

CALL FOR PAPERS

ICCAD serves EDA and design professionals, highlighting new challenges and innovative solutions for Integrated Circuit Design Technologies and Systems. ICCAD covers the full range of traditional CAD topics; in addition, it also covers CAD for supporting post-CMOS design, as well as design automation for novel application areas, such as biology and nanotechnology. Original technical submissions on, but not limited to, the following topics are invited:

Sponsored by:



In cooperation with:



1) SYNTHESIS, VERIFICATION AND PHYSICAL DESIGN

1.1 Logic Synthesis

Synthesis, technology mapping. Refinement techniques. Direct compilation and post-optimization. Micro-architectural transformations. Memory system synthesis.

1.2 Simulation and Formal Verification

Formal verification techniques. HW/SW co-simulation. Switch, logic and behavioral simulation, and design validation. Protocol and interface design for correctness. Software verification. Emulation. Hybrid Systems.

1.3 Partitioning, Placement and Floorplanning

High-level physical design and synthesis. Estimation and hierarchy management. Partitioning, floor-planning and global placement. Detailed and incremental placement.

1.4 Routing and Detailed Physical Design

Global routing. Detailed routing, post-placement layout and optimization. Clock network design.

1.5 Optimization in Physical Design

Optimization for area, timing, power, and yield. Interaction between physical design and logic synthesis.

2) CAD FOR SYSTEMS

2.1 System Design and Optimization

HW/SW co-optimization and co-exploration. Multi-core/multi-processor systems (heterogeneous, homogeneous, reconfigurable). On-chip communication optimization. HW/SW platforms.

2.2 Embedded Systems

Embedded and programmable systems. Real-time software and RTOS. Reuse techniques. Rapid prototyping. CAD for FPGA.

2.3 Power Considerations in System Design

System-level power estimation, analysis and optimization.

2.4 Mixed Technology/Domain Systems

System level analysis of thermal, reliability, aging, NBTI, electromigration, wearout, etc., effects in mixed technologies and physical domains (eg., MEMS, electro-optical). System issues in 3D integration.

2.5 Reliable and Alternative Systems

Design techniques for achieving reliability, resilience and robustness from unreliable components. Regular circuits, structured ASICs. Novel trends and perspectives in system-level design, with emphasis on power, software, performance and configurability. SoC, SiP, 3-D integration, programmable and reconfigurable platforms.

3) CAD FOR MANUFACTURING AND TEST

3.1 Design for Manufacturability

CAD for the design/manufacturing interface, CAD support for OPC and RET, variability analysis, yield estimation. Manufacturable layout.

3.2 Testing

Fault modeling, delay test, analog and mixed signal test. Fault simulation. ATPG. BIST and DFT. Memory test and repair. Technology impact on test.

4) CAD FOR CIRCUITS, DEVICES AND INTERCONNECT

4.1 Analog, Mixed-Signal, RF and Multi-domain Simulation

Numerical methods for analog, mixed-signal, RF, multi-domain (MEMS, nanoelectronic, optoelectronic, biological, etc.) network and system simulation. Nonlinear model reduction and computational macromodeling. Fast analysis of large-scale circuits and systems. Novel design methodologies enabled by simulation.

4.2 Timing and Behavioral Modeling

Gate, switch and block level modeling. Timing analysis and methodologies. Current-source modeling. Behavioral modeling of circuits and systems.

4.3 Circuit Design, Synthesis and Optimization

Advances in low power, variation-tolerant, high speed, mixed-signal and RF circuit-level design, flows and methodology. On-chip power regulation. Computer-aided circuit and system synthesis. Design centering and performance optimization. Pareto methods. Note: circuit design papers lacking a CAD/methodology component are not suited for ICCAD.

4.4 Device-level Modeling and Simulation

Computer-aided analysis and design of electronic and mixed-domain devices. Semiconductor, nanoelectronic, micromechanical, electro-optical, device simulation and compact modeling. Electromagnetic simulation and package analysis. EMC/EMI simulation techniques. Modeling of device variability.

