor Multiplier Using Organic Floating-Gate for Intelligent Sensors," *IEEE Journal on Emerging and Selected Topics in Circuits and Systems*, Vol.7, No.1, pp. 81 - 91, March 2017.
- [8] S. Iguchi, H. Fuketa, T. Sakurai, and M. Takamiya, "Variation-Tolerant Quick-Start-Up CMOS Crystal Oscillator With Chirp Injection and Negative Resistance Booster," *IEEE Journal of Solid-State Circuits*, Vol.51, No.2, pp. 496 - 508, Feb. 2016.
- [9] H. Fuketa, K. Yoshioka, K. Fukuda, T. Mori, H. Ota, M. Takamiya and T. Sakurai, "Design Guidelines to Achieve Minimum Energy Operation for Ultra Low Voltage Tunneling FET Logic Circuits" *Japanese Journal of Applied Physics*, Vol. 54, No. 4S, 04DC04, April, 2015.
- [10] S. Iguchi, P. Yeon, H. Fuketa, K. Ishida, T. Sakurai, and M. Takamiya, "Wireless Power Transfer With Zero-Phase-Difference Capacitance Control," *IEEE Transactions on Circuits and Systems—I: Regular Papers*, Vol. 62, No. 4, pp. 938 - 947, April 2015.
- [11] K. Hagita, Y. Yazaki, Y. Kondo, M. Sonehara, T. Sato, T. Fujii, K. Kobayashi, S. Nakazawa, H. Shimizu, T. Watanabe, Y. Seino, N. Matsushita, Y. Yanagihara, T. Someya, H. Fuketa, M. Takamiya, and T. Sakurai, "CMOS Switch Buck DC-DC Converter Fabricated in Organic Interposer with Embedded Zn-Fe Ferrite Core Inductor," *Journal of the Magnetics Society of Japan*, Vol. 39, No. 2, pp. 71 - 79, March 2015.
- [12] H. Fuketa, K. Yoshioka, Y. Shinozuka, K. Ishida, T. Yokota, N. Matsuhisa, Y. Inoue, M. Sekino, T. Sekitani, M. Takamiya, T. Someya, and T. Sakurai, "1um-Thickness Ultra-Flexible and High Electrode-Density Surface Electromyogram Measurement Sheet With 2 V Organic Transistors for Prosthetic Hand Control," *IEEE Transactions on Biomedical Circuits and Systems*, Vol. 8, No. 6, pp. 824 - 833, Dec. 2014.
- [13] X. Zhang, P. -H. Chen, Y. Okuma, K. Ishida, Y. Ryu, K. Watanabe, T. Sakurai, and M. Takamiya, "A 0.6 V Input CCM/DCM Operating Digital Buck Converter in 40 nm CMOS," *IEEE Journal of Solid-State Circuits*, Vol.49, No.11, pp. 2377 - 2386, Nov. 2014.
- [14] S. Iguchi, A. Saito, K. Watanabe, T. Sakurai, and M. Takamiya, "Design Method of Class-F Power Amplifier with Output Power of -20dBm and Efficient Dual Supply Voltage Transmitter," *IEEE Transactions on Circuits and Systems—I: Regular Papers*, Vol. 61, No. 10, pp. 2978 - 2986, Oct. 2014.
- [15] H. Fuketa, M. Nomura, M. Takamiya, and T. Sakurai, "Intermittent Resonant Clocking Enabling Power Reduction at Any Clock Frequency for Near/Sub-Threshold Logic Circuits," *IEEE Journal of Solid-State Circuits*, Vol.49, No.2, pp. 536-544, Feb. 2014.
- [16] K. Takemura, K. Ishida, Y. Ishii, K. Maeda, M. Takamiya, T. Sakurai, and K. Baba, "Si Interposers with 15-um-thick Spiral Inductors and SrTiO₃ Thin Film Capacitors for Novel 3D Stacked Buck Converters," *Transactions of The Japan Institute of Electronics Packaging*, Vol. 6, No. 1, pp. 78-86, 2013.
- [17] H. Fuketa, R. Takahashi, M. Takamiya, M. Nomura, H. Shinohara, and T. Sakurai, "Increase of Crosstalk Noise Due to Imbalanced Threshold Voltage Between nMOS and pMOS in Subthreshold Logic Circuits," *IEEE Journal of Solid-State Circuits*, Vol. 48, No. 8, pp. 1986-1994, Aug. 2013.
- [18] H. Fuketa, K. Hirairi, T. Yasufuku, M. Takamiya, M. Nomura, H. Shinohara, and T. Sakurai, "Minimizing Energy of Integer Unit by Higher Voltage Flip-Flop: VDDmin-Aware Dual Supply Voltage Technique," *IEEE Transactions on Very Large Scale Integration (VLSI) Systems*, Vol. 21, No. 6, pp. 1175-1179, June 2013.
- [19] K. Ishida, T. -C. Huang, K. Honda, Y. Shinozuka, H. Fuketa, T. Yokota, U. Zschieschang, H. Klauk, G. Tortissier, T. Sekitani, H. Toshiyoshi, M. Takamiya, T. Someya, and T. Sakurai, "Insole Pedometer With

- Piezoelectric Energy Harvester and 2 V Organic Circuits," IEEE Journal of Solid-State Circuits, Vol.48, No.1, pp. 255-264, Jan. 2013.
- [20] K. Mori, H. Lim, S. Iguchi, K. Ishida, M. Takamiya, and T. Sakurai, "Positioning-Free Resonant Wireless Power Transmission Sheet With Staggered Repeater Coil Array (SRCA)," IEEE Antennas and Wireless Propagation Letters, Vol. 11, pp. 1710-1713, Dec. 2012. (Invited)
- [21] R. Takahashi, H. Takata, T. Yasufuku, H. Fuketa, M. Takamiya, M. Nomura, H. Shinohara, and T. Sakurai, "Large Within-Die Gate Delay Variations in Sub-Threshold Logic Circuits at Low Temperature," IEEE Transactions on Circuits and Systems-II, Express Briefs, Vol.59, No.12, pp. 918-921, Dec. 2012.
- [22] T. Yokota, T. Sekitani, T. Tokuhara, N. Take, U. Zschieschang, H. Klauk, K. Takamiya, T. -C. Huang, M. Takamiya, T. Sakurai, and T. Someya, "Sheet-Type Flexible Organic Active Matrix Amplifier System Using Pseudo-CMOS Circuits With Floating-Gate Structure," IEEE Transactions on Electron Devices, Vol. 59, No. 12, pp. 3434 - 3441, Dec. 2012.
- [23] P. -H. Chen, X. Zhang, K. Ishida, Y. Okuma, Y. Ryu, M. Takamiya, and T. Sakurai, "An 80 mV Startup Dual-Mode Boost Converter by Charge-Pumped Pulse Generator and Threshold Voltage Tuned Oscillator With Hot Carrier Injection," IEEE Journal of Solid-State Circuits, Vol. 47, No. 11, pp. 2554-2562, Nov. 2012.
- [24] X. Zhang, K. Ishida, H. Fuketa, M. Takamiya, and T. Sakurai, "On-Chip Measurement System for Within-Die Delay Variation of Individual Standard Cells in 65-nm CMOS," IEEE Transactions on Very Large Scale Integration (VLSI) Systems, Vol. 20, No. 10, pp. 1876-1880, Oct. 2012.
- [25] N. Masunaga, K. Ishida, T. Sakurai, and M. Takamiya, "EMI Camera LSI (EMcam) with On-Chip Loop Antenna Matrix to Measure EMI Noise Spectrum and Distribution," IEICE Transaction on Electronics, E95-C, No.6, pp. 1059-1066, June 2012.
- [26] L. Liu, T. Sakurai, and M. Takamiya, "A 315MHz Power-Gated Ultra Low Power Transceiver in 40nm CMOS for Wireless Sensor Network," IEICE Transaction on Electronics, E95-C, No.6, pp. 1035-1041, June 2012.
- [27] X. Zhang, Y. Pu, K. Ishida, Y. Ryu, Y. Okuma, P. -H. Chen, K. Watanabe, T. Sakurai, and M. Takamiya, "A 1-V-Input Switched-Capacitor Voltage Converter with Voltage-Reference-Free Pulse-Density Modulation," IEEE Transactions on Circuits and Systems-II: Express Briefs, Vol.59, No.6, pp. 361-365, Jun. 2012.
- [28] P. -H. Chen, K. Ishida, K. Ikeuchi, X. Zhang, K. Honda, Y. Okuma, Y. Ryu, M. Takamiya, and T. Sakurai, "Startup Techniques for 95 mV Step-Up Converter by Capacitor Pass-On Scheme and Vth-Tuned Oscillator With Fixed Charge Programming," IEEE Journal of Solid-State Circuits, Vol.47, No.5, pp. 1252-1260, May. 2012.
- [29] K. Ishida, T. -C. Huang, K. Honda, T. Sekitani, H. Nakajima, H. Maeda, M. Takamiya, T. Someya, and T. Sakurai, "A 100-V AC Energy Meter Integrating 20-V Organic CMOS Digital and Analog Circuits With a Floating Gate for Process Variation Compensation and a 100-V Organic pMOS Rectifier," IEEE Journal of Solid-State Circuits, Vol.47, No.1, pp. 301-309, Jan. 2012.
- [30] M. Daito, Y. Nakata, S. Sasaki, H. Gomyo, H. Kusamitsu, Y. Komoto, K. Iizuka, K. Ikeuchi, G. -S. Kim, M. Takamiya, and T. Sakurai, "Capacitively Coupled Non-Contact Probing Circuits for Membrane-Based Wafer-Level Simultaneous Testing," IEEE Journal of Solid-State Circuits, Vol.46, No.10, pp. 2386-2395, Oct. 2011.
- [31] T. Yasufuku, Y. Nakamura, Z. Piao, M. Takamiya, and T. Sakurai, "Power Supply Voltage Dependence of Within-Die Delay Variation of Regular Manual Layout and Irregular Place-and-Route Layout," IEICE Transaction on Electronics, E94-C, No.6, pp. 1072-1075, June 2011.
- [32] K. Ikeuchi, H. Kusamitsu, M. Daito, G. -S. Kim, M. Takamiya, and T. Sakurai, "1 Gb/s, 50um X 50um Pads on Board Wireless Connector Based on Track-and-Charge Scheme Allowing Contacted Signaling," IEICE Transaction on Electronics, E94-C, No.6, pp. 992-998, June 2011.
- [33] L. Liu, T. Sakurai, and M. Takamiya, "0.6V Voltage Shifter and Clocked Comparator for Sampling Correlation-Based Impulse Radio UWB Receiver," IEICE Transaction on Electronics, E94-C, No.6, pp. 985-991, June 2011.

