

Résumé Jörg Henkel

CES – Chair for Embedded Systems
Department of Computer Science
KIT – Karlsruhe Institute of Technology
Buildg. 07.21 (Haid-und-Neu-Str. 7)
76131 Karlsruhe, GERMANY
Ph: +49 721 608 46050
Fax: +49 721 608 43962
henkel@kit.edu
<http://ces.itec.kit.edu>

Working Positions

1991- 1996 PhD (“Summa cum Laude”) at Institute for Computer Engineering University of Braunschweig, Germany.

1997- 2004 Senior Research Staff Member at Computer and Communication Research Laboratories CCRL (now NEC Laboratories America NECLA), NEC in Princeton, NJ, USA.

2001 Visiting Professor, University of Notre Dame, IN, USA.

2004 – present Full Professor, Chair for Embedded Systems, Computer Science Department, Karlsruhe Institute of Technology, Germany.

Five Most Relevant Publications

- S. Rehman, M. Shafique, F. Kriebel, J. Henkel, “Reliable Software for Unreliable Hardware: Embedded Code Generation aiming at Reliability Coding”, IEEE International Conference on Hardware-Software Codesign and System Synthesis (CODES+ISSS’11), Taipei, Taiwan, pp. 237-246, October 2011. **Received the Codes+ISSS Best paper Award.**
- T. Ebi, M. Al Faruque, J. Henkel, “TAPE: Thermal-Aware Agent-Based Power Economy for Multi/Many-Core Architectures”, IEEE/ACM 27th International Conference on Computer-Aided Design (ICCAD’09), San Jose, CA, USA, pp. 302-309, Nov. 2009, **Received the IEEE/ACM William J. McCalla ICCAD Best Paper Award.**
- L. Bauer, M. Shafique, S. Kreutz, J. Henkel, “Run-time System for an Extensible Embedded Processor with Dynamic Instruction Set”, Proc. of IEEE/ACM Design Automation and Test in Europe Conference (DATE’08), pp. 752-757, Munich, Germany, 2008. **Received a DATE Best Paper Award.**
- M. A. Al Faruque, R. Krist, J. Henkel, “ADAM: run-time agent-based distributed application mapping for on-chip communication”, IEEE/ACM 45th Design Automation Conference (DAC’08), pp. 760-765, 2008.
- Y. Li, J. Henkel, “A Framework for Estimating and Minimizing Energy Dissipation of Embedded HW/SW Systems”, IEEE/ACM 35th Design Automation Conference (DAC’98), pp.188-193, 1998.

Service

- **Editor-in-Chief**
 - ACM Transaction on Embedded Computing Systems (ACM TECS)
 - Jan. 2008 – Dec. 2013 (two periods of three years)
- **Chairman:**
 - IEEE Computer Society, Germany Section (www.ieee.de/computer)
 - since 2005
- **DFG Fachkollegium:**
 - Elected Board Member of the German Research Foundation (DFG) on “Computer Architecture and Embedded Systems”
 - since 2012

