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Makoto Takamiya

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Research Interests

VLSI circuit design, especially

(1) Digital gate driver and sensor ICs for power electronics
(2) Integrated power management circuits for automotive and industrial applications
(3) Integrated power management circuits for wireless powering and energy harvesting for wearable and IoT applications

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

04/19 – present **Professor** in University of Tokyo, Japan
Institute of Industrial Science
04/05 – 03/19 **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] 1st prize of the ECCE 2022 William Portnoy Award, IEEE- IAS Power Electronics Devices and Components Committee (PEDCC), 2023.
[2] Electronics Society Award, Electronics Society, The Institute of Electronics, Information and Communication Engineers, 2020.
[3] Best Paper Award, IEEE International Future Energy Electronics Conference (IFEEC), 2019.
[4] Third Prize Paper Award, Industrial Power Conversion Systems Department, Industrial Power Converters Committee of IEEE Industrial Applications Society, 2019.
[5] IEEE SSCS Kansai Chapter Academic Research Award, IEEE Solid-State Circuits Society Kansai Chapter, 2015.
[6] Best Paper Award, IEEE Wireless Power Transfer Conference (WPTC), 2013.

[7] Best Design Award in University LSI Design Contest, Asia-South Pacific Design Automation Conference (ASP-DAC), 2012.

[8] Paul Rappaport Award 2010 (Best paper in EDS publications), IEEE Electron Devices Society.

[9] IEEE SSCS Kansai Chapter Academic Research Award, IEEE Solid-State Circuits Society Kansai Chapter, 2011.

[10] Paul Rappaport Award 2009 (Best paper in EDS publications), IEEE Electron Devices Society.

[11] IEEE SSCS Kansai Chapter Academic Research Award, IEEE Solid-State Circuits Society Kansai Chapter, 2009.

[12] SSDM Young Researcher Award, International Conference on Solid State Devices and Materials, 1999.

Professional Activities

[1] Member, Technical Program Committee, Power Management Track, IEEE European Solid-State Electronics Research Conference (ESSERC) (2024 -)

[2] Associate Editor, IEEE Transactions on Circuits and Systems II: Express Briefs (IEEE TCAS-II) (2024 - 2025)

[3] Elected member, Administrative Committee (AdCom), IEEE Solid-State Circuits Society (2023 - 2025)

[4] Member, Technical Program Committee, Power IC Design Sub-committee, IEEE International Symposium on Power Semiconductor Devices and ICs (ISPSD) (2023 -)

[5] Guest Editor-in-Chief, Special Section on Analog Circuits and Their Application Technologies, IEICE Transaction on Electronics, E105-C, No.10, Oct. 2022.

[6] Member, Technical Program Committee, Emerging ICs Sub-committee, IEEE International Symposium on Radio-Frequency Integration Technology (RFIT) (2022 -)

[7] Track Chair, Smart Power Track, IEEE International Midwest Symposium on Circuits and Systems (MWSCAS) (2022 -)

[8] Member, Technical Program Committee, Analog Circuits and Systems Sub-committee, IEEE Asian Solid-State Circuits Conference (A-SSCC) (2020 - present)

[9] Member, Technical Program Committee, IEEE Symposium on VLSI Circuits (2020 - present)

[10] Far East Regional Chair, IEEE International Solid-State Circuits Conference (ISSCC) (2020)

[11] Distinguished Lecturer, IEEE Solid-State Circuits Society (2019 - 2020)

[12] Far East Regional Vice-Chair, IEEE International Solid-State Circuits Conference (ISSCC) (2019)

[13] Far East Regional Secretary, IEEE International Solid-State Circuits Conference (ISSCC) (2018)

[14] Member, Technical Program Committee, Power Management Sub-committee, IEEE International Solid-State Circuits Conference (ISSCC) (2018 - 2020)

[15] Member, Technical Program Committee, Analog Sub-committee, IEEE International Solid-State Circuits Conference (ISSCC) (2015 - 2017)

[16] Member, Technical Program Committee, IEEE SOI-3D-Subthreshold Microelectronics Technology Unified Conference (IEEE S3S) (2014 - 2019)

[17] Associate editor, IEICE Electronics Express (ELEX) (2013 - 2015)

