

CURRICULUM VITAE

Naehyuck Chang, Ph.D.

Dept. of Computer Science and Engineering

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EDUCATION

Doctor of Philosophy

Dept. of Control and Instrumentation Engineering, Seoul National University, Seoul, Korea, 1996.

Master of Science

Dept. of Control and Instrumentation Engineering, Seoul National University, Seoul, Korea, 1992.

Bachelor of Science

Dept. of Control and Instrumentation Engineering, Seoul National University, Seoul, Korea, 1989.

RESEARCH INTERESTS

Low-power embedded systems

Hybrid electrical energy storage systems

Next-generation portable energy sources including photovoltaic cells and fuel cells

Energy efficiency in large-scale systems

Electromobility and electric vehicle

Electronics design automation for emerging applications

ACADEMIC/TEACHING EXPERIENCE

Vice Dean for Information Technology College of Engineering, Seoul National University, 2011 to 2013.

Professor Dept. of Computer Science and Engineering, Seoul National University, 2009 to present.

Visiting Professor Dept. of Electrical Engineering, University of Southern California, 2009 to 2010.

Associate Professor Dept. of Computer Science and Engineering, Seoul National University, 2004 to 2009.

Visiting Associate Professor Dept. of Computer Science and Engineering, Arizona State University, 2005 to 2006.

Assistant Professor Dept. of Computer Science and Engineering, Seoul National University, 2000 to 2004.

Full-time Lecturer Dept. of Computer Engineering, Seoul National University, 1997 to 2000.

Visiting Scholar School of EECS, University of Michigan, Ann Arbor, 1997.

ACADEMIC HONORS AND AWARDS

ACM Distinguished Scientist, Association for Computing Machinery (ACM), 2012.

IEEE Fellow, Institute of Electrical and Electronics Engineers (IEEE), 2012.

Low-Power Design Contest Award First-Generation Hybrid Electrical Energy Storage System, International Symposium on Low-Power Electronics and Design (ISLPED), Association for Computing Machinery (ACM), 2012.

ACM SIGDA Service Award, Association for Computing Machinery (ACM), 2012.

SAE Vincent Bendix Automotive Electronics Engineering Award, SAE International, 2012.

Sinyang Academic Award, Sinyang Cultural Foundation: 2011.

Recognition of Service Award in appreciation for contribution to ACM Program Co-Chair ISLPED 2009, ACM, 2009.

IEEE SSCS Seoul Chapter Award, International SoC Design Conference, 2009.

Best Lecture Award, College of Engineering, Seoul National University, 2000 and 2007.

Low-Power Design Contest Award FC-Battery Hybrid System, ACM International Symposium on Low-Power Electronics and Design (ISLPED), 2007.

ACM Senior Member, Association for Computing Machinery (ACM), 2007.

IEEE Senior Member, Institute of Electrical and Electronics Engineers (IEEE), 2005.

LG Yonam Foundation Research Professor, LG Yonam Foundation, 2005.

Low-Power Design Contest Award Hardware EDLS, International Symposium on Low-Power Electronics and Design (ISLPED), Association for Computing Machinery (ACM), 2004.

Low-Power Design Contest Award Compressed Frame Buffer, International Symposium on Low-Power Electronics and Design (ISLPED), Association for Computing Machinery (ACM), 2003.

Low-Power Design Contest Award Dynamic Luminance Scaling, International Symposium on Low-Power Electronics and Design (ISLPED), Association for Computing Machinery (ACM), 2002.

PROFESSIONAL SERVICES

Journal Editorial Board

Editor-in-Chief, ACM Transactions on Design Automation of Electronics Systems, June 2014 to May 2017.

Associate Editor, IEEE Embedded Systems Letter, 2014 to present.

Associate Editor, IEEE Transactions on Circuits and Systems I (TCAS-I), 2012 to 2014.

Associate Editor, Springer Design Automation of Embedded Systems (DAEM), 2012 to 2014.

Associate Editor, ACM Transactions on Embedded Computing Systems (TECS), 2012 to 2013.