- [34] X. Zhang, Y. Pu, K. Ishida, Y. Ryu, Y. Okuma, P. -H. Chen, T. Sakurai, and M. Takamiya, "A Variable Output Voltage Switched- Capacitor DC-DC Converter with Pulse Density and Width Modulation (PDWM) for 57% Ripple Reduction at Low Output Voltage," *IEICE Transaction on Electronics*, E94-C, No.6, pp. 953-959, June 2011.
- [35] Y. Okuma, K. Ishida, Y. Ryu, X. Zhang, P. -H. Chen, K. Watanabe, M. Takamiya, and T. Sakurai, "0.5-V Input Digital Low-Dropout Regulator (LDO) with 98.7% Current Efficiency in 65nm CMOS," *IEICE Transaction on Electronics*, E94-C, No.6, pp. 938-944, June 2011.
- [36] K. Ishida, T. Yasufuku, S. Miyamoto, H. Nakai, M. Takamiya, T. Sakurai, and K. Takeuchi, "1.8 V Low-Transient-Energy Adaptive Program-Voltage Generator Based on Boost Converter for 3D-Integrated NAND Flash SSD," *IEEE Journal of Solid-State Circuits*, Vol.46, No.6, pp. 1478-1487, June 2011.
- [37] L. Liu, T. Sakurai, and M. Takamiya, "A Charge-Domain Auto- and Cross-Correlation Based Data Synchronization Scheme With Power-and Area-Efficient PLL for Impulse Radio UWB Receiver," *IEEE Journal of Solid-State Circuits*, Vol.46, No.6, pp. 1349-1359, June 2011.
- [38] Y. Pu, X. Zhang, K. Ikeuchi, A. Muramatsu, A. Kawasumi, M. Takamiya, M. Nomura, H. Shinohara, and T. Sakurai, "Post-Silicon Clock Deskew Employing Hot-Carrier Injection Trimming With On-Chip Skew Monitoring and Auto-Stressing Scheme for Sub/Near Threshold Digital Circuits," *IEEE Transactions on Circuits and Systems-II*, Vol. 58, No. 5, pp. 294-298, May 2011.
- [39] T. Yokota, T. Nakagawa, T. Sekitani, Y. Noguchi, K. Fukuda, U. Zschieschang, H. Klauk, K. Takeuchi, M. Takamiya, T. Sakurai, and T. Someya, "Control of Threshold Voltage in Low-Voltage Organic Complementary Inverter Circuits with Floating Gate Structures," *Applied. Physics. Letters*, 98, 193302, May 2011.
- [40] P. -H. Chen, K. Ishida, X. Zhang, Y. Okuma, Y. Ryu, M. Takamiya, and T. Sakurai, "0.18-V Input Charge Pump with Forward Body Bias to Startup Boost Converter for Energy Harvesting Applications," *IEICE Transaction on Electronics*, E94-C, No.4, pp.598-604, Apr. 2011.
- [41] K. Johguchi, T. Hatanaka, K. Ishida, T. Yasufuku, M. Takamiya, T. Sakurai, and K. Takeuchi, "Through-Silicon Via Design for a 3-D Solid-State Drive System With Boost Converter in a Package," *IEEE Transaction on Components, Packaging and Manufacturing Technology*, Vol.1, No.2, pp. 269-277, Feb. 2011.
- [42] K. Ishida, N. Masunaga, R. Takahashi, T. Sekitani, S. Shino, U. Zschieschang, H. Klauk, M. Takamiya, T. Someya, and T. Sakurai, "User Customizable Logic Paper (UCLP) with Sea-of Transmission-Gates (SOTG) of 2-V Organic CMOS and Ink-Jet Printed Interconnects," *IEEE Journal of Solid-State Circuits*, Vol.46, No.1, pp. 285-292, Jan. 2011.
- [43] L. Liu, Z. Zhou, T. Sakurai, and M. Takamiya, "A 1.76mW, 100Mbps Impulse Radio UWB Receiver with Multiple Sampling Correlators Eliminating Need for Phase Synchronization in 65-nm CMOS," *IEICE Transaction on Electronics*, E93-C, No.6, pp. 796-802, June 2010.
- [44] Y. Kato, T. Sekitani, Y. Noguchi, T. Yokota, M. Takamiya, T. Sakurai and T. Someya, "Large-Area Flexible Ultrasonic Imaging System With an Organic Transistor Active Matrix," *IEEE Transactions on Electron Devices*, Vol. 57, No. 5, pp. 995 - 1002, May 2010.
- [45] T. Yasufuku, T. Niiyama, Z. Piao, K. Ishida, M. Murakata, M. Takamiya, and T. Sakurai, "Difficulty of Power Supply Voltage Scaling in Large Scale Subthreshold Logic Circuits," *IEICE Transaction on Electronics*, E93-C, No.3, pp.332-339, March 2010.
- [46] T. Yasufuku, K. Ishida, S. Miyamoto, H. Nakai, M. Takamiya, and T. Sakurai, "Inductor and TSV Design of 20-V Boost Converter for Low Power 3D Solid State Drive with NAND Flash Memories ," *IEICE Transaction on Electronics*, E93-C, No.3, pp.317-323, March 2010.
- [47] K. Ishida, N. Masunaga, Z. Zhou, T. Yasufuku, T. Sekitani, U. Zschieschang, H. Klauk, M. Takamiya, T. Someya, and T. Sakurai, "Stretchable EMI Measurement Sheet With 8 X 8 Coil Array, 2 V Organic CMOS Decoder, and 0.18 um Silicon CMOS LSIs for Electric and Magnetic Field Detection," *IEEE Journal of Solid-State Circuits*, Vol. 45, No. 1, pp. 249-259, Jan. 2010.

- [48] T. Sekitani, T. Yokota, U. Zschieschang, H. Klauk, S. Bauer, K. Takeuchi, M. Takamiya, T. Sakurai, and T. Someya, "Organic Nonvolatile Memory Transistors for Flexible Sensor Arrays," *Science*, Vol. 326, pp. 1516 - 1519, Dec. 2009.
- [49] L. Liu, M. Takamiya, T. Sekitani, Y. Noguchi, S. Nakano, K. Zaitso, T. Kuroda, T. Someya, and T. Sakurai, "A 107-pJ/bit 100-kb/s 0.18-um Capacitive-Coupling Transceiver With Data Edge Signaling and DC Power-Free Pulse Detector for Printable Communication Sheet," *IEEE Transactions on Circuits and Systems—I: Regular Papers*, Vol. 56, No. 11, pp. 2511 - 2518, Nov. 2009.
- [50] G.-S. Kim, M. Takamiya, and T. Sakurai, "A 25-mV-Sensitivity 2-Gb/s Optimum-Logic-Threshold Capacitive-Coupling Receiver for Wireless Wafer Probing Systems," *IEEE Transactions on Circuits and Systems—II: Express Briefs*, Vol. 56, No. 9, pp. 709 - 713, Sep. 2009.
- [51] L. Liu, Y. Miyamoto, Z. Zhou, K. Sakaida, J. Ryu, K. Ishida, M. Takamiya, and T. Sakurai, "A 100Mbps, 4.1pJ/bit Threshold Detection-Based Impulse Radio UWB Transceiver in 90nm CMOS," *IEICE Transaction on Electronics*, E92-C, No.6, pp.769-776, June 2009.
- [52] T. Sekitani, K. Zaitso, Y. Noguchi, K. Ishibe, M. Takamiya, T. Sakurai, and T. Someya, "Printed Nonvolatile Memory for a Sheet-Type Communication System," *IEEE Transactions on Electron Devices*, Vol. 56, No. 5, pp. 1027 - 1035, May 2009.
- [53] Y. Nakamura, M. Takamiya, and T. Sakurai, "An On-Chip Noise Canceller with High Voltage Supply Lines for Nanosecond-Range Power Supply Noise," *IEICE Transaction on Electronics*, E92-C, No.4, pp.468-472, April 2009.
- [54] M. Takamiya and T. Sakurai, "Low Power VLSI Circuit Design with Fine-Grain Voltage Engineering," *IPSI Transactions on System LSI Design Methodology*, Vol. 2, pp. 18 - 29, Feb. 2009. (Invited)
- [55] D. Levacq, M. Takamiya, and T. Sakurai, "Backgate Bias Accelerator for sub-100 ns Sleep-to-Active Modes Transition Time," *IEEE Journal of Solid-State Circuits*, Vol. 43, No. 11, pp. 2390 - 2395, Nov. 2008.
- [56] K. Onizuka, K. Inagaki, H. Kawaguchi, M. Takamiya, and T. Sakurai, "Stacked-Chip Implementation of On-Chip Buck Converter for Distributed Power Supply System in SiPs," *IEEE Journal of Solid-State Circuits*, Vol. 42, No. 11, pp. 2404 - 2410, Nov. 2007.
- [57] K. Ishida, A. Tamtrakarn, H. Ishikuro, M. Takamiya, and T. Sakurai, "An Outside-Rail Opamp Design Relaxing Low-Voltage Constraint on Future Scaled Transistors," *IEICE Transaction on Electronics*, E90-C, No.4, pp.786-792, April 2007.
- [58] Y. Kato, T. Sekitani, M. Takamiya, M. Doi, K. Asaka, T. Sakurai, and T. Someya, "Sheet-Type Braille Displays by Integrating Organic Field-Effect Transistors and Polymeric Actuators", *IEEE Transactions on Electron Devices*, Vol. 54, No. 2, pp. 202 - 209, Feb. 2007.
- [59] M. Takamiya, T. Sekitani, Y. Kato, H. Kawaguchi, T. Someya, and T. Sakurai, "An Organic FET SRAM with Back Gate to Increase Static Noise Margin and its Application to Braille Sheet Display," *IEEE Journal of Solid-State Circuits*, Vol. 42, No. 1, pp. 93 - 100, Jan. 2007.
- [60] K. Onizuka, H. Kawaguchi, M. Takamiya, and T. Sakurai, "VDD-Hopping Accelerators for On-Chip Power Supply Circuit to Achieve Nanosecond-Order Transient Time," *IEEE Journal of Solid-State Circuits*, Vol. 41, No. 11, pp. 2382 - 2389, Nov. 2006.
- [61] S. Iba, T. Sekitani, Y. Kato, T. Someya, H. Kawaguchi, M. Takamiya, T. Sakurai, and S. Ta-kagi, "Control of Threshold Voltage of Organic Field-Effect Transistors with Double Gate Structure," *Applied Physics Letters*, 87, 023509, July 2005.
- [62] M. Takamiya and M. Mizuno, "A 6.7-fF/um² Bias-Independent Gate Capacitor (BIGCAP) with Digital CMOS Process and its Application to the Loop Filter of a Differential PLL", *IEEE Journal of Solid-State Circuits*, Vol. 40, No. 3, pp. 719 - 725, Mar. 2005.
- [63] M. Takamiya and T. Hiramoto, "High Drive-Current Electrically Induced Body Dynamic Threshold SOI MOSFET (EIB-DTMOS) with Large Body Effect and Low Threshold Voltage", *IEEE Transactions on Electron Devices*, Vol. 48, No. 8, pp. 1633 - 1640, Aug. 2001.