- **General Chair:**
 - 2014 General Co-Chair 20th IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA)
 - 2013 General Chair IEEE/ACM International Conference on CAD (ICCAD)
 - 2012 General Chair IEEE ESTIMedia Symposium (part of the Embedded Systems Week)
 - 2009 General Co-Chair IEEE/ACM International Symposium on Low Power Electronics and Design (ISLPED)
 - 2008 (Vice General Chair) IEEE/ACM International Symposium on Low Power Electronics and Design (ISLPED)
 - 2002 IEEE/ACM 10th Symposium on Hardware/Software Co-Design, Estes Park, Colorado.
- **Program Chair:**
 - 2014 8th International Symposium on Networks-on-Chip (NOCS)
 - 2013 International Workshop on Power and Timing Modeling, Optimization and Simulation (PATMOS)
 - 2012 IEEE/ACM International Conference on Computer-Aided Design (ICCAD)
 - 2012 IEEE International Conference on VLSI Design
 - 2010 IEEE ESTIMedia Workshop (part of the Embedded Systems Week)
 - 2009 IEEE/ACM Int'l Conference on Compilers, Architecture, and Synthesis for Embedded Systems (CASES)
 - 2008 IEEE Workshop on Signal Processing Systems (SiPS www.sips08.org), Washington D.C. Metropolitan Area, Oct. 2008.
 - 2006 IEEE/ACM International Symposium on Low Power Electronics and Design (ISLPED)
 - 2002 IEEE/ACM Rapid System Prototyping Workshop, Darmstadt, Germany.
 - 2001 IEEE/ACM 9th. Symposium on Hardware/Software Co-Design (CODES), Copenhagen, Denmark.
- **Associate Editor:**
 - IEEE Transactions on Computer-Aided Design of Integrated Circuits (TCAD). Since 2012.
 - IEEE Transaction on VLSI Systems (TVLSI). 2006-2010.
 - Journal of Low Power Electronics (JOLPE). Since 2003.
- **Guest Editorials:**
 - 2012 IEEE Transaction on Industrial Informatics on "Power-Aware Design for Embedded Systems".
 - 2010 ACM Transaction on Design Automation for Embedded Systems (TODAES), Special Section on Low Power Electronics and Design.
 - 2008 IEEE Transaction on VLSI Systems (TVLSI), Special Issue on Low Power Electronics and Design.
 - 2003 IEEE Computer Magazine, Vol. 36, No. 4: Special Issue on Hardware/Software Co-Design, April 2003.
 - 2003 Kluwer, Journal on Design Automation for Embedded Systems, Vol. 8, Issue 4: Special Issue on Rapid System Prototyping, Dec 2003.
- **Steering/Executive Committees:**
 - Chair of the ACM/IEEE CASES Conference (Compiler, Architecture and Synthesis for Embedded Systems)
 - since 2010
 - Steering Committee Member of the ACM/IEEE Embedded Systems Week www.eswork.org
 - since 2010
 - Steering Committee Member IEEE/ACM International Conference on Computer Aided Design (ICCAD)
 - 2014, 2013, 2012, 2011, 2009, 2008
 - Editorial Board Member of the "Journal for Embedded Computing" by Cambridge International Science Publishing:
 - since 2003
 - Steering Committee Member IEEE/ACM Codes+ISSS Conference
 - since 2004
- **Other Chair Position:**
 - Workshop Chair CASA (Compiler Assisted SoC Assembly) 2008 at ESWeek
 - Chair EDAA/DATE PhD Forum 2007
 - Co-Chair EDAA/DATE PhD Forum 2006

○ **Organizing Committees:**

- 2013 Track Chair CODES+ISSS, "Track 7: Power-aware Systems"
- 2012, 2011 "Sub-Committee Chair on Embedded Systems Platforms and Case Studies", IEEE/ACM Design Automation Conference (DAC).
- 2012 Publicity Chair 7th IEEE International Symposium on Industrial Embedded Systems
- 2010, 2009 "Sub-Committee Chair on Low Power". IEEE/ACM International Conf. on Computer Aided Design (ICCAD)
- 2011, 2010, 2009 "Sub-Committee Chair on Power Estimation and Optimization", IEEE/ACM Design Automation and Test in Europe Conference (DATE).
- 2008 "Sub-Committee Chair on System-level Communication" IEEE/ACM Design Automation Conference (DAC).
- 2008 "Topic Chair on Low Power Design", Codes+ISSS 2008.
- 2010, 2009, 2008, 2007, "Publicity Co-Chair" IEEE/ACM ESWeek.
- 2004 "Topic Chair on System Synthesis" at IEEE/ACM ICCAD Conference.
- 2004 "Special Session Chair" at IEEE/ACM Codes-ISSS Conference.
- 2003 "Topic Chair on System Synthesis" at IEEE/ACM ICCAD Conference.
- 2002 "Tutorial Chair" at IEEE/ACM CASES Conference.