[18] Member, Technical Program Committee, IEEE International 3D Systems Integration Conference (3DIC) (2009 - 2015)

[19] Member, Technical Program Committee, IEEE Symposium on VLSI Circuits (2009 - 2017)

[20] 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)

[21] Member, Technical Program Committee, Advanced Silicon Circuits and Systems Sub-committee, International Conference on Solid State Devices and Materials (SSDM) (2003 - 2004)

Publications

Statistics

IEEE Solid-State Circuits Society: JSSC (22), ISSCC (19), VLSIC (18), CICC (14), ESSCIRC (7), A-SSCC (8)

IEEE Power Electronics Society: TPEL (4), APEC (12), ECCE (9), ECCE Asia (5), SPEC (5)
IEEE Circuits and Systems Society: TCAS-I (10), TCAS-II (5), TVLSI (3), ISCAS (2)
Patents: Japan (42)

(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] Z. Lou, T. Mamee, K. Hata, M. Takamiya, S. Nishizawa, and W. Saito, "Mechanism of Gate Voltage Spike under Digital Gate Control at IGBT Switching Operations," Elsevier Power Electronic Devices and Components, Vol. 7, 100054, pp. 1 - 7, April 2024.

[2] H. Qiu, X. Zhang, J. Chen, M. Takamiya, and Y. Shi, "A 6.78-MHz Coupling Coefficient Sensorless Wireless Power Transfer System Charging Multiple Receivers With Efficiency Maximization by Adaptive Magnetic Field Distributor IC," IEEE Transactions on Circuits and Systems—I: Regular Papers, Vol. 71, No. 2, pp. 974 - 983, Feb. 2024.

[3] Q. Ma, X. Zhang, A. Zhao, H. Li, Y. Jiang, M. -K. Law, M. Takamiya, R. P. Martins, and P. -I. Mak, " A 10.5 W, 93% Efficient Dual-Path Hybrid (DPH)-Based DC–DC Converter Incorporating a Continuous-Current-Input Switched-Capacitor Stage and Enhanced IL Reduction for 12 V/24 V Inputs," IEEE Transactions on Circuits and Systems—I: Regular Papers, Vol. 70, No. 12, pp. 5482 - 5495, Dec. 2023.

[4] D. -H. Yao, T. -N. Liu, M. Takamiya, and P. -H. Chen, "A 6.78-MHz Wireless Power Transfer System With Dual-Output Resonant Current-Mode Regulating Rectifier and Transmission Power Regulation," IEEE Transactions on Circuits and Systems—I: Regular Papers, Vol. 70, No. 12, pp. 4986 - 4998, Dec. 2023.

[5] X. Zhang, Q. Ma, A. Zhao, Y. Jiang, M. -K. Law, J. Jiang, M. Takamiya, R. P. Martins, and P. -I. Mak, " A 12/24 V-Input HV-LV-Separated Hybrid SC PoL Converter With 355 mW/mm3 Power Density at 3 A Load Current and 15.2 mm3 Power Passives," IEEE Transactions on Power Electronics, Vol. 38, No. 12, pp. 15109 - 15114, Dec. 2023.

[6] T. Mamee, Z. Lou, K. Hata, M. Takamiya, S. Nishizawa, and W. Saito, "Bond Wire Lift-off Detection by Gate Voltage Waveform in IGBT Turn-Off Process Enhanced by Digital Gate Control," Elsevier Power Electronic Devices and Components, Vol. 6, 100052, pp. 1 - 8, Oct. 2023.

[7] X. Mu, G. Zhao, A. Zhao, Y. Jiang, M. -K. Law, M. Takamiya, P. -I. Mak, and R. P. Martins, "Floating-Domain Integrated GaN Driver Techniques for DC–DC Converters: A Review," IEEE Transactions on Circuits and Systems—I: Regular Papers, Vol. 70, No. 9, pp. 3790 - 3805, Sept. 2023.

[8] T. -W. Wang, T. Inuma, P. -H. Chen, and M. Takamiya, "Search Method of Robust Gate Driving Vectors for Digital Gate Drivers With Low Test Cost Against Load Current and Temperature Variations in IGBTs," IEEE Transactions on Power Electronics, Vol.38, No.9, pp. 10669 - 10679, Sep. 2023.