- [64] T. Hiramoto, M. Takamiya, H. Koura, T. Inukai, H. Gomyo, H. Kawaguchi, and T. Sakurai, "Optimum Device Parameters and Scalability of Variable Threshold Voltage Complementary MOS (VTCMOS)", Japanese Journal of Applied Physics, Vol. 40, Part 1, No. 4B, pp. 2854 - 2858, April, 2001.
- [65] Y. Yasuda, M. Takamiya, and T. Hiramoto, "Threshold Voltage Fluctuations Induced by Statistical "Position" and "Number" Impurity Fluctuations in Bulk MOSFETs", Superlattices and Microstructures, Vol. 28, No. 5/6, pp. 357 - 361, November/December, 2000.
- [66] Y. Yasuda, M. Takamiya, and T. Hiramoto, "Separation of Effects of Statistical Impurity Number Fluctuations and Position Distribution on Vth Fluctuations in Scaled MOSFETs", IEEE Transactions on Electron Devices, Vol. 47, No. 10, pp. 1838 - 1842, October, 2000.
- [67] H. Koura, M. Takamiya, and T. Hiramoto, "Optimum Conditions of Body Effect Factor and Substrate Bias in Variable Threshold Voltage MOSFETs" Japanese Journal of Applied Physics, Vol. 39, No. 4B, pp. 2312 - 2317, April, 2000.
- [68] T. Hiramoto and M. Takamiya, "Low Power and Low Voltage MOSFETs with Variable Threshold Voltage Controlled by Back-Bias", IEICE Transaction on Electronics, E83-C, pp.161-169, Feb. 2000. (Invited Paper)
- [69] T. N. Duyet, H. Ishikuro, Y. Shi, T. Saraya, M. Takamiya, and T. Hiramoto, "Measurement of Energetic and Lateral Distribution of Interface State Density in Fully-Depleted Silicon on Insulator Metal-Semiconductor Field-Effect Transistors", Japanese Journal of Applied Physics, Vol. 38, No. 4B, pp. 2496 - 2500, April, 1999.
- [70] M. Takamiya, T. Saraya, T. N. Duyet, Y. Yasuda, and T. Hiramoto, "High Performance Accumulated Back-Interface Dynamic Threshold SOI MOSFET's (AB-DTMOS) with Large Body Effect at Low Supply Voltage", Japanese Journal of Applied Physics, Vol.38, Part 1, No. 4B, pp.2483-2486, April 1999.
- [71] T. Mukaiyama, K. Saito, H. Ishikuro, M. Takamiya, T. Saraya, and T. Hiramoto, "Fabrication of Gate-All Around MOSFET by Silicon Anisotropic Etching Technique", Solid State Electronics, Vol. 42, No. 7-8, pp. 1623 - 1626, July - August, 1998.
- [72] T. N. Duyet, H. Ishikuro, M. Takamiya, T. Saraya, and T. Hiramoto, "Suppression of Geometric Component of Charge Pumping Current in Thin Film SOI MOSFET", Japanese Journal of Applied Physics, Part 2, Vol. 37, No. 7B, pp. L855 - L858, July, 1998.
- [73] T. Saraya, M. Takamiya, T.N. Duyet, and T. Hiramoto, "New Measurement Technique of Sub-Bandgap Impact Ionization Current by Transient Characteristics of Partially Depleted SOI MOSFETs", Japanese Journal of Applied Physics, Vol. 37, Part 1, No. 3B, pp. 1271 - 1273, March, 1998.

(C) Conference Papers

- [1] Y. Uno, H. Qiu, T. Sai, S. Iguchi, Y. Mizutani, T. Hoshi, Y. Kawahara, Y. Kakehi, and M. Takamiya, "Luciola: A Millimeter-Scale Light-Emitting Particle Moving in Mid-Air Based On Acoustic Levitation and Wireless Powering," ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp), Singapore, Oct. 2018.
- [2] Y. S. Cheng, T. Mannen, K. Wada, K. Miyazaki, M. Takamiya, and T. Sakurai, "Optimization Platform to Find a Switching Pattern of Digital Active Gate Drive for Full-Bridge Inverter Circuit," IEEE Energy Conversion Congress & Exposition (ECCE), Portland, USA, pp. 6441 -6447, Sep. 2018.
- [3] H. Qiu, Y. Narusue, Y. Kawahara, T. Sakurai, and M. Takamiya, "Digital Coil: Transmitter Coil with Programmable Radius for Wireless Powering Robust Against Distance Variation," IEEE Wireless Power Transfer Conference (WPTC), Montreal, Canada, pp. 1-4, June 2018.
- [4] T. Someya, A.K.M. M. Islam, T. Sakurai, and M. Takamiya, "A 13nW Temperature-to-Digital Converter Utilizing Sub-threshold MOSFET Operation at Sub-thermal Drain Voltage," IEEE Custom Integrated Circuits Conference (CICC), San Diego, USA, pp. 1-4, April 2018.
- [5] T. Mannen, K. Wada, H. Obara, K. Miyazaki, M. Takamiya, and T. Sakurai, "Active Gate Control for Switching Waveform Shaping Irrespective of the Circuit Stray Inductance in a Practical Full-Bridge IGBT Inverter," IEEE Applied Power Electronics Conference and Exposition (APEC), San Antonio, USA, pp. 3108-3113, March 2018.

- [6] M. Takamiya, K. Miyazaki, H. Obara, T. Sai, K. Wada, and T. Sakurai, "Power Electronics 2.0: IoT-Connected and AI-Controlled Power Electronics Operating Optimally for Each User," The Institute of Electrical Engineers of Japan, 29th International Symposium on Power Semiconductor Devices and ICs (ISPSD), Sapporo, pp. 29 - 32, May 2017. (Invited)
- [7] Y. Yamauchi, T. Sai, T. Sakurai, and M. Takamiya, "Modeling of 3-Level Buck Converters in Discontinuous Conduction Mode for Stand-by Mode Power Supply," IEEE International Symposium for Circuits and Systems (ISCAS), Baltimore, USA, pp. 1282 - 1285, May 2017.
- [8] C.-S. Wu, M. Takamiya, and T. Sakurai, "Buck Converter with Higher Than 87% Efficiency over 500nA to 20mA Load Current Range for IoT Sensor Nodes by Clocked Hysteresis Control," IEEE Custom Integrated Circuits Conference (CICC), Austin, USA, pp. 1 - 4, April 2017.
- [9] H. Obara, K. Wada, K. Miyazaki, M. Takamiya, and T. Sakurai, "Active Gate Control in Half-Bridge Inverters Using Programmable Gate Driver ICs to Improve Both Surge Voltage and Switching Loss," IEEE Applied Power Electronics Conference and Exposition (APEC), Tampa, USA, pp. 1153-1159, March 2017.
- [10] K. Miyazaki, Ichiro Omura, M. Takamiya, and T. Sakurai, "20-ns Short-Circuit Detection Scheme with High Variation-Tolerance based on Analog Delay Multiplier Circuit for Advanced IGBTs," IEEE Southern Power Electronics Conference (SPEC), Auckland, New Zealand, pp. 1 -4, Dec. 2016.
- [11] T. Someya, K. Matsunaga, H. Morimura, T. Sakurai, and M. Takamiya, "56-Level Programmable Voltage Detector in Steps of 50mV for Battery Management," IEEE Asian Solid-State Circuits Conference (A-SSCC), Toyama, Japan, pp. 49-52, Nov. 2016.
- [12] M. Takamiya, "Circuits and System Technologies for Organic Electronics," Short Course in International Conference on Solid State Devices and Materials (SSDM), Tsukuba, Japan, Sep. 2016. (Invited)
- [13] K. Miyazaki, M. Takamiya, and T. Sakurai, "Automatic Optimization of IGBT Gate Driving Waveform Using Simulated Annealing for Programmable Gate Driver IC," IEEE Energy Conversion Congress & Exposition (ECCE), Milwaukee, USA, pp. 1 -6, Sep. 2016.
- [14] H. Ohta, M. Honda, and M. Takamiya, "Interventional Placement of Thin Coil Shaped Implants Powered Wirelessly for Monitoring Vital Signals and Controlling Abnormal Activities by Electro-Stimulation," IEEE 38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), Orlando, USA, pp. 3035-3038, Aug 2016.
- [15] A.K.M. M. Islam, H. Fuketa, K. Ishida, T. Yokota, T. Sekitani, M. Takamiya, T. Someya, and T. Sakurai, "Sensor and Circuit Solutions for Organic Flexible Electronics," Society for Information Display (SID) International Symposium, San Francisco, USA, pp. 629-632, May 2016. (Invited)
- [16] K. Miyazaki, S. Abe, M. Tsukuda, I. Omura, K. Wada, M. Takamiya, and T. Sakurai, "General-Purpose Clocked Gate Driver (CGD) IC with Programmable 63-Level Drivability to Reduce Ic Overshoot and Switching Loss of Various Power Transistors," IEEE Applied Power Electronics Conference and Exposition (APEC), Long Beach, USA, pp. 1640 -1645, March 2016.
- [17] S. Iguchi, T. Sakurai, and M. Takamiya, "A 39.25MHz 278dB FOM 19 μ W LDO-Free Stacked-Amplifier Crystal Oscillator (SAXO) Operating at I/O Voltage," IEEE International Solid-State Circuits Conference (ISSCC), San Francisco, USA, pp. 100-101, Feb. 2016.
- [18] M. Honda, T. Sakurai, and M. Takamiya, "Wireless Temperature and Illuminance Sensor Nodes With Energy Harvesting from Insulating Cover of Power Cords for Building Energy Management System," IEEE Asia-Pacific Power and Energy Engineering Conference (APPEEC), Brisbane, Australia, PES-APPEEC-255, pp. 1-5, Nov. 2015.
- [19] T. Someya, H. Fuketa, K. Matsunaga, H. Morimura, T. Sakurai, and M. Takamiya, "248pW, 0.11mV/ $^{\circ}$ C Glitch-Free Programmable Voltage Detector With Multiple Voltage Duplicator for Energy Harvesting", 41th European Solid-State Circuits Conference (ESSCIRC), Graz, Austria, pp. 249-252, Sep. 2015.
- [20] D. Luo, H. Fuketa, K. Matsunaga, H. Morimura, M. Takamiya, and T. Sakurai, "Analysis to Optimize Sensitivity of RF Energy Harvester with Voltage Boost Circuit," IEEE 22nd European Conference on Circuit Theory and Design (ECCTD), Trondheim, Norway, pp. 1-4, Aug. 2015.

