Call for Papers
Application Design Track at DATE 2015

Grenoble, France - March 9-13, 2015

The **Design, Automation and Test in Europe conference and exhibition** is the main European event bringing together designers and design automation users, researchers and vendors, as well as specialists in the hardware and software design, test and manufacturing of electronic circuits and systems.

The **Application Design Track** is devoted to the presentation and discussion of design experiences with a high degree of industrial relevance, as well as innovative design and test methodologies, and applications of specific design and test technologies. Contributions should illustrate state-of-the-art or record-breaking designs, which will provide viable solutions in tomorrow's silicon and embedded systems. In topic A7, there is also the opportunity to submit short, 2-page papers that relate to industrial research and practice. This five-day event consists of a **conference** with plenary keynotes, regular papers, interactive presentations, panels and hot-topic sessions, tutorials, master courses and workshops. The scientific conference is complemented by a commercial **exhibition** showing the state-of-the-art in design and test tools, methodologies, IP and design services.

TOPICS

A1 Green Computing Systems
Chairs: Qinru Qiu (Syracuse University, US), Andreas Burg (EPFL, CH)

Application design experiences in industrial or academic projects with high industrial relevance or high environmental impact, targeting high performance or large-scale computing systems with a focus on energy efficiency. Target systems are massively parallel (super) computers, 2D/3D many-core systems, high performance computing clusters, data centers, cloud systems and cyber-physical systems. Topics of interest include, but are not limited to: software architectures for parallel systems and cloud computing, virtualization, energy-efficient memory, processor, or communication architectures, heterogeneous computing, resource management techniques including adaptive/learning-based methods, innovative data-center management strategies, big-data management, data centers powered by renewable energy sources, and data centers in the smart-grids.

A2 Communication, Consumer and Multimedia Systems
Chairs: Theocharis Theocharides (University of Cyprus, CY), Sergio Saponara (University of Pisa, IT)

Practical design experience for communication, multimedia and consumer systems like smartphones, smart-books/tablets; examples are digital integrated circuits design of flexible baseband processing systems, Intellectual Properties for wireless communication, design challenges for software-defined/cognitive radio systems; embedded systems design in the field of audio, video and computer vision domains; Application Specific Processors (ASP), Digital Signal Processors (DSP), Multi-Processor System on Chip (MPSoC) and Network on Chip (NoC) designs for these domains.

A3 Automotive Systems and Smart Energy Systems
Chairs: Bart Vermeulen (NXP Semiconductors, NL), David Boyle (Imperial College London, UK),

This topic covers works that describe design experiences for automotive systems, smart energy systems, energy scavenging and harvesting for embedded systems, and related applications. This includes analogue and mixed-signal integrated circuits, micro-electromechanical systems, high voltage structures, integrated sensors and transducers, RF architectures, in-vehicle networks, systems for electric vehicles, networks of systems (including car-to-car and car-to-infrastructure networks), and innovative concepts for power distribution, energy storage, and grid monitoring. Furthermore, this topic also includes design methods including models and tools, design of hardware and software components, architecture analysis and optimization, component-oriented design and system-level analysis and validation. Finally, topics of interest are also hardware and software solutions for run-time system management, including self-diagnostics and repair, energy generation, energy saving, novel energy harvesting, battery management, renewable energy subsystems, and optimization of system energy efficiency.

A4 Ambient Intelligence and Ultra-Low Power Systems for Healthcare and Wellness
Chairs: Srinivasan Murali (SmartCardia, CH), Elisabetta Farela (Fondazione Bruno Kessler, IT)

Medical, healthcare, and life science applications require increasingly smarter and smaller devices enabling to easily interact among each other, with the environment and with the users in a smooth and smart way. Personal and personalized medicine and rehabilitation is leading to a significant increase in both complex lab solutions as well as a myriad of consumer-like disposable devices. This topic covers the use of ambient intelligence, wireless body sensor networks and wearable technologies for healthcare, rehabilitation and wellness. This includes but it is not limited to: technologies for ultra-low/zero power systems for personal vital signs monitoring (such as heart rate, fitness devices); mobile system for motor rehabilitation and assessment; (bio)feedback system for rehabilitation and fitness based on wearable and mobile technologies; innovative implantable miniaturized sensors and actuators, personal health devices and assistive technology; Bio-MEMS; lab-on-a-chip; power management, on-board performance optimization and networking technologies for body area networks and ambient intelligence in wellness, healthcare and fitness.

A5 Secure Systems
Chairs: Guido Bertoni (STMicroelectronics, IT), Tim Güneysu (Ruhr University Bochum, DE)

Secured systems need a combination of hardware, software and embedded techniques to succeed. Indeed, the weakest link in the security chain determines the overall system security. This topic therefore invites papers on novel technologies and experiences for specific security problems as well as overall design integration methods for secure systems-on-chip and embedded systems. Topics of interest are situated at all design abstraction levels and include novel techniques and architectures for embedded cryptography; modeling, characterization, simulation and associated countermeasures for side-channel, fault and other physical attacks; random numbers generation, embedded secure processors and co-processors, trusted computing, off-chip memories and network-on-chip enciphering and integrity checking, trust establishment and attestation; implementation of security applications; hardware enabled security, including physically unclonable functions, and more.

A6 Reliable and Reconfigurable Systems
Chairs: Marco D. Santambrogio (Politecnico di Milano, IT), Praveen Raghavan (IMEC, BE),

This topic covers the area of reliable and adaptive systems for practical applications. The scope of this topic includes, but not limited to, the development, optimization and practical application mechanisms to compensate for aging and temperature, development of fault-tolerant systems, redundant designs and applications, reconfigurable systems and applications, static and dynamic reconfiguration techniques, context-aware applications and self-adaptive architectures.

A7 Industrial Experiences Brief Papers
Chairs: Ahmed Jerraya (CEA, FR), Michael Nicolaidis (TIMA Laboratory, FR)

Short or long industrial papers with a minimum size of two pages, and up to six pages, are solicited. Submissions should relate to industrial research and practice, including: commercial and market trends; future research demand; developments in design automation, embedded software, applications and test; emerging markets; technology transfer mechanisms; on-line testing and fault tolerance for industrial applications. Pure product presentations and announcements will not be considered for publication.

PAPER SUBMISSION

All manuscripts must be submitted electronically before **Friday, September 14, 2014**, following the instructions on the conference Web page:

www.date-conference.com

Papers can be submitted for either standard oral presentation or for interactive presentation. Submissions should not exceed 6 pages in length for oral-presentation and 4 pages in length for interactive-presentation papers, 2-page papers are only allowed in topic A7.

INFORMATION

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