WELCOME NOTES

On behalf of the ISQED 2001 conference and technical committees, we would like to cordially welcome you to the 2nd International Symposium on Quality Electronic Design, ISQED 2001. All the technical presentations, plenary sessions, panel discussions, tutorials and related events will take place on March 26-28 at the San Jose Double Tree Hotel. The hotel is located in the heart of Silicon Valley, near the San Jose International Airport, and is a very convenient location for all conference participants whether local, US or international attendees.

The program addresses the variety of issues related to electronic design, and System-on-a-chip (SoC) design with intellectual property (IP), employing deep sub-micron (DSM) technologies. It is clear that DSM level integration, which will approach 1 billion transistors on a chip before the decade is out, is causing a paradigm shift to SoC/IP based design methodologies. However, DSM by itself is a major cause of failure due to a plethora of physical and electrical problems. As a result, there are enormous challenges to overcome to be able to design high-quality SoC’s in a given market window. The sessions in this conference address many of the issues that must be resolved in order for SoC design to become a reality. The technical sessions span the disciplines of high-level design methodologies, synthesis and verification, embedded memories and cores, interconnect issues, device modeling, power management, manufacturing and test. This conference provides an opportunity to understand the key issues faced by the industry in the next few years possible solutions to these challenges.

The technical program for ISQED 2001 has been assembled by the technical program committee, which includes international experts from industry and academia. The technical committee is made up of ten subcommittees with a total of fifty active members. The technical committee members have selected papers for presentation from many excellent submissions. This year, a total of 36 papers were accepted for oral presentation from 93 papers submitted to ISQED 2001. An additional 16 papers were accepted for poster presentation. The technical program also includes 13 invited papers from leading experts in the field. ISQED will award three best papers during the luncheon held on Tuesday. In addition, the best Ph.D. student paper will be also awarded during the same session.

The conference starts on Monday, March 26 with tutorial sessions organized by Frank Lee and David Overhauser. This year, due to popular demand, we have expanded the popular tutorial sessions to four tracks, with a total of twelve sessions. The tutorial session covers a variety of critical and timely topics such as Embedded Test Strategies for SoC, Design and Test of Low Voltage CMOS Circuits, Redundancy Requirements for Embedded Memories, Design Metrics for achieving Design Quality, Fundamental Methods to Enable SoC Design and Reuse, Deep Sub-micron State-of-the-Art ESD design, Application of Formal Verification to Design Creation and Implementation, Verification and Validation of Complex Digital Systems, Physical Verification of DSM designs, Re-Connecting MOS Modeling and Circuit Design, Interconnect Modeling for Timing, Signal Integrity and Reliability, as well as On-Chip inductance extraction and modeling.

One attractive feature of the first ISQED was the two popular plenary sessions. This year Kris Verma, and Carlo Guardiani have organized yet another outstanding plenary session of world-renowned leaders, from the industry and academia. The first plenary session will be held on Tuesday morning and features keynote speeches by Hajime Sasaki (Chairman of the board, NEC), Joe Costello (CEO, think3), Raul Camposano (CTO/GM, Synopsys), Edward Ross (President, TSMC, USA).
The second plenary session will be held on Wednesday morning. The list of keynote speakers for this session includes Wojciech Maly (Professor, Carnegie Mellon University), Vinod Agrawal (CEO, Logic Vision), Aki Fujimura (COO and President, Simplex Solutions), and Philippe Magarshack (Vice President, Design Automation, STMicroelectronics).

In the first keynote speech, entitled “Future Platform for Mobile Communication”, Hajime Sasaki will explore three driving forces in the IT revolution that are actualizing an Information Society. The next keynote by Joe Costello will focus on the relationship between quality and profitability. Next, Raul Composano, addresses various formal techniques for design verification, and explores the “Expanding Use of Formal Techniques in Electronic Design”. Edward Ross will then discuss emerging trends in the EDA, IP library and design center communities, wherein deep collaboration with foundries is producing a variety of Internet-based solutions that are revolutionizing IC design methodologies. The title of his speech is “IC Design Methodology in the Foundry Era: Introducing ‘Heads-Up’ Design”. The second plenary session on Wednesday will be start with a plenary speech by Wojciech Maly entitled “Quality of Design from an IC Manufacturing Perspective”. Following this, Vinod Agrawal describes how “Embedded Test Leads to Embedded Quality”. He will further expand on how embedded test is becoming a standard choice for IC and system developers. If you have ever wondered why a group of talented, highly motivated, hard-working software engineers consistently produce low-quality software after the deadline, you will find an answer in he next speech by Aki Fujimura entitled “Quality on Time”. Philippe Magarshack will deliver the final plenary speech entitled “Quality of SoC designs through quality of the design flow: Status and Needs”. This is a critical issue gaining importance with the ever-increasing complexity of systems that can be built on the same chip: current process capabilities are exceeding 100 million devices.

The ISQED 2001 program includes two evening panel sections on Monday and Tuesday evenings, and one embedded panel on Wednesday afternoon. Gabriele Eckert, Nader Vasseghi, Bill Alexander, and Rick Merritt have organized these panel sessions. The first evening panel is organized by Rick Merritt, moderated by Richard Goering, and will be held on the evening of Monday. This panel is titled “The 50-Million Transistor Chip: The Quality Challenge for 2001”. The second evening panel discussion on Tuesday is titled “0.13 micron: Will the Speed Bumps Slow the Race to Market?”. This panel is organized by Bill Alexander, and moderated by Jacques Benkoski. Dinner will be served prior to both these panels. The title of the embedded panel, which will take place on Wednesday afternoon, is “Consequences of Technology - What is the Impact of Electronic Design on the Quality of Life?”. This panel is organized by Gabriele Eckert, Nader Vasseghi, and moderated by Steve Ohr.

A new component of the technical program this year is the Ph.D. student forum which allows Ph.D. students to present and discuss their thesis work with experts in the area of Electronic Design and Design Automation. The forum was organized by Kaushik Roy and provides Ph.D. students, who are active in the research in the electronic design automation, and design-related areas, with the opportunity to gain visibility and get feedback on their work, and for the industry to gain insight into the academic work-in-progress. The technical program also includes a special poster session where the authors will summarize their research results on a poster. Attendees of the poster session will be able to discuss issues directly with the authors and view the research results on the prepared posters.

In summary, we have put together an excellent program for practicing engineers and managers, to learn the latest on quality electronic design so that functional integrated circuits, with acceptable yield and reliability, can be manufactured within the frame work of the desired cycle time. This conference provides a forum for you to learn and share and exchange insight and knowledge with your peers. It is with great pleasure that we extend a warm welcome to all attendees of the ISQED 2001.

Sincerely,

Dr. Ali Iranmanesh  
ISQED Founder and  
General Chair

Dr. Tak Young  
ISQED Program Chair

Dr. Res Saleh  
ISQED Technical Program Chair