- [21] Y. Yamauchi, Y. Yanagihara, H. Fuketa, T. Sakurai, and M. Takamiya, "Optimal Design to Maximize Efficiency of Single-Inductor Multiple-Output Buck Converters in Discontinuous Conduction Mode for IoT Applications," IEEE International Conference on IC Design and Technology (ICICDT), Leuven, Belgium, pp. 1-4, May 2015.
- [22] M. Takamiya, "Energy Efficient Design and Energy Harvesting for Energy Autonomous Systems," IEEE International Symposium on VLSI Design, Automation and Test (2015 VLSI-DAT), Hsinchu, Taiwan, DSS13, pp. 1 - 3, April 2015. (Invited)
- [23] T. Yokota, W. Yukita, J. Reeder, H. Fuketa, M. Hamamatsu, T. Someya, W. Voit, M. Takamiya, T. Sekitani, T. Sakurai, and T. Someya, "Organic Complementary Circuits With Thin Parylene Gate Dielectric for a Flexible Fever Alarm System," Material Research Society (MRS) Spring Meeting, II5.03, San Francisco, USA, April 2015.
- [24] Y. Kondo, Y. Yazaki, M. Sonehara, T. Sato, T. Watanabe, Y. Seino, N. Matsushita, T. Fujii, K. Kobayashi, H. Shimizu, Y. Yanagisawa, T. Someya, H. Fuketa, M. Takamiya, and T. Sakurai, "Embedded Planar Power Inductor Technology for Package-level DC Power Grid," International Conference on Electronic Packaging and iMAPS All Asia Conference (ICEP-IACC), Kyoto, pp. 814-817, April 2015.
- [25] H. Fuketa, M. Hamamatsu, T. Yokota, W. Yukita, T. Someya, T. Sekitani, M. Takamiya, T. Someya, and T. Sakurai, "Energy-Autonomous Fever Alarm Armband Integrating Fully Flexible Solar Cells, Piezoelectric Speaker, Temperature Detector, and 12V Organic Complementary FET Circuits," IEEE International Solid-State Circuits Conference (ISSCC), San Francisco, USA, pp. 296-297, Feb. 2015.
- [26] H. Fuketa, Y. Momiyama, A. Okamoto, T. Sakata, M. Takamiya, and T. Sakurai, "An 85-mV Input, 50- μ s Startup Fully Integrated Voltage Multiplier with Passive Clock Boost Using On-Chip Transformers for Energy Harvesting ", 40th European Solid-State Circuits Conference (ESSCIRC), Venice, Italy, pp. 263-266, Sep. 2014.
- [27] H. Fuketa, K. Yoshioka, K. Fukuda, T. Mori, H. Ota, M. Takamiya, and T. Sakurai, "Design Guidelines of Steep Subthreshold TFET to Minimize Energy of Logic Circuits," International Conference on Solid State Devices and Materials (SSDM), Tsukuba, Japan, pp. 832-833, Sep. 2014.
- [28] M. Takamiya, H. Fuketa, K. Ishida, T. Yokota, T. Sekitani, T. Someya, and T. Sakurai, "Flexible, Large-Area, and Distributed Organic Electronics Closely Contacted with Skin for Healthcare Applications," IEEE International Midwest Symposium on Circuits and Systems (MWSCAS), College Station, USA, pp. 829 - 832, Aug. 2014. (Invited)
- [29] S. Iguchi, H. Fuketa, T. Sakurai, and M. Takamiya, "92% Start-up Time Reduction by Variation-Tolerant Chirp Injection (CI) and Negative Resistance Booster (NRB) in 39MHz Crystal Oscillator," IEEE Symposium on VLSI Circuits, Hawaii, pp. 236-237, June 2014.
- [30] H. Fuketa, Y. Shinozuka, K. Ishida, M. Takamiya, and T. Sakurai, "On-Chip Buck Converter with Spiral Ferrite Inductor and Reducing IR Drop in 3D Stacked Integration," International Power Electronics Conference (IPEC), Hiroshima, Japan, pp. 2228-2231, May 2014. (Invited)
- [31] T. Yokota, Y. Terakawa, T. Sekitani, W. Yukita, M. Koizumi, H. Fuketa, K. Yoshioka, M. Sekino, M. Takamiya, T. Sakurai, and T. Someya, "Organic Transistor Based Wireless Sensor System with ESD Protection Circuit," Materials Research Society (MRS) Spring Meeting, C6.04, San Francisco, USA, April 2014.
- [32] M. Takamiya, "Extremely Low-Power Circuit Design for Wearable Systems," IEEE International Solid-State Circuits Conference (ISSCC), Evening Session, "Wearable Wellness Devices: Fashion, Health, and Informatics", San Francisco, USA, Feb. 2014. (Invited)
- [33] H. Fuketa, K. Yoshioka, T. Yokota, W. Yukita, M. Koizumi, M. Sekino, T. Sekitani, M. Takamiya, T. Someya, and T. Sakurai, "Organic-Transistor-Based 2kV ESD-Tolerant Flexible Wet Sensor Sheet for Biomedical Applications with Wireless Power and Data Transmission Using 13.56MHz Magnetic Resonance," IEEE International Solid-State Circuits Conference (ISSCC), San Francisco, USA, pp. 490-491, Feb. 2014.

- [34] T. Someya, T. Sekitani, M. Kaltenbrunner, T. Yokota, H. Fuketa, M. Takamiya, and T. Sakurai, "Ultraflexible Organic Devices for Biomedical Applications," IEEE International Electron Devices Meeting (IEDM), Washington DC, USA, pp. 8.5.1-8.5.4, Dec. 2013. (Invited)
- [35] X. Zhang, Y. Okuma, P. -H. Chen, K. Ishida, Y. Ryu, K. Watanabe, T. Sakurai, and M. Takamiya, "A 0.6-V Input 94% Peak Efficiency CCM/DCM Digital Buck Converter in 40-nm CMOS with Dual-Mode-Body-Biased Zero-Crossing Detector," IEEE Asian Solid-State Circuits Conference (A-SSCC), Singapore, pp. 45-48, Nov. 2013.
- [36] H. Fuketa, R. Takahashi, M. Takamiya, M. Nomura, H. Shinohara, and T. Sakurai, "Variation-aware Subthreshold Logic Circuit Design," IEEE International Conference on ASIC (ASICON), Shenzhen, China, pp. 95-98, Oct. 2013. (Invited)
- [37] A. Borna, M. Takamiya, and J. Rabaey, "The Path Toward Energy-Efficient Inference Engine Architectures on Scaled and Beyond-CMOS Fabrics," Third Berkeley Symposium on Energy Efficient Electronic Systems, Berkeley, USA, Oct. 2013.
- [38] M. Takamiya, "Energy Efficient 0.5V Logic, RF, and Power Management Circuits," IEEE SOI-3D-Subthreshold Microelectronics Technology Unified Conference (S3S), Monterey, USA, Oct. 2012. (Invited)
- [39] K. Mori, Y. Okuma, X. Zhang, H. Fuketa, T. Sakurai, and M. Takamiya, "Analog-Assisted Digital Low Dropout Regulator (AAD-LDO) with 59% Faster Transient Response and 28% Ripple Reduction," International Conference on Solid State Devices and Materials (SSDM), Fukuoka, Japan, pp. 888-889, Sep. 2013.
- [40] S. Yoshimoto, S. Miyano, M. Takamiya, H. Shinohara, H. Kawaguchi, and M. Yoshimoto, "A 40-nm 8T SRAM with Selective Source Line Control of Read Bitlines and Address Preset Structure," IEEE Custom Integrated Circuits Conference (CICC), San Jose, USA, pp. 1-4, Sep. 2013.
- [41] H. Fuketa, K. Ishida, T. Sekitani, M. Takamiya, T. Someya, and T. Sakurai, "Large-Area and Flexible Sensors with Organic Transistors," IEEE International Workshop on Advances in Sensors and Interfaces (IWASI), Bari, Italy, pp. 87-90, June 2013. (Invited)
- [42] S. Iguchi, A. Saito, Y. Zheng, K. Watanabe, T. Sakurai, and M. Takamiya, "93% Power Reduction by Automatic Self Power Gating (ASPG) and Multistage Inverter for Negative Resistance (MINR) in 0.7V, 9.2 μ W, 39MHz Crystal Oscillator," IEEE Symposium on VLSI Circuits, Kyoto, pp. C142-C143, June 2013.
- [43] M. Nomura, A. Muramatsu, H. Takeno, S. Hattori, D. Ogawa, M. Nasu, K. Hirairi, S. Kumashiro, S. Moriwaki, Y. Yamamoto, S. Miyano, Y. Hiraku, I. Hayashi, K. Yoshioka, A. Shikata, H. Ishikuro, M. Ahn, Y. Okuma, X. Zhang, Y. Ryu, K. Ishida, M. Takamiya, T. Kuroda, H. Shinohara, and T. Sakurai, "0.5V Image Processor with 563 GOPS/W SIMD and 32bit CPU Using High Voltage Clock Distribution (HVCD) and Adaptive Frequency Scaling (AFS) with 40nm CMOS," IEEE Symposium on VLSI Circuits, Kyoto, pp. C36-C37, June 2013.
- [44] T. Sekitani, T. Yokota, M. Takamiya, T. Sakurai, and T. Someya, "Electrical Artificial Skin Using Ultra-Flexible Organic Transistor," ACM Design Automation Conference, Austin, USA, pp. 1-3, June 2013.
- [45] M. Takamiya, "Application of Large Area and Flexible Organic Transistors: Piezoelectric Energy Harvester and Surface Electromyogram Measurement Sheet," LIMMS Workshop, "Beyond the Frontiers of Nanoscience and Biosystems", Paris, France, May 2013. (Invited)
- [46] S. Iguchi, P. Yeon, H. Fuketa, K. Ishida, T. Sakurai, and M. Takamiya, "Zero Phase Difference Capacitance Control (ZPDCC) for Magnetically Resonant Wireless Power Transmission," IEEE Wireless Power Transfer Conference (WPTC), Perugia, Italy, pp. 25-26, May. 2013. (Best Paper Award)
- [47] H. Fuketa, Y. Shinozuka, K. Ishida, M. Takamiya, T. Fujii, H. Shimizu, K. Kobayashi, T. Sato, and T. Sakurai, "Efficiency Increase in On-Chip Buck Converter by Introduction of High Permeability Material to Inductor on Interposer," International Conference on Ferrites (ICF), Okinawa, p. 75, Apr. 2013.
- [48] M. Takamiya, "Emerging Applications and Design Challenges of Organic Electronics," Tutorial Short Course in IEEE International Conference on Microelectronic Test Structures (ICMTS), Osaka, March 2013. (Invited)