○ **Program Committees:**

- DAC (IEEE/ACM Design Automation Conference)
 - 2012, 2011, 2008, 2007, 2006
- ICCAD (IEEE/ACM Int'l. Conf on Computer Aided Design)
 - 2010, 2009, 2008, 2004, 2003, 2002
- DATE (IEEE/ACM Design Automation & Test in Europe Conf.)
 - 2014, 2013, 2012, 2011, 2010, 2009, 2008, 2007, 2006, 2005, 2004, 2003, 2002, 2001
- ISLPED (IEEE/ACM Int'l Symposium on Low Power Electronics and Design)
 - 2012, 2011, 2010, 2009, 2008, 2007, 2005, 2004, 2003, 2002, 2001, 2000
- ICCD (IEEE Int'l Conf. on Computer Design)
 - 2009, 2008
- ASPDAC (IEEE/ACM Asia & South Pacific Design Automation Conf.):
 - 2009, 2004
- Codes and Codes+ISSS (IEEE/ACM Hardware/Software Co-design Symposium):
 - 2014, 2013, 2012, 2011, 2010, 2009, 2008, 2007, 2005, 2004, 2003, 2002, 2001, 2000, 1999
- NoCS (IEEE International Symposium on Networks-on-Chip)
 - 2014, 2013, 2012, 2011, 2010, 2009
- CASES (IEEE/ACM Conf. on Compilers, Architectures and Synthesis for Embedded Systems):
 - 2013, 2012, 2011, 2010, 2009, 2002
- RTSS (IEEE/ACM Real Time System Symposium):
 - 2007, 2004, 2003
- ASAP (IEEE International Conference on Application-specific Systems, Architectures and Processors)
 - 2014
- ECRTS (IEEE European Micro Conference on Real-Time Systems)
 - 2007
- ISVLSI (IEEE/ACM International Symposium on VLSI)
 - 2011, 2010, 2009, 2008, 2007, 2006
- RSP (IEEE/ACM Rapid System Prototyping Workshop):
 - 2010, 2009, 2008, 2007, 2006, 2005, 2004, 2003, 2002
- ESTIMedia Workshop:
 - 2010, 2009, 2008, 2007, 2005, 2004, 2003
- Scopes Workshop
 - 2014, 2013, 2011, 2010, 2009, 2008, 2007
- Samos Conference
 - 2009, 2008, 2007

○ **Other Committees**

- Best Paper Award Committee IEEE/ACM DAC, 2014
- Best Paper Award Committee IEEE/ACM ICCAD Conference 2007
- EDAA/DATE Best PhD Award Committee 2014, 2007, 2006

- **Other Memberships**
 - Member HiPEAC European Network of Excellence on High Performance and Embedded Architecture and Compilation.

Awards

- Embedded Systems Week, IEEE International Conference on Hardware-Software Co-design and System Synthesis (CODES+ISSS'11) **Best Paper Award** for "Reliable Software for Unreliable Hardware: Embedded Code Generation aiming at Reliability", 2011.
- MaXentric Technologies **AHS Best Paper Award** for "Concepts, Architectures, and Run-time Systems for Efficient and Adaptive Reconfigurable Processors", 2011.
- William J. McCalla **Best Paper Award ICCAD 2009** (IEEE/ACM Int'l Conference on Computer Aided Design) for "TAPE: Thermal-Aware Agent-Based Power Economy for Multi/Many-Core Architectures"
- **Best Paper Award DATE 2008** Conference for "Run-time System for an Extensible Embedded Processor with Dynamic Instruction Set" (announced in April 2009).
- Best Paper Nomination at ICCAD 2010 for "Selective Instruction Set Muting for Energy-Aware Adaptive Processors"
- Best Paper Nomination at ICCAD 2010 for "SETS: Stochastic Execution Time Scheduling for Multicore Systems by Joint State Space and Monte Carlo".
- Six HiPEAC (European Network of Excellence on High Performance and Embedded Architecture and Compilation) Paper Awards between 2008-2011.
- "Summa cum Laude" for PhD Thesis, 1996.

