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42nd Design Automation Conference Student Design Contest Winners Announced
Conference Serves Important Role in Supporting Continuing Education

BOULDER, Colo. – June 8, 2005 – The 42nd Design Automation Conference (DAC), the electronic design automation (EDA) industry's premier event, has announced the winners of its annual Student Design Contest. Winners are selected in two categories: operational, in which a design is built and tested; and conceptual, for circuits designed and simulated only. Awards will be presented on Wednesday, June 15 at 10:00 a.m. in Booth 2269 in the DAC Pavilion. First, second and third place winners in each category will share $15,000 in prize money provided by industrial sponsors and awarded at DAC. Winning submissions also are displayed as posters at the DAC University Booth on the exhibit floor and winners were also invited to present at a special poster session at the International Solid-State Circuits Conference (ISSCC) held in February 2005 in San Francisco.

The Student Design Contest is one of several programs DAC offers to promote continuing education. This year DAC has contributed more than $90,000 to help more than 275 students attend the conference through its Young Student Support, Speaker Support, Ph.D. Forum, University Booth and Design Automation Summer School programs. As a result, students from as far as South Africa and South America with an interest in EDA will be able to attend this premier industry event to learn more about the latest advancements in the field and share their own research.

The DAC/ISSCC Student Design Contest promotes excellence in the design of electronic systems through competition between graduate and undergraduate students at universities and colleges worldwide. Student Design Contest was founded by the University of Utah's Kent Smith in 1981, and has been managed by DAC since 2000. In 2002, DAC began partnering with ISSCC to promote and manage the contest.

OPERATIONAL CATEGORY WINNERS

This year's first place in the operational category, and best overall, was awarded to Imran Ahmed and David Johns of the University of Toronto, Toronto, Ontario, Canada. Their design of an analog/digital converter (ADC) offers flexibility for a variety of applications. Along with scalable power, reconfigurable bandwidth and multi-rate processing, the ADC design also enables unique power scaling at high sampling rates.

The second place winners in the operational category are Tung-Chien Chen, Yu-Wen Huang, Chen-Han Tsai, Ching-Yeh Chen, To-Wei Chen and Liang-Gee Chen of the National Taiwan University, Taipei, Taiwan for their design of a single-chip encoder for HDTV applications. Based on the newest video coding standard, H.264, and utilizing 0.18µm CMOS, the chip enables superior compression performance.

Kris Tiri, David Hwang, Alireza Hodjat, Bo-Cheng Lai, Shenglin Yang, Patrick Schaumont and Ingrid Verbauwhede from the University of California, Los Angeles, Calif. received the third place award in the operational category. They designed a

prototype integrated circuit (IC) that resists side channel leakage to protect information that would otherwise be revealed by the IC's supply current profile. Created in 0.18μm CMOS, the design targets embedded Advanced Encryption Standard (AES)-based cryptographic and biometric processing applications.

CONCEPTUAL CATEGORY WINNERS

In the conceptual category the first place award was given to Petrus J. Venter and Saurabh Sinha of the University of Pretoria, Pretoria, South Africa. Their winning entry is a fractional-N frequency synthesizer for cellular systems, designed to minimize signal interference for better cell phone performance.

The second place winners in the conceptual category are Pui-In Mak and Rui P. Martins from the University of Macau, Macau SAR, China and Seng-Pan U of Chipidea Microelectronics (Macau) Ltd., Macau SAR, China. Their design of a wireless receiver IF to baseband chip in 0.35μm CMOS format is IEEE 802.11 compliant and targets low-cost wireless Systems-in-Package (SiP) applications.

Hasan N. Atay, Burchan Bayazit and John W. Lockwood of Washington University, St. Louis, Mo. received the third place award in the conceptual category for their design of a collision detection system for robot applications. Using a field-programmable gate array (FPGA) implemented on the FPX platform, the system receives model input data based on the robot and random obstacles and then identifies collision-free paths for the robot.

INDUSTRY AND CORPORATE DEDICATION TO CONTINUED EDUCATION

Each year, the successful tradition of the Student Design Contest is made possible by a group of industry and corporate sponsors. In addition to DAC and the ISSCC, this year's industry sponsors include the Association of Computing Machinery (ACM) Special Interest Group on Design Automation (SIGDA), the IEEE Circuits and Systems Society, the Microelectronics Advanced Research Corporation (MARCO) and the Semiconductor Research Corporation (SRC). This year the corporate sponsors are Cadence Design Systems, Intel Corporation, Mentor Graphics and Synopsys.

DAC PROGRAMS SUPPORTING CONTINUING EDUCATION

The SIGDA/DAC University Booth Program provides an opportunity for the university community to demonstrate EDA tools, design projects and instructional materials at DAC. The University Booth also provides space for the presentation of EDA vendor literature and programs of interest to the university community. The SIGDA/DAC University Booth, organized and run by SIGDA volunteers, is sponsored by DAC and the ACM Special Interest Group on Design Automation, who together will contribute $42,000 in booth space, equipment and travel support. Additional information can be found online at http://www.sigda.org/programs/Ubooth/Ubooth2005.

The 2005 SIGDA Ph.D. Forum at DAC is one of the premier forums for Ph.D. students in design automation to get feedback on their research and for industry to see academic work in progress. A poster session hosted by SIGDA for Ph.D. students to present and discuss their dissertation research with people in the EDA community will be held on Tuesday, June 14, 2005 from 6:30 to 8:00 p.m. at the Anaheim Convention Center in Room 204BC. Additional information can be found at http://www.sigda.org/daforum.

For those interested in the 2006 Student Design Contest, the call for entries will be posted on the DAC Web site in mid-October 2005. Past winners and more details are available online: http://www.dac.com/42nd/studcon.html. For more information on the Student Design Contest contact the Co-Chairmen, Professor Alan Mantooth (mantooth@uark.edu) or David Greenhill (david.greenhill@sun.com).

REGISTRATION

The 42nd DAC will be held June 13-17, 2005 at the Anaheim Convention Center, Anaheim, Calif. Advance online registration for the conference is open until Friday, June 10 at www.dac.com. Attendees can also register at the conference.

ABOUT DAC
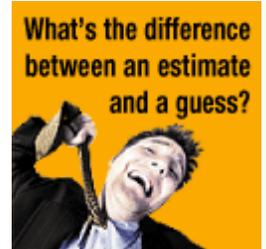
DAC is the annual event where the electronics design community meets for a week-long forum of information exchange on management practices, products, methodologies and processes. Attended by more than 10,500 developers, designers, researchers, managers and engineers from leading electronics companies and universities worldwide, it offers a robust technical program covering the industry's hottest trends. Its vibrant exhibit floor includes more than 235 companies, many of whom are startups just introducing their first products. The conference is sponsored by the Association for Computing Machinery's Special Interest Group on Design Automation (ACM/SIGDA), the Circuits and Systems Society and Computer Aided Network Design Technical Committee of the Institute of Electrical and Electronics Engineers (IEEE/CASS/CANDE) and the Electronic Design Automation Consortium (EDA Consortium). More details about DAC are found at: www.dac.com.