- [49] Y. Shinozuka, H. Fuketa, K. Ishida, F. Furuta, K. Osada, K. Takeda, M. Takamiya, and T. Sakurai, "Reducing IR Drop in 3D Integration to Less Than 1/4 Using Buck Converter on Top Die (BCT) Scheme," IEEE International Symposium on Quality Electronic Design (ISQED), Santa Clara, USA, pp. 210-215, March 2013.
- [50] H. Fuketa, M. Nomura, M. Takamiya, and T. Sakurai, "Intermittent Resonant Clocking Enabling Power Reduction at Any Clock Frequency for 0.37V, 980kHz Near-Threshold Logic Circuits," IEEE International Solid-State Circuits Conference (ISSCC), San Francisco, USA, pp. 436-437, Feb. 2013.
- [51] H. Fuketa, K. Yoshioka, Y. Shinozuka, K. Ishida, T. Yokota, N. Matsuhisa, Y. Inoue, M. Sekino, T. Sekitani, M. Takamiya, T. Someya, and T. Sakurai, "1um Thickness 64 Channel Surface Electromyogram Measurement Sheet with 2V Organic Transistors for Prosthetic Hand Control," IEEE International Solid-State Circuits Conference (ISSCC), San Francisco, USA, pp. 104-105, Feb. 2013.
- [52] X. Zhang, P. -H. Chen, Y. Ryu, K. Ishida, Y. Okuma, K. Watanabe, T. Sakurai, and M. Takamiya, "A Low Voltage Buck DC-DC Converter Using On-Chip Gate Boost Technique in 40nm CMOS," Asia-South Pacific Design Automation Conference (ASP-DAC), Yokohama, Japan, pp. 109-110, Jan. 2013.
- [53] S. Iguchi, A. Saito, K. Honda, Y. Zheng, K. Watanabe, T. Sakurai, and M. Takamiya, "315MHz OOK Transceiver with 38-uW Receiver and 36-uW Transmitter in 40-nm CMOS," Asia-South Pacific Design Automation Conference (ASP-DAC), Yokohama, Japan, pp. 93-94, Jan. 2013.
- [54] M. Takamiya, K. Ishida, K. Takemura, and T. Sakurai, "3D Stacked Buck Converter with SrTiO₃ (STO) Capacitors on Silicon Interposer," IEEE International Workshop on Power Supply on Chip (PowerSoC), San Francisco, USA, 4-3, Nov. 2012. (Invited)
- [55] M. Takamiya, "Extremely Low Power VLSI Circuits with Low Voltage Operation," IEEE/ACM Workshop on Variability Modeling and Characterization (VMC), San Jose, USA, Nov. 2012. (Invited)
- [56] M. Takamiya, K. Ishida, H. Fuketa, T. Sekitani, T. Someya, and T. Sakurai, "Printable and Flexible Electronics with Organic Transistors," IEEE International Conference on Computer-Aided Design (ICCAD), San Jose, USA, 7D-2, Nov. 2012. (Invited)
- [57] S. Iguchi, A. Saito, K. Watanabe, T. Sakurai, and M. Takamiya, "2.1 Times Increase of Drain Efficiency by Dual Supply Voltage Scheme in 315MHz Class-F Power Amplifier at Output Power of -20dBm", 38th European Solid-State Circuits Conference (ESSCIRC), Bordeaux, France, pp. 345-348, Sep. 2012.
- [58] H. Fuketa, R. Takahashi, M. Takamiya, M. Nomura, H. Shinohara, and T. Sakurai, "Increase of Crosstalk Noise Due to Imbalanced Threshold Voltage between NMOS and PMOS in Sub-Threshold Logic Circuits," IEEE Custom Integrated Circuits Conference (CICC), San Jose, USA, pp. 1-4, Sep. 2012.
- [59] X. Zhang, Y. Pu, K. Ishida, Y. Ryu, Y. Okuma, P. -H. Chen, K. Watanabe, T. Sakurai, and M. Takamiya, "Low Voltage Switched-Capacitor Voltage Converter with Improved Light Load Efficiency," 3rd IEICE International Conference on Integrated Circuits and Devices in Vietnam (ICDV), Danang, Vietnam, pp. 46-51, Aug. 2012.
- [60] A. Saito, Y. Zheng, K. Watanabe, T. Sakurai, and M. Takamiya, "0.35V, 4.1uW, 39MHz Crystal Oscillator in 40nm CMOS," International Symposium on Low Power Electronics and Design (ISLPED), Redondo Beach, USA, pp. 333-338, Aug. 2012.
- [61] X. Zhang, P. -H. Chen, Y. Ryu, K. Ishida, Y. Okuma, K. Watanabe, T. Sakurai, and M. Takamiya, "A 0.45-V Input On-Chip Gate Boosted (OGB) Buck Converter in 40-nm CMOS with More Than 90% Efficiency in Load Range from 2μW to 50μW," IEEE Symposium on VLSI Circuits, Hawaii, pp. 194-195, June 2012.
- [62] A. Saito, K. Honda, Y. Zheng, S. Iguchi, K. Watanabe, T. Sakurai, and M. Takamiya, "An All 0.5V, 1Mbps, 315MHz OOK Transceiver with 38-μW Carrier-Frequency-Free Intermittent Sampling Receiver and 52-μW Class-F Transmitter in 40-nm CMOS," IEEE Symposium on VLSI Circuits, Hawaii, pp. 38-39, June 2012.
- [63] R. Takahashi, H. Takata, T. Yasufuku, H. Fuketa, M. Takamiya, M. Nomura, H. Shinohara, and T. Sakurai, "Large Within-Die Gate Delay Variations in Sub-Threshold Logic Circuits at Low Temperature," IEEE International Workshop on Design for Manufacturability and Yield (DFM&Y), San Francisco, USA, June 2012.

- [64] H. Lim, K. Ishida, M. Takamiya, and T. Sakurai, "Positioning-Free Magnetically Resonant Wireless Power Transmission Board with Staggered Repeater Coil Array (SRCA)," IEEE MTT-S International Microwave Workshop Series on Innovative Wireless Power Transmission: Technologies, Systems, and Applications (IMWS-IWPT), Kyoto, pp. 93-96, May 2012.
- [65] T. Yasufuku, K. Hirairi, Y. Pu, Y. -F. Zheng, R. Takahashi, M. Sasaki, H. Fuketa, A. Muramatsu, M. Nomura, F. Shinohara, M. Takamiya, and T. Sakurai, "24% Power Reduction by Post-Fabrication Dual Supply Voltage Control of 64 Voltage Domains in VDDmin Limited Ultra Low Voltage Logic Circuits," IEEE International Symposium on Quality Electronic Design (ISQED), Santa Clara, USA, pp. 586-591, March 2012.
- [66] K. Hirairi, Y. Okuma, H. Fuketa, T. Yasufuku, M. Takamiya, M. Nomura, H. Shinohara, and T. Sakurai, "13% Power Reduction in 16b Integer Unit in 40nm CMOS by Adaptive Power Supply Voltage Control with Parity-Based Error Prediction and Detection (PEPD) and Fully Integrated Digital LDO," IEEE International Solid-State Circuits Conference (ISSCC), San Francisco, USA, pp. 486-487, Feb. 2012.
- [67] K. Ishida, T. -C. Huang, K. Honda, Y. Shinozuka, H. Fuketa, T. Yokota, U. Zschieschang, H. Klauk, G. Tortissier, T. Sekitani, M. Takamiya, H. Toshiyoshi, T. Someya, and T. Sakurai, "Insole Pedometer With Piezoelectric Energy Harvester and 2V Organic Digital and Analog Circuits," IEEE International Solid-State Circuits Conference (ISSCC), San Francisco, USA, pp. 308-309, Feb. 2012.
- [68] K. Ikeuchi, M. Takamiya, and T. Sakurai, "Through Silicon Capacitive Coupling (TSCC) Interface for 3D Stacked Dies," IEEE International 3D System Integration Conference (3DIC), P-2-5, Osaka, Feb. 2012.
- [69] P. -H. Chen, K. Ishida, X. Zhang, Y. Okuma, Y. Ryu, M. Takamiya, and T. Sakurai, "A 120-mV Input, Fully Integrated Dual-Mode Charge Pump in 65-nm CMOS for Thermoelectric Energy Harvester," Asia-South Pacific Design Automation Conference (ASP-DAC), Sydney, Australia, pp. 469-470, Jan. 2012. (Best Design Award in University LSI Design Contest)
- [70] T. -C. Huang, K. Ishida, T. Sekitani, M. Takamiya, T. Someya, and T. Sakurai, "A Floating-Gate OTFT-Driven AMOLED Pixel Circuit for Variation and Degradation Compensation in Large-Sized Flexible Displays," International Display Workshop (IDW), Nagoya, Japan, pp. 1643-1646, Dec. 2011. (Invited)
- [71] H. Fuketa, T. Yasufuku, S. Iida, M. Takamiya, M. Nomura, H. Shinohara, and T. Sakurai, "Device-Circuit Interactions in Extremely Low Voltage CMOS Designs," IEEE International Electron Devices Meeting (IEDM), Washington DC, USA, pp. 559-562, Dec. 2011. (Invited)
- [72] T. Yokota, T. Sekitani, T. Tokuhara, U. Zschieschang, H. Klauk, T.-C. Huang, M. Takamiya, T. Sakurai, and T. Someya, "Sheet-type Organic Active Matrix Amplifier System Using Vth-Tunable, Pseudo-CMOS Circuits with Floating-gate Structure," IEEE International Electron Devices Meeting (IEDM), Washington DC, USA, pp. 335-338, Dec. 2011.
- [73] P. -H. Chen, K. Ishida, X. Zhang, Y. Okuma, Y. Ryu, M. Takamiya, and T. Sakurai, "A 80-mV Input, Fast Startup Dual-Mode Boost Converter with Charge-Pumped Pulse Generator for Energy Harvesting," IEEE Asian Solid-State Circuits Conference (A-SSCC), Jeju, Korea, pp. 33-36, Nov. 2011.
- [74] A. Muramatsu, T. Yasufuku, M. Nomura, M. Takamiya, H. Shinohara, and T. Sakurai, "12% Power Reduction by Within-Functional-Block Fine-Grained Adaptive Dual Supply Voltage Control in Logic Circuits with 42 Voltage Domains," 37th European Solid-State Circuits Conference (ESSCIRC), Helsinki, Finland, pp. 191-194, Sep. 2011.
- [75] K. Ishida, T. -C. Huang, T. Sekitani, M. Takamiya, T. Someya, and T. Sakurai, "Large-Area Flexible Electronics with Organic Transistors," IEEE International Midwest Symposium on Circuits and Systems, Seoul, Korea, pp. 1-4, Aug. 2011. (Invited)
- [76] K. Honda, K. Ikeuchi, M. Nomura, M. Takamiya, and T. Sakurai, "Reduction of Minimum Operating Voltage (VDDmin) of CMOS Logic Circuits with Post-Fabrication Automatically Selective Charge Injection," International Symposium on Low Power Electronics and Design (ISLPED), Fukuoka, Japan, pp. 175-180, Aug. 2011.
- [77] H. Fuketa, K. Hirairi, T. Yasufuku, M. Takamiya, M. Nomura, H. Shinohara, and T. Sakurai, "12.7-times Energy Efficiency Increase of 16-bit Integer Unit by Power Supply Voltage (VDD) Scaling from 1.2V to 310mV Enabled by Contention-less Flip-Flops (CLFF) and Separated VDD between Flip-Flops and