Student Awards (received by Master and PhD students under my supervision):

- European Design and Automation Association (EDAA) Outstanding Dissertations Award for the Ph.D. Thesis by Dr. Lars Bauer entitled "RISPP: A Run-time Adaptive Reconfigurable Embedded Processor", 2011.
- Hermann Billing Prize for the Master Thesis of Florian Kriebel entitled "Analysis and Design of Hybrid Hardware/Software Reliability Techniques for Embedded Processors", 2011.
- FZI (Research Center Computer Science) Best Dissertation Award for the Ph.D. Thesis by Dr. Lars Bauer entitled "RISPP: A Run-time Adaptive Reconfigurable Embedded Processor", 2011.
- FZI (Research Center Computer Science) 2008 Best Master Thesis Award for the Master Thesis by Bastian Molkenhain entitled "Development of a Power-Aware Rate Controller for H.264 Video Encoder".

Delivered Keynotes

- "Embedded On-Chip Reliability – It's a Thermal Challenge", M-Scopes, Schloss Rheinfels, June 20th, 2013.
- "Embedded On-Chip Reliability - It's a Thermal Challenge" at "Chip in Brasilia" (SBCCI / SBMicro), Brasilia, Brazil, September 1st., 2012
- "Dependable Software for Undependable Hardware" at 7th IEEE International Symposium on Industrial Embedded Systems (SIES'12), Karlsruhe, Germany, June 20th, 2012.
- "i-Core: A run-time adaptive processor for embedded multi-core systems", by Jörg Henkel at International Conference on Engineering of Reconfigurable Systems and Algorithms (ERSA'11), Las Vegas, Nevada, July 20th. 2011.
- "Reliability of On-Chip Systems – A Thermal Perspective", by Jörg Henkel at ISVLSI 2011 Conference, Chennai, India, July 4th. 2011.
- "Embedded Systems and the Reliability Challenge", by Jörg Henkel at the 2008 World Computing Congress (WCC'08) at DIPES'08, Milano, Sept. 8th. 2008.

Patents

- H. Lekatsas, J. Henkel, S. Chakradhar, V. Jakkula, "Dynamic content-aware memory compression and encryption architecture", issued January 6th., 2009, US Patent No. 7,474,750

- H. Lekatsas, J. Henkel, S. Chakradhar, V. Jakkula, "Compressed memory architecture for embedded systems", issued November 27th., 2007, US Patent No. 7,302,543
- S. Chakradhar, J. Henkel, V. Jakkula, H. Lekatsas, S. Murugan: "Hardware/software platform for rapid prototyping of code compression technologies", issued April 10th, 2007; US Patent No.7,203,935
- J. Henkel, H. Lekatsas, V. Jakkula: "Apparatus for one-cycle decompression of compressed data and methods of operation thereof", issued May 10th, 2005; US Patent No. 6,892,292
- J. Henkel, F. Vahid, T. Givargis, "Method for core-based system-level power modeling using object-oriented techniques", issued March 8th, 2005, US Patent No. 6,865,526
- J. Henkel, H. Lekatsas: "Method and apparatus for adaptive bus coding for low power deep submicron designs", issued May 25th., 2004, US Patent No. 6,741,190
- J. Henkel, W. Wolf, H. Lekatsas, "Method and apparatus for object code compression and decompression for computer systems", issued May 4th., 2004, US Patent No. 6,732,256
- J. Henkel, W. Wolf, H. Lekatsas, "Object code compression using different schemes for different instruction types", issued Feb. 10th., 2004, US Patent No. 6,691,305
- J. Henkel, "Low power hardware/software partitioning approach for core-based embedded systems", issued Sept. 16, 2003, US Patent No. 6, 622, 287
- J. Henkel, H. Lekatsas, "Method and apparatus for adaptive bus coding for low power deep submicron designs", issued June 24, 2003, US Patent No. 6, 583, 735.