[9] T. Mamee, Z. Lou, K. Hata, M. Takamiya, S. Nishizawa, and W. Saito, "Enhancement of Turn-Off Gate Voltage Waveform Change by Digital Gate Control for Bond Wire Lift-Off Detection in IGBT Module," Elsevier Microelectronics Reliability, Vol. 147, 115067, pp. 1 - 6, Aug. 2023.

[10] R. Wang, C. -H. Wu, and M. Takamiya, "Integrated Imager and 3.22 μs/Kernel-Latency All-Digital In-Imager Global-Parallel Binary Convolutional Neural Network Accelerator for Image Processing," IEEE Access, Vol.11, pp. 74364 - 74378, July 2023.
[11] K. Horii, H. Yano, K. Hata, R. Wang, K. Mikami, K. Hatori, K. Tanaka, W. Saito, and M. Takamiya, "Large-Current Output Digital Gate Driver for 6500 V, 1000 A IGBT Module to Reduce Switching Loss and Collector Current Overshoot," IEEE Transactions on Power Electronics, Vol.38, No.7, pp. 8075 - 8088, July 2023.
[12] H. Yamasaki, K. Hata, and M. Takamiya, "Estimation of Both Junction Temperature and Load Current of IGBTs from Output Voltage of Gate Driver," IEEJ Journal of Industry Applications, Vol.12, No.3, pp. 392 - 400, May 2023.
[13] Z. Lou, T. Mamee, K. Hata, M. Takamiya, S. -I. Nishizawa, and W. Saito, "IGBT Power Module Design for Suppressing Gate Voltage Spike at Digital Gate Control," IEEE Access, Vol.11, pp. 6632 - 6640, Jan. 2023.
[14] H. Qiu, T. Sakurai, and M. Takamiya, "A 6.78-MHz Multiple-Transmitter Wireless Power Transfer System With Efficiency Maximization by Adaptive Magnetic Field Adder IC," IEEE Journal of Solid-State Circuits, Vol.57, No.8, pp. 2390 - 2403, Aug. 2022.
[15] Y. S. Cheng, D. Yamaguchi, T. Mannen, K. Wada, T. Sai, K. Miyazaki, M. Takamiya, and T. Sakurai, "High-Speed Searching of Optimum Switching Pattern for Digital Active Gate Drive to Adapt to Various Load Conditions," IEEE Transactions on Industry Electronics, Vol.69, No.5, pp. 5185 - 5184, May 2022.
[16] D. Yamaguchi, Y. S. Cheng, T. Mannen, H. Obara, K. Wada, T. Sai, M. Takamiya, and T. Sakurai, "An Optimization Method of a Digital Active Gate Driver Under Continuous Switching Operation Being Capable of Suppressing Surge Voltage and Power Loss in PWM Inverters," IEEE Transactions on Industry Applications, Vol.58, No.1, pp. 481 - 493, Jan./Feb. 2022.
[17] H. Qiu, Y. Jiang, Y. Shi, T. Sakurai, and M. Takamiya, "Analysis and Mitigation of Coupling-Dependent Data Flipping in Wireless Power and Data Transfer System," IEEE Transactions on Circuits and Systems—I: Regular Papers, Vol. 68, No. 12, pp. 5182 - 5193, Dec. 2021.
[18] Q. Ma, X. Zhang, Y. Jiang, K. Hata, M. Takamiya, M.-K. Law, P.-I. Mak, and R. P. Martins, "A Multi-Path Switched-Capacitor-Inductor Hybrid DC-DC Converter with Reduced Inductor Loss and Extended Voltage Conversion Range," IEICE Electronics Express, Vol.18, Issue 22, Pages 20210405, Nov. 2021.
[19] Y. Yamauchi, T. Sai, K. Hata, and M. Takamiya, "0.55 W, 88%, 78 kHz, 48 V-to-5 V Fibonacci Hybrid DC–DC Converter IC Using 66 mm3 of Passive Components With Automatic Change of Converter Topology and Duty Ratio for Cold-Crank Transient," IEEE Transactions on Power Electronics, Vol.36, No.8, pp. 9273 - 9284, Aug. 2021.
[20] F. -B. Yang, J. Fuh, Y. -H. Li, M. Takamiya, and P. -H. Chen, "Structure-Reconfigurable Power Amplifier (SR-PA) and 0X/1X Regulating Rectifier for Adaptive Power Control in Wireless Power Transfer System," IEEE Journal of Solid-State Circuits, Vol.56, No.7, pp. 2054 - 2064, July 2021.
[21] H. Qiu, T. Sakurai, and M. Takamiya, "Digital Transmitter Coil for Wireless Power Transfer Robust Against Variation of Distance and Lateral Misalignment," IEEE Transactions on Microwave Theory and Techniques, Vol.68, No.9, pp. 4031 - 4039, Sep. 2020.
[22] Y. Yamauchi, T. Sai, T. Sakurai, and M. Takamiya, "Theoretical and Experimental Analyses of Dynamic Performance of Three-Level Buck Converters in Discontinuous Conduction Mode for Standby Mode Power Supply," IEEJ Journal of Industry Applications, Vol.9, No.3, pp. 271 - 281, May 2020.
[23] H.- H. Lee, C.- W. Liu, M. Takamiya, and P. -H. Chen, "Single-Inductor Dual-Input Dual-Output Battery-PV Hybrid System with 2-D Adaptive On-Time Control for Internet of Things," IEEE Transactions on Circuits and Systems—I: Regular Papers, Vol. 67, No. 3, pp. 1069 - 1078, March 2020.
[24] Y. 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 Reducing Both Switching Loss and Surge Voltage," IEEE Transactions on Industry Applications, Vol.55, No.5, pp. 5023 - 5031, Sep./Oct. 2019.
[25] T. Someya, K. Matsunaga, H. Morimura, T. Sakurai, and M. Takamiya, "A 0.90–4.39-V Detection Voltage Range, 56-Level Programmable Voltage Detector Using Fine Voltage-Step Subtraction for Battery Management," IEEE Transactions on Circuits and Systems—I: Regular Papers, Vol. 66, No. 3, pp. 1270 - 1279, March 2019.