- Combinational Logics," International Symposium on Low Power Electronics and Design (ISLPED), Fukuoka, Japan, pp. 163-168, Aug. 2011.
- [78] T. Yasufuku, S. Iida, H. Fuketa, K. Hirairi, M. Nomura, M. Takamiya, and T. Sakurai, "Investigation of Determinant Factors of Minimum Operating Voltage of Logic Gates in 65-nm CMOS," International Symposium on Low Power Electronics and Design (ISLPED), Fukuoka, Japan, pp. 21-26, Aug. 2011.
- [79] X. Zhang, Y. Pu, K. Ishida, Y. Ryu, Y. Okuma, P. -H. Chen, K. Watanabe, T. Sakurai, and M. Takamiya, "A Voltage-Reference-Free Pulse Density Modulation (VRF-PDM) 1-V Input Switched-Capacitor 1/2 Voltage Converter with Output Voltage Trimming by Hot Carrier Injection and Periodic Activation Scheme," IEEE Symposium on VLSI Circuits, Kyoto, pp. 280-281, June 2011.
- [80] L. Liu, T. Sakurai, and M. Takamiya, "315MHz Energy-Efficient Injection-Locked OOK Transmitter and 8.4 μ W Power-Gated Receiver Front-End for Wireless Ad Hoc Network in 40nm CMOS," IEEE Symposium on VLSI Circuits, Kyoto, pp. 164-165, June 2011.
- [81] H. Fuketa, S. Iida, T. Yasufuku, M. Takamiya, M. Nomura, H. Shinohara, and T. Sakurai, "A Closed-Form Expression for Estimating Minimum Operating Voltage (VDDmin) of CMOS Logic Gates," ACM Design Automation Conference, San Diego, USA, pp. 984-989, June 2011.
- [82] T. -C. Huang, K. Ishida, T. Sekitani, M. Takamiya, T. Someya, and T. Sakurai, "A Floating-Gate OTFT-Driven AMOLED Pixel Circuit for Variation and Degradation Compensation in Large-Sized Flexible Displays," Society for Information Display (SID) International Symposium, Los Angeles, USA, pp. 149-152, May 2011.
- [83] K. Ishida, T. -C. Huang, K. Honda, T. Sekitani, H. Nakajima, H. Maeda, M. Takamiya, T. Someya, and T. Sakurai, "100-V AC Power Meter System-on-a-Film (SoF) Integrating 20-V Organic CMOS Digital and Analog Circuits with Floating Gate for Process Variation Compensation and 100-V Organic PMOS Rectifier," IEEE International Solid-State Circuits Conference (ISSCC), San Francisco, USA, pp. 218-219, Feb. 2011.
- [84] P. -H. Chen, K. Ishida, K. Ikeuchi, X. Zhang, K. Honda, Y. Okuma, Y. Ryu, M. Takamiya, and T. Sakurai, "A 95mV-Startup Step-up Converter with VTH-Tuned Oscillator by Fixed-Charge Programming and Capacitor Pass-On Scheme," IEEE International Solid-State Circuits Conference (ISSCC), San Francisco, USA, pp. 216-217, Feb. 2011.
- [85] X. Zhang, K. Ishida, M. Takamiya, and T. Sakurai, "An On-Chip Characterizing System for Within-Die Delay Variation Measurement of Individual Standard Cells in 65-nm CMOS," Asia-South Pacific Design Automation Conference (ASP-DAC), Yokohama, Japan, pp. 109-110, Jan. 2011.
- [86] M. Takamiya, K. Ishida, T. Sekitani, U. Zschieschang, H. Klauk, T. Someya, and T. Sakurai, "Large Area Electronics with Organic Transistors and Novel Interconnects: EMI Measurement Sheet with Stretchable Interconnects and User Customizable Logic Paper (UCLP) with Ink-Jet Printed Interconnects," International Display Workshop (IDW), Fukuoka, Japan, pp. 1577-1580, Dec. 2010. (Invited)
- [87] G.-S. Kim, K. Ikeuchi, M. Daito, M. Takamiya, and T. Sakurai, "A High-Speed, Low-Power Capacitive-Coupling Transceiver for Wireless Wafer-Level Testing Systems," IEEE International 3D System Integration Conference (3DIC), Munich, Germany, Nov. 2010.
- [88] K. Ishida, K. Takemura, K. Baba, M. Takamiya, and T. Sakurai, "3D Stacked Buck Converter with 15 μ m Thick Spiral Inductor on Silicon Interposer for Fine-Grain Power-Supply Voltage Control in SiP's," IEEE International 3D System Integration Conference (3DIC), Munich, Germany, pp. 1-4, Nov. 2010.
- [89] L. Liu, T. Sakurai, and M. Takamiya, "0.6V Voltage Doubler and Clocked Comparator for Correlation-based Impulse Radio UWB Receiver in 65nm CMOS," IEEE Asian Solid-State Circuits Conference (A-SSCC), Beijing, China, pp. 301-304, Nov. 2010.
- [90] X. Zhang, Y. Pu, K. Ishida, Y. Ryu, Y. Okuma, P.-H. Chen, K. Watanabe, T. Sakurai, and M. Takamiya, "A 1-V Input, 0.2-V to 0.47-V Output Switched-Capacitor DC-DC Converter with Pulse Density and Width Modulation (PDWM) for 57% Ripple Reduction," IEEE Asian Solid-State Circuits Conference (A-SSCC), Beijing, China, pp. 61-64, Nov. 2010.
- [91] Y. Pu, X. Zhang, J. Huang, A. Muramatsu, M. Nomura, K. Hirairi, H. Takata, T. Sakurabayashi, S. Miyano, M. Takamiya, and T. Sakurai, "Misleading Energy and Performance Claims in Sub/Near Threshold Digital

- Systems," IEEE International Conference on Computer-Aided Design (ICCAD), San Jose, USA, pp. 625-631, Nov. 2010.
- [92] M. Takamiya, K. Ishida, T. Sekitani, T. Someya, and T. Sakurai, "Design of Large Area Electronics with Organic Transistors," IEEE International Conference on Computer-Aided Design (ICCAD), San Jose, USA, pp. 500-503, Nov. 2010. (Invited)
- [93] T. Sekitani, K. Ishida, M. Takamiya, T. Sakurai, and T. Someya, "Stretchable Large-Area Electronics Using Organic Transistor Integrated Circuits," International Conference on Solid-State and Integrated Circuit Technology (ICSICT), Shanghai, China, pp. 1272-1275, Nov. 2010.
- [94] T. Sekitani, K. Ishida, N. Masunaga, R. Takahashi, S. Shino, U. Zschieschang, H. Klauk, M. Takamiya, T. Sakurai, and T. Someya, "Organic CMOS Logic Papers with In-Field User Customizability," 2010 International Conference on Solid State Devices and Materials (SSDM), Tokyo, Japan, A-6-2, Sep. 2010.
- [95] N. Masunaga, K. Ishida, M. Takamiya, and T. Sakurai, "EMI Camera LSI (EMcam) with 12 x 4 On-Chip Loop Antenna Matrix in 65-nm CMOS to Measure EMI Noise Distribution with 60- μ m Spatial Precision," IEEE Custom Integrated Circuits Conference (CICC), San Jose, USA, pp. 449-452, Sep. 2010.
- [96] Y. Okuma, K. Ishida, Y. Ryu, X. Zhang, P.-H. Chen, K. Watanabe, M. Takamiya, and T. Sakurai, "0.5-V Input Digital LDO with 98.7% Current Efficiency and 2.7- μ A Quiescent Current in 65nm CMOS," IEEE Custom Integrated Circuits Conference (CICC), San Jose, USA, pp. 323-326, Sep. 2010.
- [97] P.-H. Chen, K. Ishida, X. Zhang, Y. Okuma, Y. Ryu, M. Takamiya, and T. Sakurai, "0.18-V Input Charge Pump with Forward Body Biasing in Startup Circuit using 65nm CMOS," IEEE Custom Integrated Circuits Conference (CICC), San Jose, USA, pp. 239-242, Sep. 2010.
- [98] T. Hatanaka, K. Ishida, T. Yasufuku, S. Miyamoto, H. Nakai, M. Takamiya, T. Sakurai and K. Takeuchi, "A 60% Higher Write Speed, 4.2Gbps, 24-Channel 3D-Solid State Drive (SSD) with NAND Flash Channel Number Detector and Intelligent Program-Voltage Booster," IEEE Symposium on VLSI Circuits, Hawaii, pp. 233-234, June 2010.
- [99] H. Ishizaki, T. Araki, S. Takahashi, J. Ryu, S. Uchida, N. Yoshida, M. Takamiya and M. Mizuno, "FDM-based Wireless Source Synchronous 15-Mbps TRx with PLL-less Receiver and 1-mm On-chip Integrated Antenna for 1.25-cm Touch-and-Proceed Communication," IEEE Symposium on VLSI Circuits, Hawaii, pp. 73-74, June 2010.
- [100] L. Liu, T. Sakurai, and M. Takamiya, "A Charge-Domain Auto- and Cross-Correlation Based IR-UWB Receiver with Power- and Area-efficient PLL for 62.5ps Step Data Synchronization in 65nm CMOS," IEEE Symposium on VLSI Circuits, Hawaii, pp. 27-28, June 2010.
- [101] M. Daito, Y. Nakata, S. Sasaki, H. Gomyo, H. Kusamitsu, Y. Komoto, K. Iizuka, K. Ikeuchi, G. Kim, M. Takamiya, and T. Sakurai, "Capacitively Coupled Non-Contact Probing Circuits for Membrane-Based Wafer-Level Simultaneous Testing," IEEE International Solid-State Circuits Conference (ISSCC), San Francisco, USA, pp. 144-145, Feb. 2010.
- [102] K. Ishida, N. Masunaga, R. Takahashi, T. Sekitani, S. Shino, U. Zschieschang, H. Klauk, M. Takamiya, T. Someya, and T. Sakurai, "User Customizable Logic Paper (UCLP) with Organic Sea-of Transmission-Gates (SOTG) Architecture and Ink-Jet Printed Interconnects," IEEE International Solid-State Circuits Conference (ISSCC), San Francisco, USA, pp. 138-139, Feb. 2010.
- [103] T. Someya, T. Sekitani, M. Takamiya, T. Sakurai, U. Zschieschang, and H. Klauk, "Printed Organic Transistors: Toward Ambient Electronics," IEEE International Electron Devices Meeting (IEDM), Baltimore, USA, pp. 9-14, Dec. 2009. (Plenary talk)
- [104] G.-S. Kim, M. Takamiya, and T. Sakurai, "A Capacitive Coupling Interface with High Sensitivity for Wireless Wafer Testing," IEEE International 3D System Integration Conference (3DIC), San Francisco, USA, Sep. 2009.
- [105] T. Yasufuku, K. Ishida, S. Miyamoto, H. Nakai, M. Takamiya, T. Sakurai, and K. Takeuchi, "Effect of Resistance of TSV's on Performance of Boost Converter for Low Power 3D SSD with NAND Flash Memories," IEEE International 3D System Integration Conference (3DIC), San Francisco, USA, Sep. 2009.