Panel Invitations

- "Reset Microprocessor Hardware and Software Roadmaps for the next 30 Years?", Panel at IEEE International Conference for Computer Design (ICCD'08), Moderator: Georgi Gaydadjiev, TU Delft. Panelists: Jörg Henkel, University of Karlsruhe, Edward Grochowski, Intel Corp., Tom Conte, Georgia Institute of Technology, Brian Flachs, IBM, Lake Tahoe, CA, Oct. 14th. 2008.
- "GP vs. ASP: Are ASIPS just a short-term transition in computing?", Panel at IEEE Symposium on Application Specific Processor (SASP'08), Moderator: Grant Martin, Tensilica. Panelists: Eric Collins, Novelic; Tim Kogel, CoWare; Nigel Topham, University of Edinburgh and ARC; Nader Bagherzadeh, University of Irvine; Jörg Henkel, University of Karlsruhe. Anaheim June 9th. 2008.
- "Best Ways to Use Billions of Devices on a Chip", Panel at IEEE/ACM Asia and South Pacific Design Automation Conference (ASPDAC'08), Moderator: Grant Martin, Tensilica, Panelists: Deming Chen, Nikil Dutt, Jörg Henkel, Kyungho Kim, Kazutoshi Kobayashi, Seoul, Jan. 24th. 2008.

Tutorials held (honorarium provided)

- 2013 "Temperature- and Process Variation-Aware Dependable Embedded Systems" at ASP-DAC, Yokohama, Japan, January 22nd, 2013.
- 2009 "Security and Dependability of Embedded Systems: Computer Architects' Perspective", at IEEE VLSI Design Conf., Jan. 8th. 2009 in Delhi.
- 2003 Full-day tutorial on "Specification & Design of Multi-million gate SOCs", held at IEEE VLSI Conference, New Delhi, Jan 5th. 2003.
- 2002 Full-day tutorial on "Specification & Design of Multi-million gate SOCs", held at IEEE/ACM Int'l Conf. on CAD (ICCAD), San Jose, California, Nov. 2002.
- 2002 Full-day tutorial on "New Computing Platforms for Embedded Systems", held at IEEE/ACM Design Automation Conference (DAC), New Orleans, June 2002.
- 2001 Half-day tutorial on "Platform-based Design for Systems-on-Chips", held at IEEE/ACM DATE Conference, Munich, March 2001.
- 1998 Half-day tutorial on "Core based design of systems on a chip", held at IEEE 11th. Int'l ASIC Conf., Ann Arbor, Michigan, Sept. 1998.
- 1995 Full-day tutorial on "Hardware/Software Co-Design of Embedded Systems", held at IEEE/ACM Int'l Conf. on CAD (ICCAD), San Jose, California, Nov. 1995.

Embedded Tutorials held

- 2004 on "Quo Vadis Multimedia? From Desktop Multimedia to Distributed Multimedia Systems", held at IEEE/ACM DATE Conference, Paris, Feb. 19th. 2004.
- 2004 on "On-chip networks: a scalable, communication-centric embedded system design paradigm", held at 17th. IEEE VLSI Conference, Mumbai, India, Jan. 9th. 2004.

Publications

Book / Book Contributions

- Zatt, B., Shafique, M., Bampi, S., Henkel, J.: "3D Video Coding for Embedded Devices - Energy Efficient Algorithms and Architectures", Springer 2013, Science+Business Media, LLC, ISBN 978-1-4614-6758-8 (Book).
- Shafique, M., Henkel, J.: "Hardware/Software Architectures for Low-Power Embedded Multimedia Systems", Springer 2011, ISBN 978-1-4419-9691-6 (Book).
- Bauer, L., Henkel, J., "Run-time Adaptation for Reconfigurable Embedded Processors", Springer 2007, ISBN 978-1-4419-7411-2 (Book).
- Henkel, J., Parameswaran, S. (Eds.), "Designing Embedded Processors - A low power perspective", Springer 2007, ISBN 978-1-4020-5868-4 (Book).
- Henkel, J., Parameswaran, S., Cheung, N., „Application-Specific Embedded Processors“ in "Designing Embedded Processors", J. Henkel and S. Parameswaran (Eds.), Springer, pp. 3-23, 2007.
- Parameswaran, S., Henkel, J., Janapsatya, A., Bonny, T., Ignjatovic, A., „Design and Run Time Code Compression for Embedded Systems“ in "Designing Embedded Processors", J. Henkel and S. Parameswaran (Eds.), Springer, pp. 97-128, 2007.
- Cheung, N., Henkel, J., Parameswaran, S., „Instruction Matching and Modelling“ in: "Customizable and Configurable Embedded Processors", Publisher: Lenne, P.; Leupers, R.; Elsevier: Morgan Kaufmann, pp. 257-277, 2006.
- P. Ashar, S. Chakradhar, A. Gupta, J. Henkel, A. Raghunathan, K. Wakabayashi, "NEC and ICCAD-EDA Partners in Success", Proc. of "The Best of ICCAD: 20 Years of Excellence in Computer-Aided Design", A. Kuehlmann (ed.), Kluwer, pp.663-674, Feb. 2003.
- "Readings in Hardware/Software Co-Design" , Ed.: G. De Micheli, R. Ernst, W. Wolf, MORGAN KAUFMAN Publishers, Our contribution: Y. Li, J. Henkel, "A Framework for Estimating and Minimizing Energy Dissipation of Embedded HW/SW Systems", to appear Spring 2001.
- J. Henkel, "Automated hardware/software partitioning in the design of integrated real-time systems", (published Ph.D. dissertation in German language), Shaker Publishing House, ISBN: 3-8265-2038-6, 1996.

