

CODES+ISSS 2011

International Conference on Hardware/Software Codesign and System Synthesis

The International Conference on Hardware/Software Codesign and System Synthesis is the premier event in design, modeling, analysis, and implementation of modern embedded systems, from system-level analysis and optimization to hardware/software implementation. The conference is a forum for active discussion of topics of current and future importance to designers and researchers. The program will bring together the latest in academic and industrial research and development. High-quality original papers will be accepted for oral presentation followed by interactive poster sessions. CODES+ISSS 2011 is part of [Embedded Systems Week 2011](#).

Program chairs: Prof. Robert Dick (University of Michigan) and Prof. Jan Madsen (Technical University of Denmark)

Areas of interest

The conference invites papers on the specification, modeling, design, analysis, and implementation of embedded systems. Although the range of design problems and applications appropriate for the conference is broad, many papers will focus on system-level analysis of application-specific embedded systems and new ideas supporting their design; many of these ideas will make use of automation. The following topics are of interest, as are other topics relevant to the design and synthesis of embedded systems. For each topic, work relevant to important embedded system quality metrics (e.g., **power consumption, price, performance, reliability, security, usability, and compactness**) is welcome.

- **High-level, architectural, and system-level synthesis and hardware/software co-design** - Specification and refinement, design representation, synthesis, partitioning, hardware-software interaction/interface, and design space exploration.
- **Domain- and application-specific design techniques and tools** - Analysis, design, and automation techniques appropriate for cyber-physical systems, multimedia, medical, transportation, and other specialized application domains.
- **Embedded software** - Compilers, memory management, virtual machines, scheduling, power-aware operating systems, real-time support, and middleware. Multicore and multiprocessor programming models for systems-on-chip and networks-on-chip, profiling techniques, and trace generation.
- **Embedded systems architecture** - Architecture optimization, application-specific architectures, memory and communication architecture exploration and optimization, and multiprocessor system-on-chip and network-on-chip architectures.
- **Emerging technologies and techniques** - New challenges for next generation embedded computing systems arising from increased heterogeneity, new implementation technologies, and new applications.
- **Industrial practices and case studies** - Design experiences imparting knowledge that may be used in future designs. Applications of new state-of-the-art methodologies and tools to real-life problems in various application areas, e.g., wireless, networking, multimedia, automotive, medical systems, and sensor networks.
- **Simulation and verification** - Hardware/software co-simulation, verification methodologies, formal verification, hardware-accelerated simulation, test methodology, and design for testability.
- **Specification languages and models** - System-level models and semantics, timing analysis, power analysis, formal properties, and heterogeneous systems and components.
- **Benchmarks** - Benchmarks for evaluating embedded system analysis and optimization techniques.

Submission information

- Papers should describe original work, not published or submitted for publication in other forums.
- A blind review process will be enforced. Authors should not reveal authorship directly or indirectly through references.
- Papers must be in PDF format and should not exceed **10 pages** in ACM two-column format (9pt on 8.5"x11" letter size paper). For formatting instructions and templates, visit the [ACM web site](#). 10 pages is an upper limit. Authors are encouraged to submit shorter (e.g., 6 pages) papers if this better fits the nature and content of the paper.
- Formal proceedings will be published on CD-ROM and web page forms (copyright by ACM and IEEE).