- [106] K. Ikeuchi, K. Sakaida, K. Ishida, T. Sakurai, and M. Takamiya, "Switched Resonant Clocking (SRC) Scheme Enabling Dynamic Frequency Scaling and Low-Speed Test," IEEE Custom Integrated Circuits Conference (CICC), San Jose, USA, pp. 33-36, Sep. 2009.
- [107] T. Yasufuku, K. Ishida, S. Miyamoto, H. Nakai, M. Takamiya, T. Sakurai, and K. Takeuchi, "Inductor Design of 20-V Boost Converter for Low Power 3D Solid State Drive with NAND Flash Memories," International Symposium on Low Power Electronics and Design (ISLPED), San Francisco, USA, pp. 87-91, Aug. 2009.
- [108] N. Masunaga, K. Ishida, Z. Zhou, T. Yasufuku, T. Sekitani, M. Takamiya, T. Someya, and T. Sakurai, "A Flexible EMI Measurement Sheet to Measure Electric and Magnetic Fields Separately with Distributed Antennas and LSI's," IEEE International Symposium on Electromagnetic Compatibility, Austin, USA, pp. 156-160, Aug. 2009.
- [109] L. Liu, T. Sakurai, and M. Takamiya, "A 1.28mW 100Mb/s Impulse UWB Receiver with Charge-Domain Correlator and Embedded Sliding Scheme for Data Synchronization," IEEE Symposium on VLSI Circuits, Kyoto, pp. 146-147, June 2009.
- [110] K. Ishida, N. Masunaga, Z. Zhou, T. Yasufuku, T. Sekitani, U. Zschieschang, H. Klauk, M. Takamiya, T. Someya, and T. Sakurai, "A Stretchable EMI Measurement Sheet with 8×8 Coil Array, 2V Organic CMOS Decoder, and -70dBm EMI Detection Circuits in 0.18μm CMOS," IEEE International Solid-State Circuits Conference (ISSCC), San Francisco, USA, pp. 472-473, Feb. 2009.
- [111] K. Ishida, T. Yasufuku, S. Miyamoto, H. Nakai, M. Takamiya, T. Sakurai, and K. Takeuchi, "A 1.8V 30nJ Adaptive Program-Voltage (20V) Generator for 3D-Integrated NAND Flash SSD," IEEE International Solid-State Circuits Conference (ISSCC), San Francisco, USA, pp. 238-239, Feb. 2009.
- [112] L. Liu, Y. Miyamoto, Z. Zhou, K. Sakaida, J. Ryu, K. Ishida, M. Takamiya, and T. Sakurai, "A 100Mbps, 0.19mW Asynchronous Threshold Detector with DC Power-Free Pulse Discrimination for Impulse UWB Receiver," Asia-South Pacific Design Automation Conference (ASP-DAC), Yokohama, Japan, pp. 97-98, Jan. 2009.
- [113] Y. Kato, T. Sekitani, Y. Noguchi, M. Takamiya, T. Sakurai, and T. Someya, "A Large-Area, Flexible, Ultrasonic Imaging System with a Printed Organic Transistor Active Matrix," IEEE International Electron Devices Meeting (IEDM), San Francisco, USA, pp. 97-100, Dec. 2008.
- [114] K. Ikeuchi, K. Inagaki, H. Kusamitsu, T. Ito, M. Takamiya and T. Sakurai, "500Mbps, 670μW/pin Capacitively Coupled Receiver with Self Reset Scheme for Wireless Connectors," IEEE Asian Solid-State Circuits Conference (A-SSCC), Fukuoka, Japan, pp. 93-96, Nov. 2008.
- [115] Y. Nakamura, D. Levacq, L. Xiao, T. Minakawa, T. Niiyama, M. Takamiya, and T. Sakurai, "1/5 Power Reduction by Global Optimization Based on Fine-Grained Body Biasing," IEEE Custom Integrated Circuits Conference (CICC), San Jose, USA, pp. 547-550, Sep. 2008.
- [116] T. Niiyama, K. Ishida, M. Takamiya, and T. Sakurai, "Expected Vectorless Teacher-Student Swap (TSS) Test Method with Dual Power Supply Voltages for 0.3V Homogeneous Multi-core LSI's," IEEE Custom Integrated Circuits Conference (CICC), San Jose, USA, pp. 137-140, Sep. 2008.
- [117] S. Choi, K. Ikeuchi, H. Kim, K. Inagaki, M. Murakata, N. Nishiguchi, M. Takamiya, and T. Sakurai, "Experimental Assessment of Logic Circuit Performance Variability with Regular Fabrics at 90nm Technology Node," 34th European Solid-State Circuits Conference (ESSCIRC), Edinburgh, UK, pp. 50-53, Sep. 2008.
- [118] T. Niiyama, P. Zhe, K. Ishida, M. Murakata, M. Takamiya, and T. Sakurai, "Increasing Minimum Operating Voltage (VDDmin) with Number of CMOS Logic Gates and Experimental Verification with up to 1Mega-Stage Ring Oscillators," International Symposium on Low Power Electronics and Design (ISLPED), Bangalore, India, pp. 117-122, Aug. 2008.
- [119] L. Liu, Y. Miyamoto, Z. Zhou, K. Sakaida, J. Ryu, K. Ishida, M. Takamiya, and T. Sakurai, "A 100Mbps, 0.41mW, DC-960MHz Band Impulse UWB Transceiver in 90nm CMOS," IEEE Symposium on VLSI Circuits, Honolulu, Hawaii, USA, pp. 118-119, June 2008.

- [120] M. Takamiya, K. Onizuka, and T. Sakurai, "3D-Structured On-Chip Buck Converter for Distributed Power Supply System in SiPs," IEEE International Conference on IC Design and Technology (ICICDT), Grenoble, France, pp. 33-36, June 2008. (Invited)
- [121] S. Sakai, M. Takahashi, K. Takeuchi, Q.-H. Li, T.i Horiuchi, S. Wang, K.-Y. Yun, M. Takamiya, and T. Sakurai, "Highly Scalable Fe(Ferroelectric)-NAND Cell with MFIS(Metal-Ferroelectric-Insulator-Semiconductor) Structure for Sub-10nm Tera-Bit Capacity NAND Flash Memories," IEEE Nonvolatile Semiconductor Memory Workshop (NVSMW), Opio, France, pp. 103-104, May 2008.
- [122] L. Liu, M. Takamiya, T. Sekitani, Y. Noguchi, S. Nakano, K. Zaitso, T. Kuroda, T. Someya, and T. Sakurai, "3D Integration of LSI, Plastic MEMS Switches and Organic Transistors for Printable Communication Sheet," International 3D System Integration Conference (3D-SIC), Tokyo, Japan pp. 385-394, May 2008.
- [123] K. Onizuka, M. Takamiya, and T. Sakurai, "A Design Methodology of Chip-to-Chip Wireless Power Transmission System," International 3D System Integration Conference (3D-SIC), Tokyo, Japan pp. 97-103, May 2008.
- [124] T. Niiyama, P. Zhe, K. Ishida, M. Murakata, M. Takamiya, and T. Sakurai, "Dependence of Minimum Operating Voltage (VDDmin) on Block Size of 90-nm CMOS Ring Oscillators and Its Implications in Low Power DFM," IEEE International Symposium on Quality Electronic Design (ISQED), San Jose, USA, pp. 133-136, March 2008.
- [125] L. Liu, M. Takamiya, T. Sekitani, Y. Noguchi, S. Nakano, K. Zaitso, T. Kuroda, T. Someya, and T. Sakurai, "A 107pJ/b 100kb/s 0.18um Capacitive-Coupling Transceiver for Printable Communication Sheet," IEEE International Solid-State Circuits Conference (ISSCC), San Francisco, USA, pp. 292-293, Feb. 2008.
- [126] T. Sekitani, Y. Noguchi, S. Nakano, K. Zaitso, Y. Kato, M. Takamiya, T. Sakurai, and T. Someya, "Communication Sheets Using Printed Organic Nonvolatile Memories," IEEE International Electron Devices Meeting (IEDM), Washington DC, USA, pp. 221 - 224, Dec. 2007.
- [127] M. Takamiya, T. Sekitani, Y. Miyamoto, Y. Noguchi, H. Kawaguchi, T. Someya, and T. Sakurai, "Wireless Power Transmission Sheet with Organic FETs and Plastic MEMS Switches," International Display Workshop (IDW), Sapporo, Japan, pp. 95-98, Dec. 2007. (Invited)
- [128] D. Levacq, M. Takamiya and T. Sakurai, "Backgate Bias Accelerator for 10ns-order Sleep-to-Active Modes Transition Time," IEEE Asian Solid-State Circuits Conference (A-SSCC), Jeju, Korea, pp. 296-299, Nov. 2007.
- [129] D. Levacq, T. Minakawa, M. Takamiya, and T. Sakurai, "A Wide Range Spatial Frequency Analysis of Intra-Die Variations with 4-mm 4000 x 1 Transistor Arrays in 90nm CMOS," IEEE Custom Integrated Circuits Conference (CICC), San Jose, USA, pp. 257-560, Sep. 2007.
- [130] D. Levacq, M. Yazid, H. Kawaguchi, M. Takamiya, and T. Sakurai, "Half VDD Clock-Swing Flip-Flop with Reduced Contention for up to 60% Power Saving in Clock Distribution," 33rd European Solid-State Circuits Conference (ESSCIRC), Munich, Germany, pp. 190-193, Sep. 2007.
- [131] Y. Nakamura, M. Takamiya, and T. Sakurai, "An On-Chip Noise Canceller with High Voltage Supply Lines for Nanosecond-Range Power Supply Noise," IEEE Symposium on VLSI Circuits, Kyoto, pp. 124-125, June 2007.
- [132] M. Takamiya, T. Sekitani, Y. Miyamoto, Y. Noguchi, H. Kawaguchi, T. Someya, and T. Sakurai, "Design for Mixed Circuits of Organic FETs and Plastic MEMS Switches for Wireless Power Transmission Sheet," IEEE International Conference on IC Design and Technology (ICICDT), Austin, USA, pp. 168-171, May 2007. (Invited)
- [133] K. Onizuka, M. Takamiya, H. Kawaguchi, and T. Sakurai, "A Design Methodology of Chip-to-Chip Wireless Power Transmission System," IEEE International Conference on IC Design and Technology (ICICDT), Austin, USA, pp. 143-146, May 2007. (Invited)
- [134] T. Someya, T. Sekitani, Y. Noguchi, S. Nakano, S. Takatani, M. Takamiya and T. Sakurai, "Printed Organic Transistors for Large-area Sensors and Actuators," Material Research Society (MRS) Spring Meeting. Symposium, O10.6, San Francisco, USA, April 2007.