Associate Editor, ACM Transactions on Design Automation of Electronic Systems (TODAES), 2010 to 2013.

Associate Editor, IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), 2006 to 2011.

Guest Editor, ACM Transactions on Design Automation of Electronic Systems (TODAES), 2010.

Guest Editor, ACM Transactions on Embedded Computing Systems (TECS), 2010, 2011 and 2012.

Editorial Board Member, International Journal of Low Power Electronics (JOLPE), 2003 to present.

Editorial Board Member, Journal of Embedded Computing, 2005 to present.

Conference Organizing Committee

General Co-Chair, IFIP/IEEE International Conference on Very Large Scale Integration (VLSI-SoC), 2015.

General Co-Chair, IEEE International Conference on Computer Design (ICCD), 2014.

Technical Program Chair, ACM/IEEE International Conference on Asia and South Pacific Design Automation Conference (ASP-DAC), 2015.

Technical Program Vice-Chair, ACM/IEEE International Conference on Asia and South Pacific Design Automation Conference (ASP-DAC), 2014.

Technical Program Co-Chair, IEEE International Conference on Computer Design (ICCD), 2013.

Technical Program Co-Chair, ACM/IEEE International Conference on Hardware-Software Codesign and System Synthesis (CODESS+ISSS), 2012.

General Co-Chair, ACM/IEEE International Symposium on Low-Power Electronics and Design (ISLPED), 2011.

General Chair, IEEE Symposium on Embedded Systems for Real-Time Multimedia (ESTImedia), 2011.

General Vice-Chair, ACM/IEEE International Symposium on Low-Power Electronics and Design (ISLPED), 2010.

Technical Program Co-Chair, ACM/IEEE International Symposium on Low-Power Electronics and Design (ISLPED), 2009.

Technical Program Co-Chair, IEEE Symposium on Embedded Systems for Real-Time Multimedia (ESTImedia), 2009 and 2010.

Technical Program Co-Chair, IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA), 2007.

Co-Organizer, Dagstuhl Seminar 07041: Power-aware Computing Systems,, Schloss Dagstuhl, Germany 2007.

Student Forum Chair, International Conference on Asia and South Pacific Design Automation Conference (ASP-DAC), 2008.

Local Arrangement and Registration Chair, International Conference on Hardware-Software Codesign and System Synthesis (CODESS+ISSS), 2006.

Registration Chair, IEEE Asia-Pacific Conference on ASICs (AP-ASIC), 2004.

Other ACM/IEEE Committee

ACM SIGDA Chair, 2012 to Present.

Design Automation Conference (DAC) Executive Committee, 2012 to present.

ACM/IEEE International Conference on Asia and South Pacific Design Automation Conference (ASP-DAC)

ACM SIGDA Steering Committee, 2010 to present.

ACM/IEEE Embedded Systems Week (ESWEEK) ACM SIGDA Representative, 2012.

ACM/IEEE International Symposium on Low-Power Electronics and Design (ISLPED) ACM SIGDA Representative, 2012 to present.

ACM SIGDA Executive Committee, 2010 to 2012.

ACM SIGDA Student Research Competition (SRC) at DAC Organizer, 2011 and 2012.

ACM SIGDA University Booth at DAC Organizer, 2011 and 2012.

ACM SIGDA Low-Power Technical Committee (LPTC) Chair, 2008 and 2009.

ACM SIGDA PhD Forum Program Committee, 2004 to present.

ACM SIGDA PhD Forum Program Committee Track Chair, 2007 to present.

ASP-DAC Student Forum Program Committee, 2005, 2006, 2007, and 2008.

ACM SIGDA Richard Newton Graduate Scholarship Committee, 2006, 2007, 2008, 2009, and 2010.

Conference Technical Program Committee

Design Automation Conference (DAC): 2004, 2005, 2006, 2011, 2012, and 2013.

International Conference on Computer-Aided Design (ICCAD): 2006, 2007, 2008, 2012, 2013, and 2014.

Design Automation and Test in Europe Conference and Exhibition (DATE): 2009, 2010, 2011, 2012, 2013, and 2014.