[26] T. Someya, A. K. M. M. Islam, T. Sakurai, and M. Takamiya, "An 11-nW CMOS Temperature-to-Digital Converter Utilizing Sub-Threshold Current at Sub-Thermal Drain Voltage," IEEE Journal of Solid-State Circuits, Vol.54, No.3, pp. 613 - 622, March 2019.

[27] T. Sai, Y. Yamauchi, H. Kando, T. Funaki, T. Sakurai, and M. Takamiya, "2/3 and 1/2 Reconfigurable Switched Capacitor DC–DC Converter With 92.9% Efficiency at 62 mW/mm2 Using Driver Amplitude Doubler," IEEE Transactions on Circuits and Systems—II: Express Briefs, Vol. 65, No. 11, pp. 1654 - 1658, Nov. 2018.

[28] 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.

[29] 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.

[30] 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," Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT), Volume 1, Issue 4, Article No. 166, 17 pages, Dec. 2017.

[31] 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.

[32] 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.

[33] 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.

[34] 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.

[35] 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.

[36] 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.

[37] 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.

[38] 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.

[39] 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.

[40] 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.

[41] 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.

[42] 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," Journal of the Japan Society of Powder and Powder Metallurgy, Vol. 61, No. S1, pp. S340-S342, May 2014.

[43] K. Mori, Y. Okuma, X. Zhang, H. Fuketa, T. Sakurai, and M. Takamiya, "Analog-Assisted Digital Low Dropout Regulator with Fast Transient Response and Low Output Ripple" Japanese Journal of Applied Physics, Vol. 53, No. 4S, 04EE22, April, 2014.

[44] 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.

[45] 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.

[46] 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.

[47] 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.

[48] 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.

[49] 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)

[50] 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.

[51] T. Yokota, T. Sekitani, T. Tokuhara, N. Take, U. Zschieschang, H. Klauk, K. Takimiya, 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.

[52] 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.

[53] 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.

[54] 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.

[55] 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.

[56] 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.

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[58] 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.

[59] 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.

[60] 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.

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