Areas of Interest:
Original papers in, but not limited to, the following areas are invited.

[1] System-Level Modeling and Design Methodology:
1.1. HW/SW co-design, co-simulation and co-verification
1.2. System-level design exploration, synthesis, and optimization
1.3. System-level formal verification
1.4. System-level modeling, simulation and validation
1.5. Network-on-chip and NoC-based system design

2.1. Many- and multi-core SoC architecture
2.2. IP/platform-based SoC design
2.3. Domain-specific architecture
2.4. Dependable architecture
2.5. Cyber physical system
2.6. Internet of Things

[3] Embedded Systems Software:
3.1. Kernel, middleware, and virtual machine
3.2. Compiler and toolchain
3.3. Real-time system
3.4. Resource allocation for heterogeneous computing platform
3.5. Storage software and application
3.6. Human-computer interface

4.1. Storage system and memory architecture
4.2. On-chip memory architectures and management: Scratchpads, complex, controlled memories,
4.3. Memory and storage hierarchies with emerging memory technologies
4.4. Near-memory and in-memory computing
4.5. Memory architecture and management for emerging memory technologies

[5] AI/Machine Learning System Designs:
5.1. Hardware and devices for deep neural networks
5.2. Design methods for learning on a chip
5.3. Systems and design methods for deep neural computing
5.4. Neural network acceleration co-design techniques
5.5. Design techniques for AI of Things

[6] Photonic/RF/Analog-Mixed Signal Design:
6.1. Analog/mixed-signal/RF synthesis
6.2. Analog layout, verification, and simulation techniques
6.3. High-frequency electromagnetic simulation of circuit
6.4. Mixed-signal design consideration
6.5. Communication and computing using photonics

[7] Approximate, Bio-Inspired and Neuromorphic Computing:
7.1. Circuit and system techniques for approximate and stochastic computing
7.2. Neuromorphic computing
7.3. CAD for approximate and stochastic systems
7.4. CAD for bio-inspired and neuromorphic systems

[8] Logic/High-Level Synthesis and Optimization:
8.1. High-level synthesis tool and methodology
8.2. Combinational, sequential and asynchronous logic synthesis
8.3. Logic synthesis and physical design technique for FPGA
8.4. Technology mapping

[9] Physical Design:
9.1. Floorplanning, partitioning and placement
9.2. Interconnect planning and synthesis
9.3. Placement and routing optimization
9.4. Clock network synthesis
9.5. Post layout and post-silicon optimization
9.6. Package/PCB 3D-IC routing

[10] Design for Manufacturability and Reliability:
10.1. Reticle enhancement, lithography-related design and optimization
10.2. Resilience under manufacturing variation
10.3. Design for manufacturability, yield, and defect tolerance
10.4. Reliability, aging, and soft error analysis
10.5. Design for reliability, aging, and robustness
10.6. Machine learning for smart manufacturing and process control

11.1. Power modeling, analysis and simulation
11.2. Low-power design and optimization at circuit and system levels
11.3. Thermal aware design and dynamic thermal management
11.4. Energy harvesting and battery management
11.5. Deterministic/statistical timing analysis and optimization
11.6. Signal/power integrity, EM modeling and analysis
11.7. Extraction, TSV and package modeling

[12] Testing, Validation, Simulation, and Verification:
12.1. ATPG, BST and DFT
12.2. System test and 3D IC test
12.3. Online test and fault tolerance
12.4. Memory test and repair
12.5. RTL and gate-level modeling, simulation, and verification
12.6. Circuit-level formal verification
12.7. Device/circuit-level simulation tool and methodology

[13] Hardware and Embedded Security:
13.1. Hardware-based security
13.2. Detection and prevention of hardware Trojans
13.3. Side-channel attacks, fault attacks and countermeasures
13.4. Design and CAD for security
13.5. Cyberphysical system security
13.6. Nanoelectronic security
13.7. Supply chain security and anti-counterfeiting

[14] Emerging Devices, Technologies and Applications:
14.1. Quantum and Ising computing
14.2. Nanotechnology, MEMS
14.3. Biomedical, biochip, and biodata processing.
14.4. Edge, fog and cloud computing
14.5. Energy-storage/smart-grid/smart-buildings design and optimization
14.6. Automotive system design and optimization
14.7. New transistor/device and process technology: spintronic, phase-change, single-electron etc.