International Symposium on Low-Power Electronics and Design (ISLPED): 2003, 2004, 2005, 2006, 2007, 2008, 2010, 2011, 2012, 2013, and 2014.

International Conference on Hardware-Software Codesign and System Synthesis (CODESS+ISSS): 2007, 2008, 2009, 2010, 2011, 2013, and 2014.

ACM Great Lakes Symposium on VLSI (GLSVLSI), 2006, 2007, and 2008.

International Symposium on Quality Electronics Design (ISQED): 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, and 2011.

International Conference on Asia and South Pacific Design Automation Conference (ASP-DAC): 2001, 2003, 2004, 2008, 2009, 2010, 2011 (Track Chair] and 2013 (Track Chair).

IEEE Computer Society Annual Symposium on VLSI (ISVLSI): 2009, 2010 and 2011.

International Workshop on Power and Timing Modeling, Optimization and Simulation (PATMOS): 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, and 2013.

International Conference on Microelectronic Systems Education (MSE): 2005, 2007, 2009, and 2011.

Embedded Systems for Real-Time Multimedia (ESTIMedia): 2004, 2005, 2006, 2007, 2008, 2011, 2012, and 2013.

IEEE International Conference on Computer Design (ICCD): 2009, 2010, 2011, and 2012 (Track Chair).

IFIP International Conference on Very Large Scale Integration (VLSI-SoC): 2007, 2010 and 2012.

International Conference on Embedded And Ubiquitous Computing (EUC): 2004, 2005, 2006, and 2007.

IEEE Asia-Pacific Conference on ASICs (AP-ASIC): 2002 and 2004.
International Conference on Embedded Software and Systems (ICCESS): 2004, 2005 and 2007.
International Conference on Design and Test of Integrated Systems (DTIS): 2006 and 2007.
ACM Symposium On Applied Computing (SAC): 2009 and 2011.
IEEE Region 10 Conference (TENCON): 2010.
International Conference on Networking, Architecture, and Storage (NAS): 2011.
Asia Symposium & Exhibits on Quality Electronic Design (ASQED): 2011.

