

The Second A-SSCC Considers Challenges for the e-Life



Gathered for the opening plenary of the A-SSCC in Hangzhou are (l-r) Prof Tadahiro Kuroda of Keo University and Chair of the Invited Program Committee, Nicky Lu of Etron Technology and Chair of Conference Industry Program, Richard C. Jaeger of Auburn University and President SSCS, Richard Chang, the President of Semiconductor Manufacturing International Corporation and Chair of the Technical Program, and C.K. Wang of National Taiwan University and Conference Steering Committee Chair.

The successful Asian Solid-State Circuits Conference in November, 2006 in Hangzhou, China was organized with a core of 107 papers selected by an international program committee. The acceptance rate was 32% with a conference audience of 260 registered attendees. CK Wang, the Steering Committee chair of A-SSCC, reported that the conference was quite successful both “in terms of paper quality and foreign attendees with 82 from Japan, 48 from Taiwan, and 39 from Korea.” Prof Wei of Tsinghua University and local host felt that it was the first high quality and world class conference held in China. The tutorials that began the conference were open at no cost to any students in attendance.

Three papers, announced as winners of the Student Design Contest, were awarded at A-SSCC. The competition, in cooperation with the ISSCC, includes transportation for the lead student researcher to the ISSCC February 2007 in San Francisco, for the papers to be included in the

ISSCC poster session. The A-SSCC student design contest finalists are selected from regular accepted papers that are authored by students. Only the realized designs, not simply simulations, are selected and invited to demonstrate the operation of the chips on-site. It is not a contest with a single specification or application, but rather a contest for the completeness of develop-



Winners of the A-SSCC 2006 student design contest were (from left) first, Sungdae Choi of KAIST, Seoul, second Mr. Yusaku Ito of the Tokyo Institute of Technology, and third Mr. Simone Gambini Simone Gambini and Jan Rabaey of the University of California at Berkeley. Presenting the awards is Prof. Hoi-Jun Yoo, Chair of Design Contest.

ment and demonstration of the fabricated integrated circuit. The papers, co-authors, and abstracts are listed below.

(I) A TCAM-based Periodic Event Generator for Multi-Node Management in the Body Sensor Network
Sungdae Choi, Kyomin Sohn, Jooyoung Kim, Jerald Yoo and Hoi-Jun Yoo (KAIST)

A low-power periodic events generation is essential for a node controller in the network system with centralized control and the timer interrupt generation for various devices in a CPU. The proposed TCAM-based periodic event generator manages the issuing events with the programmed value and the number of the events is equal to the number of the word line of the TCAM block. The NAND-type TCAM cell operates with as low as 0.6V supply voltage and the low-energy match line precharge reduces the search line transition which causes most of the search energy dissipation. The implemented event generator consumes 184-nJ energy to schedule events of 255 nodes for 24-hours, which is less than 10% of energy consumption of conventional hardware timer blocks.