Journals/Magazines

- H. Javaid, M. Shafique, J. Henkel, S. Parameswaran, „Energy-Efficient Adaptive Pipelined MPSoCs for Multimedia Applications“, IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), (to appear).
- H. Amrouch, T. Ebi, J. Henkel, „RESI: Register-Embedded Self-Immunity for Reliability Enhancement“, IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), (to appear).
- M. Shafique, L. Bauer, J. Henkel, „Adaptive Energy Management for Dynamically Reconfigurable Processors“, IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), vol. 33, Issue 1, pp. 50-63, Januar 2014.
- A. Herkersdorf, H. Aliee, M. Engel, M. Glaß, C. Gimmler-Dumont, J. Henkel, V. B. Kleeberger, M. A. Kochte, J. M. Kühn, D. Mueller-Gritschneider, S. R. Nassif, H. Rauchfuss, W. Rosenstiel, U. Schlichtmann, M. Shafique, M. B. Tahoori, J. Teich, N. Wehn, C. Weis, H.-J. Wunderlich, „Resilience Articulation Point (RAP): Cross-layer Dependability Modeling for Nanometer System-on-chip Resilience“, Elsevier Microelectronics Reliability Journal (to appear).
- B.B. Vizzotto, B. Zatt, M. Shafique, S. Bampi, J. Henkel, „Model Predictive Hierarchical Rate Control with Markov Decision Process for Multiview Video Coding“, IEEE Transactions on Circuits and Systems for Video Technology (TCSVT), vol. 23, no. 12, pp. 2090-2104, December 2013.
- L. Bauer, C. Braun, M.E. Imhof, M.A. Kochte, E. Schneider, H. Zhang, J. Henkel, H.-J. Wunderlich, „Test Strategies for Reliable Runtime Reconfigurable Architectures“, IEEE Transactions on Computers, vol. 62, no. 8, pp. 1494-1507, August 2013.
- M.A. Al Faruque, T. Ebi, J. Henkel, "AdNoC: Runtime Adaptive Network-on-Chip Architecture", IEEE Transaction on Very Large Scale Integration Systems, Vol. 20 (2): pp. 257-269, 2012.
- J. Teich, J. Henkel, A. Herkersdorf, D. Schmitt-Landsiedel, W. Schröder-Preikschat, G. Snelting, "Invasive Computing: An Overview ", Multiprocessor System-on-Chip -- Hardware Design and Tool Integration, M. Hübner and J. Becker (Eds.), pp. 241-268, Springer, 2011.
- N. Chang, J. Henkel, " Current Trends in Low Power Design (Guest Editorial)", ACM Transactions on Design Automation of Electronic Systems (ACM TODAES), Vol. 16, No. 1, pp. 1-8, November 2010 .
- M.A. Al Faruque, J. Jahn, T. Ebi, J. Henkel, "Runtime Thermal Management Using Software Agents for Multi/Many-Core Architectures", EEE Design & Test (IEEE D&T), Special Issue on Post-Silicon Calibration and Repair for Yield and Reliability Improvement, Vol. 27, No. 6, pp. 58-68, Nov/Dec 2010.