PUBLICATIONS

- [J-14-04] Yanzhi Wang, Xue Lin, Younghyun Kim, Naehyuck Chang and Massoud Pedram, "Architecture and Control Algorithms for Combating Partial Shading in Photovoltaic Systems," to appear in *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)*, 2014.
- [J-14-03] Yanzhi Wang, Xue Lin, Younghyun Kim, Qing Xie, Massoud Pedram and Naehyuck Chang, "Single-Source, Single-Destination Charge Migration in Hybrid Electrical Energy Storage Systems," to appear in *IEEE Transactions on Very Large Scale Integration Systems (TVLSI)*, 2014.
- [J-14-02] Younghyun Kim, Bumkyu Koh, Qing Xie, Yanzhi Wang, Naehyuck Chang and Massoud Pedram, "A scalable and flexible hybrid energy storage system design and implementation," in *Journal of Power Sources (JPS)*, Vol. 255, pp. 410–422, Jun., 2014.
- [J-14-01] Woojoo Lee, Yanzhi Wang, Donghwa Shin, Naehyuck Chang and Massoud Pedram, "Optimizing the Power Delivery Network in a Smartphone Platform," in *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)*, Vol. 33, pp. 36-49, 2014.
- [J-13-8] Xue Lin, Yanzhi Wang, Massoud Pedram, Jaemin Kim and Naehyuck Chang, "Designing Fault-Tolerant Photovoltaic Systems," to appear in *IEEE Design & Test of Computers*, 2013.
- [J-13-7] Younghyun Kim, Yanzhi Wang, Naehyuck Chang and Massoud Pedram, "Computer-Aided Design and Optimization of Hybrid Energy Storage Systems," in *Foundations and Trends in Electronic Design Automation (FnTEDA)*, Vol. 7, No. 4, pp. 247–338, Sep., 2013.
- [J-13-6] Donghwa Shin, Younghyun Kim, Massoud Pedram and Naehyuck Chang, "Dynamic Driver Supply Voltage Scaling for Organic Light Emitting Diode Displays," in *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)*, Vol. 32, No. 7, pp. 1017–1030, Jul., 2013.
- [J-13-5] Qing Xie, Yanzhi Wang, Younghyun Kim, Massoud Pedram and Naehyuck Chang, "Charge Allocation for Hybrid Electrical Energy Storage Systems," in *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)*, Vol. 32, No. 7, pp. 1003–1016, 2013.
- [J-13-4] Sangyoung Park, Jaehyun Park, Donghwa Shin, Yanzhi Wang, Qing Xie, Naehyuck Chang and Massoud Pedram, "Accurate Modeling of the Delay and Energy Overhead of Dynamic Voltage and Frequency Scaling in Modern Microprocessors," in *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)*, Vol. 32, No. 5, pp. 695–708, May, 2013.
- [J-13-3] Hyung Beom Jang, Jinhang Choi, Ikroh Yoon, Sung-Soo Lim, Seungwon Shin, Naehyuck Chang and Sung Woo Chung, "Exploiting Application/System-Dependent Ambient Temperature for Accurate Microarchitectural Simulation," in *IEEE Transactions on Computers*, Vol. 62, No.4, pp. 705–715, Apr., 2013.
- [J-13-2] Sangyoung Park, Younghyun Kim, Jaehyun Park, and Naehyuck Chang "Power Converter-Aware Design of Electronics Systems," in *IPSJ Transactions on System LSI Design Methodology (TSLDM)*, Vol. 6, pp. 2–16, Feb., 2013.
- [J-13-1] Younghyun Kim, Woojoo Lee, Massoud Pedram, and Naehyuck Chang "Dual-Mode Power Regulator for Photovoltaic Module Emulation," in *Applied Energy*, Vol. 101, pp. 730–739, Jan., 2013.
- [J-12-2] Donghwa Shin, Jaehyun Park, Younghyun Kim, Jaeam Seo and Naehyuck Chang, "Control-Theoretic Cyber Physical System Modeling and Synthesis: A Case Study of an Active DMFC," in *ACM Transactions on Embedded Computing Systems (TECS)*, Vol. 11, No. 4, pp. 76:1–76:24, Dec., 2012.
- [J-12-1] Donghwa Shin, Younghyun Kim, Yanzhi Wang, Naehyuck Chang and Massoud Pedram, "Constant-Current Regulator- Based Battery-Supercapacitor Hybrid Architecture for High-Rate Pulsed Load Applications," in *Journal of Power Sources (JPS)*, Vol. 205, pp. 516–524, May, 2012.

