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Test Technology Newsletter

April 2022

The Newsletter of the Test Technology Technical Council of the IEEE Computer Society

Editor: Stefano Di Carlo

TTTC News

The TTTC website always lists the latest features and information for its visitors! To find out more, please visit the website at http://www.ieee-tttc.org/.

Past TTTC Events

The IEEE International Test Conference (ITC 2021) 10-15 October 2021 Virtual Conference http://www.itctestweek.org/

International Test Conference is the world's premier venue dedicated to the electronic test of devices, boards, and systems—covering the complete cycle from design verification, design-for-test, design-for-manufacturing, silicon debug, manufacturing test, system test, diagnosis, reliability and failure analysis, and back to process and design improvement. At ITC, design, test, and yield professionals can confront challenges faced by the industry and learn how these challenges are being addressed by the combined efforts of academia, design tool and equipment suppliers, designers, and test engineers. ITC, the cornerstone of the Test Week event, offers a wide variety of technical activities targeted at the test and design theoreticians and practitioners, including formal paper sessions, tutorials, panel sessions, case studies, invited lectures, commercial exhibits and presentations, and a host of ancillary professional meetings.

The 25th Design, Automation, and Test in Europe (DATE) Conference 14–23 March 2022 Online Live and Virtual Online https://www.date-conference.com/

The 25th DATE conference 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. DATE puts a strong emphasis on both technology and systems, covering ICs/SoCs, reconfigurable hardware and embedded systems, and embedded software. The multi-day event consists of a conference with regular papers, complemented by panels, hot-topic sessions, tutorials, workshops, special focus days, and executives. The event will also host the Young People Program, the University Fair, and Multi-Partner Projects dissemination on innovative research activities fostering the networking and the exchange of information on relevant issues, recent research outcomes, and career opportunities. DATE 2022 is the 25th edition of an event that has been the place for researchers, young professionals, and industrial partners to meet, present their research, and discuss the current development and next trends, with a high emphasis on social interaction. For its 2022 event, DATE presents a special format, as the situation related to COVID-19 is improving but safety measures and restrictions will remain uncertain for the upcoming months across Europe and worldwide. In the transition towards a future post-pandemic event again, DATE 2022 will host a two-day live event in presence in the city of Antwerp, to bring the community together again, followed by other activities carried out entirely online in the subsequent days. This setup combines the in-presence experience with the opportunities of online activities, fostering networking and social interactions around an interesting program of selected

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talks and panels on emerging topics to complement the traditional DATE high-quality scientific, technical, and educational activities.

The 40th IEEE VLSI Test Symposium 25–27 April 2022 San Diego, USA https://tttc-vts.org/public_html/new/2022/

The IEEE VLSI Test Symposium (VTS) explores emerging trends and novel concepts in testing, debugging and repair of microelectronic circuits and systems.

The VTS Program Committee invites original, unpublished paper submissions for VTS 2022. Proposals for the innovative practices and special sessions tracks are also invited. The program includes keynotes, scientific paper presentations, short industrial application paper presentations, special sessions, and Innovative Practices sessions.

VTS puts particular emphasis on enlarging its scope soliciting submissions on aspects on the following hot topics: Test, Reliability, and Security of Heterogeneous Devices Including Biomedical, Neuromorphic, and MEMS, Test & Reliability of Machine Learning Systems, Test, Reliability & Security in Quantum Computing, Design and Test Methods for Yield Improvement, Machine Learning for Test, Debug, and Yield Improvement and Reliable in-Field Calibration of mm-Wave Devices.

Upcoming TTTC Events

The 18th IEEE Workshop on Silicon Errors in Logic – System Effects (SELSE'22) 19–20 May 2022 Virtual Event https://selse.org/

The growing complexity and shrinking geometries of modern manufacturing technologies are making devices increasingly susceptible to the influences of electrical noise, process variation, transistor aging, and the effects of natural radiation. The system-level impact of these errors can be far-reaching, both in safety–critical aerospace and automotive applications and also for large-scale servers and high-performance applications.

The SELSE workshop provides a unique forum for discussion of current research and practice in system-level error management.

The 27th IEEE European Test Symposium (ETS'22) 23–27 May 2022 Barcelona, Spain http://ets2021.upc.edu/en/

The IEEE European Test Symposium (ETS) is Europe's premier forum dedicated to presenting and discussing scientific results, emerging ideas, applications, hot topics, and new trends in the area of electronic-based circuits and system testing, reliability, security, and validation. ETS'22 will be held in Casa Convalescència, located in the historical modernist site Hospital de la Santa Creu i Sant Pau (World Heritage Site by UNESCO, 1997) in Barcelona, which is located 10 min walking from the Sagrada Familia. The format of the conference will be hybrid, please check "COVID19" menu for more details. ETS'22 is organized by UPC (Universitat Politècnica de Catalunya).

The program includes keynotes, scientific paper presentations, panels, tutorials, workshops, and highlights/demos from the industry. Besides regular technical papers, ETS'22 provides the opportunity of submitting scientific contributions for hot-topic papers and case-study papers (each with specific evaluation criteria). Submissions are also solicited for special sessions, tutorials, panels, and workshops, as well as for the Ph.D. Forum. Linked to the main ETS'22 symposium, the Test Spring School and Fringe Workshops will be organized.

The 6th IEEE International Conference in Asia (ITC-Asia'22) 24–26 August, 2022 Taipei, Taiwan http://itc-asia2022.org/

International Test Conference has been a flagship conference in test technology since 1970. In an attempt to stimulate more discussion and interaction between academia and the industry around the globe, ITC-Asia was initiated as a sister conference of ITC in 2017. This year, it is again back to Taipei City, Taiwan. Welcome to join us to immerse yourselves in not only the state-of-the-art test technology but also numerous semiconductor industry forums.

The 28th International Symposium on On-Line Testing and Robust System Design (IOLTS'22) 12–14 September, 2022 Torino, Italy http://iolts.tttc-events.org/

Issues related to Online testing techniques, and more generally to design for robustness, are increasingly important in modern electronic systems. In particular, the huge complexity of electronic systems has led to growth in reliability needs in several application domains as well as pressure for low-cost products. There is a corresponding increasing demand for cost-effective design for robustness techniques. These needs have increased dramatically with the introduction of nanometer technologies, which impact adversely noise margins; process, voltage and temperature variations; aging and wear-out; soft error and EMI sensitivity; power density and heating; and make mandatory the use of design for robustness techniques for extending, yield, reliability, and lifetime of modern SoCs. Design for reliability becomes also mandatory for reducing power dissipation, as voltage reduction, often used to reduce power, strongly affects reliability by reducing noise margins and thus the sensitivity to soft errors and EMI, and by increasing circuit delays and thus the severity of timing faults. There is also a strong relation between Design for Reliability and Design for Security, as security attacks are often fault-based.

The International Symposium on On-Line Testing and Robust System Design (IOLTS) is an established forum for presenting novel ideas and experimental data on these areas. The Symposium is sponsored by the IEEE Council on Electronic Design Automation (CEDA) and by the IEEE Computer Society Test Technology Technical Council (TTTC). The 2022 edition is organized by Politecnico di Torino and the University of Athens.

Newsletter Editor's Invitation

I would appreciate input and suggestions about the newsletter from the test community. Please forward your ideas, contributions, and information on awards, conferences, and workshops to Stefano Di Carlo, Control and Computer Engineering Department, Politecnico di Torino, I-10129, Torino, Italy; stefano.dicarlo@polito.it.

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