- T. Bonny, J. Henkel, "Huffman-based code compression technique for embedded processors", ACM Trans. Design Autom. Electr. Syst. (TOADES), Vol. 15, No. 4, 2010.
- J. Henkel, S. Parameswaran, "CASES 2009 Guest Editorial", Design Automation for Embedded Systems (Springer), Vol. 14, No. 3, pp. 285-286, 2010.
- M. Shafique, L. Bauer, J. Henkel, "Optimizing the H.264/AVC Video Encoder Application Structure for Reconfigurable and Application-Specific Platforms", Journal of Signal Processing Systems (JSPS), Special Issue on Estimedia, Volume 60, Issue 2, pp. 183-210, August 2010.
- G. Frantz, J. Henkel, J. Rabaey, T. Schneider, M. Wolf, U. Batur, "Ultra-Low Power Signal Processing", IEEE Signal Processing Magazine, Volume 27, Issue 2, pp. 149-154, March 2010.
- L. Bauer, M. Shafique, J. Henkel, "Efficient Resource Utilization for an Extensible Processor through Dynamic Instruction Set Adaptation", IEEE Transactions on Very Large Scale Integration Systems (TVLSI), Special Section on Application-Specific Processors, Volume 16, Issue 10, pp. 1295-1308, Oct. 2008.
- T. Bonny, J. Henkel, "Efficient Code Compression for Embedded Processors", IEEE Transactions on Very Large Scale Integration Systems (TVLSI), Volume 16, Issue 12, pp. 1696-1707, December 2008.
- P. Kalla, X. S. Hu, J. Henkel, "A Flexible Framework for Communication Evaluation in SoC Design", International Journal of Parallel Programming, Volume 36, Number 5, pp. 457-477, October 2008.
- D. Serpanos, J. Henkel, "Dependability and Security Will Change Embedded Computing", IEEE Computer Magazine, pp. 82-84, Jan. 2008.
- Al Faruque, M.A., Henkel, J., „QoS-Supported On-chip Communication for Multi-Processors“, International Journal of Parallel Programming (IJPP '08), Volume 36, Number 1, pp. 114-139, February 2008.
- Kalla, P., Hu, X.S., Henkel, J., „Distance-based recent use (DRU): an enhancement to instruction cache replacement policies for transition energy reduction“, IEEE Transactions on Very Large Scale Integration (VLSI) Systems, Volume: 14, Issue: 1, pp. 69-80, 2006.
- Lekatsas, H., Henkel, J., Wolf, W., „Approximate arithmetic coding for bus transition reduction in low power designs“, IEEE Transactions on VLSI Systems, Volume: 13, Issue: 6, pp. 696–707, June 2005
- Bhattacharyya, S.S., Henkel, J., Hu, Xiaobo S., „Hardware/software codesign for DSP“, IEEE Signal Processing Magazine, Volume: 22, Issue: 3, pp. 11-12, May 2005.
- Parameswaran, S., Henkel, J., „Instruction Code Mapping for Performance Increase and Energy Reduction in Embedded Computer Systems“, IEEE Transactions on VLSI Systems, Volume: 13, Issue: 4, pp. 498-502, April 2005.
- Lv, T., Jiang Xu, Wolf, W., Ozer, I.B., Henkel, J., Chakradhar, S.T., „A Methodology for Architectural Design of Multimedia Multiprocessor SoCs“, IEEE Design & Test of Computers, Volume: 22, Issue: 1, pp. 18-26, Jan. 2005.
- Lekatsas, H., Henkel, J., Chakradhar, S., Jakkula, V., „Cypress: Compression and Encryption of Data and Code for Embedded Multimedia Systems“, IEEE Proceedings of the Design & Test of Computers, Volume: 21, Issue: 5, pp. 406 - 415, May 2004.
- F. Kordon, J. Henkel, "An Overview of Rapid System Prototyping Today", Kluwer Journal on Design Automation for Embedded Systems (DAES), Volume 8, Issue 4, pp. 275-282, Dec. 2003.
- T. Lv, J. Henkel, H. Lekatsas, W. Wolf, "A dictionary-based en/decoding scheme for low-power data buses", IEEE Transactions on Very Large Scale Integration (VLSI) Systems, Volume 11, Issue 5, pp. 943-951, Oct. 2003.
- J. Henkel, "Closing the SoC design gap", IEEE Computer Magazine, Volume 36 , Issue 9, pp. 119-121, Sept. 2003.
- J. Henkel, X.S. Hu, S. Bhattacharyya, "Taking on the embedded system design challenge", IEEE Computer Magazine ,Volume 36, Issue 4, pp. 35-37, April 2003.
- T. Givargis, F. Vahid, J. Henkel, "Instruction-based system-level power evaluation of system-on-a-chip peripheral cores", IEEE Transactions on Very Large Scale Integration (VLSI) Systems, Volume 10, Issue 6, pp.856-863, Dec. 2002.
- J. Henkel, Y. Li, "Avalanche: An Environment for Design Space Exploration and Optimization of Low Power Embedded Systems", IEEE Transactions on Very Large Scale Integration (VLSI) Systems, Vol. 10, No. 4, pp. 454-468, August 2002.
- T. Givargis, F. Vahid, J. Henkel, "System-Level Exploration for Pareto-Optimal Configurations in Parameterized System-on-a-Chip", IEEE Transactions on Very Large Scale Integration (VLSI) Systems, Vol. 10, No. 4, pp. 216-222, August 2002.
- J. Henkel, R. Ernst, "An Approach to Automated Hardware/Software Partitioning using a flexible Granularity that is driven by High-Level Estimation Techniques", IEEE Transactions on Very Large Scale Integration (VLSI) Systems, Vol. 9, No. 2, pp. 271-289, April 2001.
- T. Givargis, F. Vahid, J. Henkel, "Evaluating Power Consumption of Parameterized Cache and Bus Architectures in System-on-a-Chip Designs", IEEE Transactions on Very Large Scale Integration (VLSI) Systems, Vol. 9, No. 4, pp. 500-508, Aug. 2001.
- J. Henkel, "Automatisierte Hardware/Software-Partitionierung im Entwurf integrierter Echtzeitsysteme",