- [J-11-2] Younghyun Kim, Sangyoung Park, Youngjin Cho and Naehyuck Chang, “System-Level Online Power Estimation using an On-Chip Bus Performance Monitoring Unit,” in *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)*, Vol. 30, No. 11, pp. 1585–1598, Nov., 2011.
- [J-11-1] Sangyoung Park, Soohee Han and Naehyuck Chang, “Control-Theoretic Dynamic Thermal Management of Automotive Electronics Control Units,” in *IEEE Journal on Emerging and Selected Topics in Circuits and Systems (JETCAS)*, Vol. 1, No. 2, pp. 102–108, Jun., 2011.
- [J-10-4] Kyungil Seo, Taeyoung Chung, Hyundong Heo, Kyongsu Yi and Naehyuck Chang, “An Investigation into Multi-Core Architectures to Improve a Processing Performance of the Unified Chassis Control Algorithms,” in *SAE International Journal of Passenger Cars - Electronic and Electrical Systems*, Vol. 3, No. 1, pp. 53–62, Apr., 2010.
- [J-10-3] Donghwa Shin, Sung Woo Chung, Eui-Young Chung and Naehyuck Chang, “Energy-Optimal Dynamic Thermal Management: Computation and Cooling Power Co-Optimization,” in *IEEE Transactions on Industrial Informatics (TII)*, Vol. 6, No.3, pp. 340–351, Aug., 2010.
- [J-10-2] Younghyun Kim, Donghwa Shin, Jueun Seo, Naehyuck Chang, Hyejung Cho, Youngjae Kim and Seongkee Yoon, “System Integration of a Portable Direct Methanol Fuel Cell and a Battery Hybrid,” *Journal of Hydrogen Energy*, Vol. 35, No. 11, pp. 5621–5637, Jun., 2010.
- [J-10-1] Kyungil Seo, Jangyeol Yoon, Jihun Kim, Taeyoung Chung, Kyongsu Yi and Naehyuck Chang, “Coordinated Implementation and Processing of a Unified Chassis Control Algorithm with Multi-CPU,” in *Proceedings of the Institution of Mechanical Engineers, Part D: Journal of Automobile Engineering*, Vol. 224, No. 5, pp. 565–586, 2010.
- [J-09-1] Jianli Zhuo, Chaitali Chakrabarti, Kyungsoo Lee, Naehyuck Chang and Sarma Vrudhula, “Maximizing the Lifetime of Embedded Systems Powered by Fuel Cell-Battery Hybrids,” in *IEEE Transactions on Very Large Scale Integration Systems (TVLSI) Special Section on Low-Power Electronics and Design*, Vol. 17, No. 1, pp. 22–32, January, 2009.
- [J-08-3] Yongsoo Joo, Yongseok Choi, Jaehyun Park, Chanik Park, Sung Woo Chung, Eui-Young Chung and Naehyuck Chang, “Energy and Performance Optimization of Demand Paging with OneNAND Flash,” in *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)*, Vol. 27, No. 11, pp. 1969–1982, November, 2008.