- [135] S. Nakano, T. Sekitani, S. Takatani, M. Takamiya, T. Sakurai and T. Someya, "Printed Plastic Switch Array for the Application to High Power Electronics," Material Research Society (MRS) Spring Meeting. Symposium, N8.9, San Francisco, USA, April 2007.
- [136] M. Takamiya, T. Sekitani, Y. Miyamoto, Y. Noguchi, H. Kawaguchi, T. Someya, and T. Sakurai, "Design Solutions for Multi-Object Wireless Power Transmission Sheet Based on Plastic Switches," IEEE International Solid-State Circuits Conference (ISSCC), San Francisco, USA, pp. 362-363, Feb. 2007.
- [137] T. Sekitani, M. Takamiya, Y. Noguchi, S. Nakano, Y. Kato, K. Hizu, H. Kawaguchi, T. Sakurai, and T. Someya, "A Large-Area Flexible Wireless Power Transmission Sheet Using Printed Plastic MEMS Switches and Organic Field-Effect Transistors," IEEE International Electron Devices Meeting (IEDM), San Francisco, USA, pp. 287 - 290, Dec. 2006.
- [138] M. Takamiya, T. Sekitani, Y. Kato, H. Kawaguchi, T. Someya, and T. Sakurai, "Flexible Braille Sheet Display with Organic FETs and Plastic Actuators," International Display Workshop (IDW), Otsu, Japan, pp. 261-264, Dec. 2006. (Invited)
- [139] K. Onizuka, H. Kawaguchi, M. Takamiya and T. Sakurai, "Stacked-chip Implementation of On-chip Buck Converter for Power-Aware Distributed Power Supply Systems," IEEE Asian Solid-State Circuits Conference (A-SSCC), Hangzhou, China, pp. 127-130, Nov. 2006.
- [140] M. Takamiya, "Large Area Electronics with Organic FETs," Japan-America Frontiers of Engineering Symposium, Tsukuba, Japan, Nov. 2006. (Invited)
- [141] K. Onizuka, H. Kawaguchi, M. Takamiya, T. Kuroda and T. Sakurai, "Chip-to-Chip Inductive Wireless Power Transmission System for SiP Applications," IEEE Custom Integrated Circuits Conference (CICC), San Jose, USA, pp. 575-578, Sep. 2006.
- [142] A. Tamtrakarn, H. Ishikuro, K. Ishida, M. Takamiya, and T. Sakurai, "A 1-V 299 μ W Flashing UWB Transceiver Based on Double Thresholding Scheme," IEEE Symposium on VLSI Circuits, Honolulu, Hawaii, USA, pp. 250-251, June 2006.
- [143] K. Inagaki, D. Antono, M. Takamiya, S. Kumashiro, and T. Sakurai, "A 1-ps Resolution On-chip Sampling Oscilloscope with 64:1 Tunable Sampling Range Based on Ramp Waveform Division Scheme," IEEE Symposium on VLSI Circuits, Honolulu, Hawaii, USA, pp. 76-77, June 2006.
- [144] M. Takamiya, T. Sekitani, Y. Kato, H. Kawaguchi, T. Someya, and T. Sakurai, "Low Power and Flexible Braille Sheet Display with Organic FET's and Plastic Actuators," IEEE International Conference on IC Design and Technology (ICICDT), Padova, Italy, pp. 219-222, May 2006. (Invited)
- [145] K. Hizu, T. Sekitani, Y. Shimada, J. Otsuki, M. Takamiya, T. Sakurai, and T. Someya, "Low Voltage Operation Of Organic CMOS Inverter Circuit With Double-Gate Structure," Material Research Society (MRS) Spring Meeting. Symposium, M10.59, San Francisco, USA, April 2006.
- [146] M. Takamiya, T. Sekitani, Y. Kato, H. Kawaguchi, T. Someya, and T. Sakurai, "An Organic FET SRAM for Braille Sheet Display with Back Gate to Increase Static Noise Margin," IEEE International Solid-State Circuits Conference (ISSCC), San Francisco, USA, pp. 276-277, Feb. 2006.
- [147] Y. Kato, S. Iba, T. Sekitani, Y. Noguchi, K. Hizu, X. Wang, K. Takenoshita, Y. Takamatsu, S. Nakano, K. Fukuda, K. Nakamura, T. Yamaue, M. Doi, K. Asaka, H. Kawaguchi, M. Takamiya, T. Sakurai, and T. Someya, "A Flexible, Lightweight Braille Sheet Display with Plastic Actuators Driven by An Organic Field-Effect Transistor Active Matrix," IEEE International Electron Devices Meeting (IEDM), Washington DC, USA, pp. 105 - 108, Dec. 2005.
- [148] K. Yamaguchi, K. Sunaga, S. Kaeriyama, T. Nedachi, M. Takamiya, K. Nose, Y. Nakagawa, M. Sugawara, and M. Fukaishi, "12Gb/s Duobinary Signaling with x2 Oversampled Edge Equalization," IEEE International Solid-State Circuits Conference (ISSCC), San Francisco, USA, pp. 70 - 71, Feb. 2005.
- [149] M. Takamiya and M. Mizuno, "A Sampling Oscilloscope Macro toward Feedback Physical Design Methodology," IEEE Symposium on VLSI Circuits, Honolulu, Hawaii, USA, pp. 240 - 243, June. 2004.
- [150] M. Takamiya, H. Inohara, and M. Mizuno, "On-Chip Jitter-Spectrum-Analyzer for High-Speed Digital Designs," IEEE International Solid-State Circuits Conference (ISSCC), San Francisco, USA, pp. 423 - 426, Feb. 2004.

- [151] M. Takamiya "Challenges to Dependable VLSIs", 44th Meeting of IFIP (International Federation for Information Processing), Working Group 10.4 on Dependable Computing and Fault Tolerance, Workshop on Hardware Design and Dependability, Monterey, CA, USA, pp. 181 - 198, June 2003.
- [152] K. Kikuchi, M. Takamiya, Y. Kudo, K. Soejima, H. Honda, M. Mizuno, and S. Yamamichi, "A Package-process-oriented Multilevel 5-mm-thick Cu Wiring Technology with Pulse Periodic Reverse Electroplating and Photosensitive Resin," IEEE International Interconnect Technology Conference (IITC), San Francisco, USA, pp. 189 - 191, June. 2003.
- [153] M. Takamiya, T. Fukumoto, and M. Mizuno, "A 6.7-fF/ μm^2 Bias-Independent Gate Capacitor (BIGCAP) with Standard CMOS Process and its Application to the Loop Filter of a Differential PLL", 28th European Solid-State Circuits Conference (ESSCIRC), Florence, Italy, pp. 139 – 142, Sep. 2002.
- [154] M. Takamiya, M. Mizuno, and K. Nakamura, "An On-Chip 100GHz-Sampling Rate 8-channel Sampling Oscilloscope with Embedded Sampling Clock Generator," IEEE International Solid-State Circuits Conference (ISSCC), San Francisco, USA, pp. 182–183, Feb. 2002.
- [155] T. Hiramoto, M. Takamiya, H. Koura, T. Inukai, H. Gomyo, H. Kawaguchi, and T. Sakurai (Invited), "Optimum Device Parameters and Scalability of Variable Threshold CMOS (VTCMOS)", 2000 International Conference on Solid State Devices and Materials (SSDM), Sendai, Japan, pp. 372 - 373, August, 2000.
- [156] Y. Yasuda, M. Takamiya, and T. Hiramoto, "Threshold Voltage Fluctuations Induced by Statistical "Position" and "Number" Impurity Fluctuations in Bulk MOSFETs", 2000 Silicon Nanoelectronics Workshop, Hilton Hawaiian Village, Hawaii, USA, pp. 40 - 41, June, 2000.
- [157] T. Inukai, M. Takamiya, K. Nose, H. Kawaguchi, T. Hiramoto, T. Sakurai, "Boosted Gate MOS (BG MOS): Device/Circuit Cooperation Scheme to Achieve Leakage-Free Giga-Scale Integration", Custom Integrated Circuits Conference (CICC), Florida, USA, pp. 409 - 412, May, 2000.
- [158] H. Koura, M. Takamiya, and T. Hiramoto, "Optimum Conditions of Body Effect Factor and Substrate Bias in Variable Threshold Voltage MOSFETs", 1999 International Conference on Solid State Devices and Materials (SSDM'99), Nihon Toshi Center Kaikan, Tokyo, Japan, pp. 446 - 447, September, 1999.
- [159] Y. Yasuda, M. Takamiya, and T. Hiramoto, "Effects of Impurity Position Distribution on Threshold Voltage Fluctuations in Scaled MOSFETs", 1999 Silicon Nanoelectronics Workshop, Rihga Royal Hotel Kyoto, Kyoto, Japan, pp. 86 - 87, June, 1999.
- [160] T. Hiramoto, Y. Yasuda, M. Takamiya, "Threshold Voltage Fluctuations Induced by Statistical Position Distribution of Dopant Atoms in Scaled MOSFETs", International Symposium on Future of Intellectual Integrated Electronics (ISFIE), Sendai International Center, Miyagi, Japan, pp. 131 - 135, March, 1999.
- [161] M. Takamiya and T. Hiramoto, "High Performance Electrically Induced Body Dynamic Threshold SOI MOSFET (EIB-DTMOS) with Large Body Effect and Low Threshold Voltage", IEEE International Electron Devices Meeting (IEDM), San Francisco, USA, pp. 423 - 426, Dec. 1998.
- [162] T. N. Duyet, H. Ishikuro, M. Takamiya, T. Saraya, and T. Hiramoto, "Effects of Body Reverse Pulse Bias on Geometric Component of Charge Pumping Current in FD SOI MOSFETs", 1998 IEEE International SOI Conference, Stuart, Florida, USA, pp. 79 - 80, October, 1998.
- [163] T. N. Duyet, H. Ishikuro, Y. Shi, T. Saraya, M. Takamiya, and T. Hiramoto, "Measurement of Energetic and Lateral Distribution of Interface State Density in FD SOI MOSFETs", 1998 International Conference on Solid State Devices and Materials (SSDM'98), International Conference Center Hiroshima, Hiroshima, Japan, pp. 322 - 323, September, 1998.
- [164] M. Takamiya, T. Saraya, T. N. Duyet, Y. Yasuda, and T. Hiramoto, "High Performance Accumulated Back-Interface Dynamic Threshold SOI MOSFET's (AB-DTMOS) with Large Body Effect at Low Supply Voltage", International Conference on Solid State Devices and Materials (SSDM), International Conference Center Hiroshima, Hiroshima, Japan, pp. 312 - 313, Sep. 1998.
- [165] Y. Yasuda, M. Takamiya, and T. Hiramoto, "Scaling of Delta-Doped Channel MOSFET with Suppressed Statistical V_{th} Fluctuations", 1998 International Workshop on Advanced LSIs --- Scaled Device/Process and High Performance Circuits ---, Hokkaido University, Sapporo, pp. 13 - 18, July, 1998.

- [166] M. Takamiya, Y. Yasuda, and T. Hiramoto, "Deep Sub-0.1 μ m Fully Depleted SOI MOSFET's with Ultra-Thin Silicon Film and Thick Buried Oxide for Low-Power Applications," Proceedings of International Semiconductor Device Research Symposium, Charlottesville, Virginia, USA, pp. 215 - 218, Dec., 1997.
- [167] T. Mukaiyama, K. Saito, H. Ishikuro, M. Takamiya, T. Saraya, and T. Hiramoto, "Fabrication of Gate-All Around MOSFET by Silicon Anisotropic Etching Technique", International Workshop on Nano-Physics and Electronics (NPE'97), Institute of Industrial Science, University of Tokyo, Tokyo, Japan, pp. 45 - 46, September, 1997
- [168] T. Saraya, M. Takamiya, T. N. Duyet, and T. Hiramoto, "New Measurement Technique of Sub-Bandgap Impact Ionization Current by Transient Characteristics of Partially Depleted SOI MOSFETs", 1997 International Conference on Solid State Devices and Materials (SSDM'97), Act City Hamamatsu, Hamamatsu, Japan, pp. 554 - 555, September, 1997.
- [169] T. Saraya, M. Takamiya, T. N. Duyet, T. Tanaka, H. Ishikuro, T. Hiramoto, and T. Ikoma, "Floating Body Effects in 0.15 μ m Partially Depleted SOI MOSFETs below 1 V", 1996 IEEE International SOI Conference, Fort Myers, Florida, USA, pp. 70 - 71, October, 1996.