PhD Dissertation at Technical University of Braunschweig, Braunschweig, Shaker Publishing House, 1996.

- R. Ernst, J. Henkel, Th. Benner, W. Ye, U. Holtmann, D. Herrmann, M. Trawny, "The COSYMA Environment for Hardware/Software Cosynthesis", Elsevier, Microprocessors and Microsystems, Vol. 20, No. 3, pp. 159-166, 1996.
- J. Henkel, R. Ernst, W. Ye, M. Trawny, Th. Benner, COSYMA: Ein System zur Hardware/Software Co-Synthese, GME Fachbericht Nr. 15 Mikroelektronik, pp. 167-172, 1995.
- J. Henkel, Th. Benner, R. Ernst, W. Ye, N. Serafimov and G. Glawe, "COSYMA: A Software-Oriented Approach to Hardware/Software Codesign", The Journal of Computer and Software Engineering, Vol. 2, No. 3, pp. 293-314, 1994.
- W. Ye, R. Ernst, Th. Benner, J. Henkel, "Fast Timing Analysis for Hardware-Software Co-Synthesis", IEEE/ACM Proc. of ICCD 1993, pp. 452-457, 1993.
- R. Ernst, J. Henkel and Th. Benner, "Hardware/Software Co-Synthesis for Microcontrollers", IEEE Design & Test Magazine, Vol 10, No. 4, pp. 64-75, 1993.
- J. Henkel, R. Ernst, "Ein softwareorientierter Ansatz zum Hardware/Software Co-Entwurf", ITG-Fachbericht 122, VDE-Verlag, 1992.

Conferences/Symposia/Workshops

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