- [J-08-2] Yongsoo Joo, Youngjin Cho, Donghwa Shin, Jaehyun Park and Naehyuck Chang, “An Energy Characterization Platform for Memory Devices and Energy-Aware Data Compression for Multi-Level Cell Flash Memory,” in *ACM Transactions on Design Automation of Electronic Systems (TODAES)*, Vol. 13, No. 3, Jul., 2008.
- [J-08-1] Kyungsoo Lee, Naehyuck Chang, Jianli Zhuo, Chaitali Chakrabarti, Sudheendra Kadri and Sarma Vrudhula, “A Fuel-Cell- Battery Hybrid for Portable Embedded Systems,” in *ACM Transactions on Design Automation of Electronic Systems (TODAES)*, Vol. 13, No. 1, Article 19, January, 2008.
- [J-07-3] Hyung Gyu Lee, Naehyuck Chang, Umit Y. Ogras and Radu Marculescu, “On-chip Communication Architecture Exploration: A Quantitative Evaluation of Point-to-Point, Bus and Network-on-Chip Approaches,” in *ACM Transactions on Design Automation of Electronic Systems (TODAES)*, Vol. 12, No. 3, Article 23, Aug., 2007.
- [J-07-2] Yongseok Choi, Naehyuck Chang and Taewhan Kim, “DC-DC Converter-Aware Power Management for Low-Power Embedded Systems,” in *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TODAES)*, Vol. 26, No. 8, pp. 1367–1381, Aug., 2007.
- [J-07-1] Youngjin Cho and Naehyuck Chang, “Energy-Aware Clock Frequency Assignment in Microprocessors and Memory Devices for Dynamic Voltage Scaling,” in *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)*, Vol. 26, Issue 6, pp. 1030–1040, 2007.
- [J-05-2] Hyung Gyu Lee and Naehyuck Chang, “Low-Energy Heterogeneous Non-volatile Memory Systems for Mobile Systems,” in *Journal of Low Power Electronics*, Vol. 1, No. 1, pp. 52–62, Apr., 2005.
- [J-05-1] Hyung Gyu Lee, Kyungsoo Lee, Yongseok Choi and Naehyuck Chang, “Cycle-Accurate Energy Measurement and Characterization of FPGAs,” in *Analog Integrated Circuits and Signal Processing*, Vol. 42, pp. 239–251, 2005
- (Invited).**
- [J-04-3] Ikhwan Lee, Yongseok Choi, Youngjin Cho, Yongsoo Joo, Hyeonmin Lim, Hyung Gyu Lee, Hojun Shim and Naehyuck Chang, “Web-based energy exploration tool for embedded systems,” in *IEEE Design & Test of Computers*, Vol. 21, Issue 6, pp. 572–586, Nov.–Dec, 2004.
- [J-04-2] Hojun Shim, Naehyuck Chang and Massoud Pedram, “A Backlight Power Management Framework for Battery-Operated Multimedia Systems,” in *IEEE Design & Test of Computers, Special Issue on Embedded Systems for Real-Time Multimedia*, pp. 2–10, Sep.–Oct., 2004.