4.5 Interconnect and Power Networks

Network-level power/ground and package analysis and optimization. Reduced-order modeling of interconnect and linear time invariant networks. Signal integrity analysis. Interconnect parameter extraction.

5) CAD FOR NANOSCALE AND BIOLOGICAL SYSTEMS

5.1 Biological Systems

Computer-aided analysis techniques for biological systems - biomolecular, intracellular, cellular, organ and organism level. Analysis and design of synthetic biological systems. Multi-scale biological systems, systems biology.

5.2 Nanoscale and Post-CMOS Systems

Analysis, synthesis and design methods for novel devices (eg., quantum, molecular, spin-based) and systems centered about future nanotechnologies. Bio-electronic devices and systems.

ALL SUBMISSIONS MUST BE MADE ELECTRONICALLY AT THE ICCAD WEBSITE: WWW.ICCAD.COM

REGULAR PAPERS DUE BEFORE 5pm MDT, April 14, 2008.

All submissions must be made electronically at the ICCAD website (www.ICCAD.com) before 5:00pm Mountain Daylight Time (GMT 07:00). Papers will not be accepted for submission after 5:00pm MDT. This is a firm deadline; no exceptions will be made. Regular paper submissions must (1) be in PDF format only, (2) be no more than 8 pages (including the abstract, figures, tables, and references), double-columned, 9pt or 10pt font, and (3) must not include name(s) or affiliation(s) of the author(s) anywhere on the manuscript, abstract, or bibliographic citations. Submissions not adhering to these rules, or determined to be previously published (this includes pre-prints publicly available on personal or other websites, such as arXiv, or publicly available internal memoranda with author names divulged) or simultaneously submitted to another conference will be summarily rejected. Internal memoranda with full content not publicly available, and with author names not divulged, may be submitted.

Additional submission guidelines are available on the ICCAD website after March 14, 2008. Format templates are available on the ICCAD website for your convenience, but are not required. All regular papers will be reviewed as finished papers; preliminary submissions will be at a disadvantage. Authors of accepted papers must sign a copyright release form for their paper. Notice of acceptance will be sent via email by June 25, 2008.

NOTE: To limit excessive page lengths in the Proceedings, 4 pages are free of charge and each additional page beyond 4 pages is charged \$125.00 per page with a maximum of 4 additional pages.

PANEL PROPOSALS DUE BEFORE 5pm MDT, April 14, 2008.

Panel suggestions should not exceed two pages, should describe the topic and intended audience, and should include a list of suggested participants. Panel suggestions must include a bulleted outline of covered topics. ICCAD reserves the right to restructure all panel proposals. Panel Session proposals should be sent to Jaijeet Roychowdhury at jr@umn.edu.

KEYNOTE PROPOSALS ARE DUE BEFORE 5pm MDT, April 14, 2008.

Keynote proposals must include descriptions of suggested keynote speakers, and the importance of the speech to the ICCAD audience. Keynote proposals should be sent to Sani Nassif at nassif@us.ibm.com

EMBEDDED TUTORIAL PROPOSALS ARE DUE BEFORE 5pm MDT, April 14, 2008.

Embedded Tutorials are 1.5 - 2 hours. Embedded tutorial suggestions should not exceed two pages, should describe the topic and intended audience, and should include a list of suggested participants. Embedded tutorial suggestions must include a bulleted outline of covered topics. ICCAD reserves the right to restructure all proposals. Proposals should be sent to Jaijeet Roychowdhury at jr@umn.edu.

TUTORIALS

Tutorials are 1/2 day sessions on Monday, Tuesday or Wednesday of the conference. Proposals should focus on the state-of-the-art in a specific area of broad interest amongst ICCAD attendees. Tutorial proposals should be sent to Kathy Embley at kathy@mpassociates.com

Author's Schedule

Deadline for submissions:..... 5pm MDT (GMT 07:00) Mon., April 14, 2008

Notification of acceptance: June 25, 2008

Deadline for final version submission: July 30, 2008

Zero or more outstanding submissions will be recognized with the **ACM/IEEE William J. McCalla ICCAD Best Paper Award.**

WWW.ICCAD.COM