- [J-04-1] Naehyuck Chang, Inseok Choi, and Hojun Shim, "DLS: Dynamic Backlight Luminance Scaling of Liquid Crystal Display," in *IEEE Transactions on Very Large Scale Integration Systems (TVLSI)*, Vol. 3, Issue 8, pp. 837–846, Aug., 2004.
- [J-03-1] Hojun Shim, Yongsoo Joo, Yongseok Choi, Hyung Gyu Lee and Naehyuck Chang, "Low-Energy Off-Chip SDRAM Memory Systems for Embedded Applications," in *ACM Transactions on Embedded Computing Systems (TECS) Special Issue on Memory Systems*, Vol. 2, Issue 1, pp. 98–130, Feb., 2003.
- [J-02-2] Dongkun Shin, Hojun Shim, Yongsoo Joo, Han-Same Yun, Jihong Kim and Naehyuck Chang, "SES: A highly integrated energy monitoring tool for low-power embedded programs," in *IEEE Design & Test of Computers*, pp. 7–17, Jul.–Aug., 2002.
- [J-02-1] Naehyuck Chang, Kwanho Kim, and Hyun Gyu Lee, "Cycle-accurate energy measurement and characterization with a case study of the ARM7TDMI," in *IEEE Transactions on Very Large Scale Integration Systems (TVLSI)*, Vol. 10, pp. 146 - 154, Apr., 2002.
- [J-00-1] Naehyuck Chang and Kwanho Kim, "Real-time per-cycle energy consumption measurement of digital systems," in *IEE Electronics Letters*, Vol. 36, No. 13, pp. 1169–1171, Jun., 2000.
- [J-03-3] Taewoong Kim, Namyun Kim, Heonshik Shin and Naehyuck Chang, "Burst mode bandwidth allocation for real-time messages in IEEE 802.12 networks," in *Real-Time Systems*, Vol. 25 Issue 2–3, pp. 207–229, Sep.–Oct., 2003.
- [J-03-2] Seungkweon Jeong, Naehyuck Chang and Wook Hyun Kwon, "Response time driven scheduling for programmable logic controllers with network-based I/O systems," in *Real-Time Systems*, Vol. 25, Issue 1, pp. 67–91, 2003.
- [J-02-3] Minyoung Sung, Soyoun Kim, Sangsoo Park, Naehyuck Chang, and Heonshik Shin, "Comparative performance evaluation of Java threads for embedded applications: Linux Thread vs. Green Thread," in *Information Processing Letters*, Vol. 84, No. 4, pp. 221–225, 2002.
- [J-01-2] Minyoung Sung, Naehyuck Chang, Jinsung Cho and Heonshik Shin, "Performance analysis of BusNet protocol for backplane bus-based interprocessor communication," in *Computer Communications*, Vol. 24, no. 15–16, pp. 1580–1590, Sep., 2001.
- [J-01-1] Taehyoun Kim, Naehyuck Chang and Heonshik Shin, "Joint scheduling of garbage collector and hard real-time tasks for embedded applications," in *Journal of Systems and Software*, Vol. 58, no. 3, pp. 245–258, Sep., 2001.
- [J-99-01] Taehyoun Kim, Naehyuck Chang, Namyun Kim and Heonshik Shin, "Scheduling Garbage Collector for Embedded Real-Time Systems," in *ACM Transactions on SIGPLAN Notices*, pp. 55–65, Jul., 1999.
- [J-98-02] Kyeonghoon Koo, Gab Seon Rho, Wook Hyun Kwon, Jae-Hyun Park and Naehyuck Chang, "Architectural design of a RISC processor for programmable logic controllers," in *Journal of Systems Architecture (JSA)*, Vol. 44, pp. 311–325, 1998.
- [J-98-01] Naehyuck Chang, Wook Hyun Kwon and Jaehyun Park, "Hardware implementation of high speed Petri net-based controllers," in *IFAC Control Engineering Practice (CEP)*, Vol. 6, pp. 889–895, 1998.
- [J-95-02] Gab Seon Rho, Kyeonghoon Koo, Naehyuck Chang, Jaehyun Park, Y.K.Kim and Wook Hyun Kwon, "Implementation of a RISC microprocessor for programmable logic controllers," in *Microprocessors and Microsystems (MICPRO)*, Vol. 19, pp. 599–608, Dec., 1995.
- [J-95-01] Naehyuck Chang, Jaehyun Park and Wook Hyun Kwon, "Petri nets based superscalar computing in programmable controllers," in *IEICE Transactions on Fundamentals of Electronics, Communications and Computer Sciences (ECCS)*, Vol. E78-A, pp. 1511–1518, 1995.
- [J-93-01] Jaehyun Park, Naehyuck Chang and Wook Hyun Kwon, "Implementation of parallel algorithm for event driven programmable controllers," in *IFAC Control Engineering Practice (CEP)*, Vol. 1, pp. 663–670, Aug., 1993.
- [C-14-08] Y. Wang, X. Lin, M. Pedram, and N. Chang, "Online fault detection and fault tolerance in electrical energy storage systems," to appear in Proceedings of PES General Meeting (PESGM), Jul. 2014.
- [C-14-07] X. Lin, Y. Wang, M. Pedram, and N. Chang, "Optimal switch configuration design for reconfigurable photovoltaic modules," to appear in Proceedings of PES General Meeting (PESGM), Jul. 2014.
- [C-14-06] Jaemin Kim, Yanzhi Wang, Massoud Pedram and Naehyuck Chang, "Fast Photovoltaic Array Reconfiguration for Partial Solar Powered Vehicles," to appear in *IEEE/ACM International Symposium on Low Power Electronics and Design (ISLPED)*, Aug.-Aug., 2014.

- [C-14-05] Jaemin Kim, Alma Pröbstl, Samarjit Chakraborty and Naehyuck Chang, "Aging Mitigation of Power Supply-Connected Batteries," to appear in *IEEE/ACM International Symposium on Low Power Electronics and Design (ISLPED)*, Aug.-Aug., 2014.
- [C-14-04] Yanzhi Wang, Xue Lin, Qing Xie, Naehyuck Chang and Massoud Pedram, "Minimizing State-of-Health Degradation in Hybrid Electrical Energy Storage Systems with Arbitrary Source and Load Profiles," in *Proceedings of Design Automation and Test in Europe (DATE)*, Dresden, Germany, Mar., 2014.
- [C-14-03] Di Zhu, Yanzhi Wang, Naehyuck Chang and Massoud Pedram, "Optimal Design and Management of a Smart Residential PV and Energy Storage System," in *Proceedings of Design Automation and Test in Europe (DATE)*, Dresden, Germany, Mar., 2014.
- [C-14-02] Kitae Kim, Donghwa Shin, Qing Xie, Yanzhi Wang, Massoud Pedram and Naehyuck Chang, "FEPMA: Fine-Grained Event-Driven Power Meter for Android Smartphones Based on Device Driver Layer Event Monitoring," in *Proceedings of Design Automation and Test in Europe (DATE)*, Dresden, Germany, Mar., 2014.
- [C-14-01] Cong Wang, Naehyuck Chang, Younghyun Kim, Sangyoung Park, Yongpan Liu, Hyunggyu Lee, Rong Luo and Huazhong Yang, "Storage-less and Converter-less Maximum Power Point Tracking of Photovoltaic Cells for a Nonvolatile Microprocessor," in *Proceedings of Asia South Pacific Design Automation Conference (ASP-DAC)*, Jan., 2014.
- [C-13-15] Younghyun Kim, Donghwa Shin, Massimo Petricca, Sangyoung Park, Massimo Poncino and Naehyuck Chang, "Computer- Aided Design of Electrical Energy Systems," in *Proceedings of the IEEE/ACM International Conference on Computer-Aided Design (ICCAD)*, Nov., 2013.
- [C-13-14] Qing Xie, Jaemin Kim, Yanzhi Wang, Donghwa Shin, Naehyuck Chang and Massoud Pedram, "Dynamic Thermal Management in Mobile Devices Considering the Thermal Coupling between Battery and Application Processor," to appear in *Proceedings of the IEEE/ACM International Conference on Computer-Aided Design (ICCAD)*, Nov., 2013.
- [C-13-13] Di Zhu, Siyu Yue, Yanzhi Wang, Younghyun Kim, Naehyuck Chang and Massoud Pedram, "Designing a Residential Hybrid Electrical Energy Storage System Based on the Energy Buffering Strategy," to appear in *Proceedings of the International Conference on Hardware/Software Codesign and System Synthesis (CODES+ISSS)*, Oct., 2013.
- [C-13-12] Siyu Yue, Di Zhu, Yanzhi Wang, Younghyun Kim, Naehyuck Chang and Massoud Pedram, "SIMES: A Simulator for Hybrid Electrical Energy Storage Systems," in *Proceedings of IEEE/ACM International Symposium on Low Power Electronics and Design (ISLPED)*, pp. 33–38, Sep., 2013.
- [C-13-11] Xue Lin, Yanzhi Wang, Siyu Yue, Naehyuck Chang and Massoud Pedram, "A Framework of Concurrent Task Scheduling and Dynamic Voltage and Frequency Scaling in Real-Time Embedded Systems with Energy Harvesting," in *Proceedings of IEEE/ACM International Symposium on Low Power Electronics and Design (ISLPED)*, pp. 70–75, Sep., 2013.
- [C-13-10] Donghwa Shin, Massimo Poncino, Enrico Macii and Naehyuck Chang, "A Statistical Model of Cell-to-Cell Variation in Li-Ion Batteries for System-Level Design," in *Proceedings of IEEE/ACM International Symposium on Low Power Electronics and Design (ISLPED)*, pp. 94–99, Sep., 2013.
- [C-13-09] Sangyoung Park, Bumkyu Koh, Yanzhi Wang, Jaemin Kim, Younghyun Kim, Massoud Pedram and Naehyuck Chang, "Maximum Power Transfer Tracking in a Solar USB Charger for Smartphone," in *Proceedings of IEEE/ACM International Symposium on Low Power Electronics and Design (ISLPED)*, pp. 88–93, Sep., 2013.
- [C-13-08] Sangyoung Park, Younghyun Kim and Naehyuck Chang, "Hybrid Energy Storage Systems and Battery Management for Electric Vehicles," in *Proceedings of the Design Automation Conference (DAC)*, pp. 97:1–97:6, Jun., 2013.
- [C-13-07] Yang Xiao, Kevin Irick, Vijaykrishnan Narayanan, Donghwa Shin and Naehyuck Chang, "Saliency aware display power management," in *Proceedings of Design Automation and Test in Europe (DATE)*, pp. 1203–1208, Mar., 2013.
- [C-13-06] Qing Xie, Siyu Yue, Donghwa Shin, Naehyuck Chang and Massoud Pedram, "Adaptive Thermal Management for Portable System Batteries by Forced Convection Cooling," in *Proceedings of Design Automation and Test in Europe (DATE)*, pp. 1225–1228, Mar., 2013.

- [C-13-05] Yanzhi Wang, Xue Lin, Jaemin Kim, Naehyuck Chang and Massoud Pedram, “Capital Cost-Aware Design and Partial Shading-Aware Architecture Optimization of a Reconfigurable Photovoltaic System,” in *Proceedings of Design Automation and Test in Europe (DATE)*, pp. 909–912, Mar., 2013.
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