

2002 IEEE INTERNATIONAL MIDWEST SYMPOSIUM ON CIRCUITS AND SYSTEMS

STUDENT PAPER COMPETITION

By G.R. Branner and Michael Soderstrand

INTRODUCTION:

During the past 6 years, the IEEE International Midwest Symposium on Circuits and Systems (MWSCAS) has held a student paper contest for participants from universities throughout the world. The fundamental objective of this competition has been to provide a forum to recognize and reward research that has been conducted primarily by an individual student in the circuits and systems area. It is well recognized that the future of our symposium rests on our ability to attract promising student researchers who are extremely enthusiastic about our area of engineering and its potential. This year, as has been the case in the past, each contest paper was clearly designated as a 'student paper.'

This year's competition was held in one session on Monday morning, August 5, from 8:20 a.m. until 12:00 noon in the Main Auditorium at the Tulsa campus of Oklahoma State University. The contest results were announced and prizes and certificates were presented at the annual awards luncheon on Monday, August 5, 2002, at 1:00 p.m. This year, prizes were donated by the Halliburton Company, Phillips Petroleum Company, and Seagate Technology, and were awarded to the contest finalists.

CONTEST SUBMISSIONS:

This year there were nearly 200 student papers submitted for consideration at the 2002 symposium. Of these, 12 papers (10 plus 2 alternates) were selected for presentation in the judging session and all authors of the accepted student papers were invited by e-mail to present their work at the special contest session. Of the 12 accepted papers, all students accepted the invitation to participate and 9 of the first 10, and 1 alternate made presentations at the contest judging session.

As evidenced by the nearly 200 submissions, there was exceptional response to this year's symposium, showing significant increase over previous years.

PROCEDURE:

The e-mail sent to all student authors whose papers were accepted for this symposium provided demographic information about the time, location and format of the contest session, pointing out explicitly that their participation would require presentation of their work at the session. (A sample copy of this e-mail is contained in Appendix I of this report). Each student was asked to respond directly to the contest chairperson noting whether or not he or she could participate.

Potential judges were solicited by e-mail several weeks before the symposium. An e-mail was sent to all volunteer judges acknowledging their availability to serve as a contest judge. In addition to a copy of each paper, the e-mail included the four criteria which were to be used in judging each paper and a request that scores be assigned in two of the four criteria prior to the judges' arrival at the symposium. Additionally, each judge was requested to attend a meeting on Sunday night at the symposium hotel from 8:00 p.m. to 10:00 p.m. to discuss the contest procedures and review the selection criteria and prepare at least 3 questions to ask each of the students. Appendix II is a copy of the e-mail sent to each of the judges.

It is believed that a minimum of four to five judges is probably required to ensure that the overall evaluation of the contest presentations is uniform and fair, and it is believed that as many as 10 judges would be advisable. This year, the judges to whom we would like to express our appreciation were:

- Ken Jenkins
- Wasfy Mikhael
- Roger Schultz
- Robert Stratton
- G. Rick Branner

Cash prizes were provided for first, second and third place contestants in the amounts of \$1,000 (of which there were two), \$500, and \$300, respectively. There were also three fourth place prizes of a Seagate hard disk drive. The \$1,000 first place prizes were provided by Halliburton Company (presented by Mr. Roger Schultz) and Phillips Petroleum Company (presented by Ms. Kay Wyatt). The \$500 second place prize was also provided by Phillips Petroleum Company (presented by Ms. Kay Wyatt). The \$300 third place prize was again provided by Phillips Petroleum Company (presented by Ms. Kay Wyatt). The three fourth place prizes of hard disk drives were provided by Seagate Technology (presented by Mr. John Worden).

Each student participating in the contest received tickets to the awards luncheon which was held at the Adams Mark Hotel in the main banquet room immediately after the competition at 12:30 p.m. on August 5, 2002. These tickets were provided in advance to the contest chair person and given to the contestants prior to the luncheon.

As mentioned earlier, the judging was scheduled to be held in one session on Monday morning, August 5, from 8:20 a.m. until 12:00 noon in the Main Auditorium on the OSU Tulsa campus. This auditorium seated approximately 350 people and approximately 200 people attended the session.

CONTEST:

Based on this success and large attendance at the session, we would like to reiterate that the student paper presentations should be a regular session held along with other technical sessions or, if possible, at a separate time at the beginning of the symposium.

Each contestant was permitted 15 minutes for his or her oral presentation and five minutes for questions. Attendance at the contest session was open to all who had registered for the symposium, including advisors of the student contestants. The entire session actually lasted a total of approximately four hours without having a break.

The contestants were assessed on the basis of four criteria worth 25 points each:

1. Importance of the topic
2. Quality of the technical content
3. Quality of the presentation
4. Student's understanding of the technical content of the paper as demonstrated through responses to judges' questions.

The judges met immediately after the session and determined the order of finish of the first seven places based on the total points scored (two first place winners, a second place winner, a third place winner and three fourth place winners). The contest judges indicated how impressed they were by the overall quality of the student papers in this year's contest. Additionally, they highly recommended certain enhancements to the contest procedures.

As in the aforementioned statements, all student contestants were provided tickets to the awards luncheon. All students were required to sit at two tables in the front of the room specifically designated for that purpose.

All participants were presented with award certificates. The fourth place finishers were presented with award certificates first, followed by the hard drives provided by Seagate Technology. The third, second and first place prize winners were then presented with their awards certificates in that order. The students were as follows:

First Place (tie)

\$1,000	Tommy Tsang, McGill University, Canada, Paper title: <i>Micro-Electromechanical Variable Capacitors for RF Applications</i> ; and
\$1,000	Anthony Long, University of California, Santa Barbara, Paper title: <i>A 13W Current Mode Class D High Efficiency 1 GHz Power Amplifier</i>

Second Place

\$500 Sebastian Magrierowski, University of Toronto, Canada,
Title: *Nonlinear Analysis of CMOS LC-Tuned VCO Phase Noise*

Third Place

\$300 Omar Elheelay, University of Missouri, Kansas City, Title:
A Prototype of WideBand/Ethernet Bridge Using WEMAC

Fourth Place (tie)

Disk Drive Chuang Zhang, Louisiana State Univeristy, Baton Rouge,
Title: *A 0.8V Ultra-low Power CMOS Operational Amplifier Design*

Biju Mullal Veedu, Oklahoma State Univ., Tulsa, OK,
Title: *Simple Adaptive Heterodyne Filter*

Zhangioen Tang, Fudam University, Shanghai, China,
Title: *High-Performance All-Digital Quadrature Frequency Synthesizer/Mixer*

Prizes were provided as follows:

First Prize	\$1,000	Provided by Halliburton Company presented by Mr. Roger Schultz
	\$1,000	Provided by Phillips Petroleum Company presented by Ms. Kay Wyatt
Second Prize	\$500	Provided by Phillips Petroleum Company presented by Ms. Kay Wyatt
Third Prize	\$300	Provided by Phillips Petroleum Company presented by Ms. Kay Wyatt
Fourth-Sixth Prizes	Hard Disk Drive	Provided by Seagate Technology presented by Mr. John Worden

Photographs of awards being presented. Other student paper-related photographs.



First Place Winner Tommy Tsang



First Place Winner Anthony Long



Second Place Winner Sebastian Magierowski



Third Place Winner Omar Elkeelany



Fourth Place Winner Chuang Zhang



Fourth Place Winner Biju Veedu



Fourth Place Winner Zhangwen Tang

RECOMMENDATIONS FOR ENHANCING THE IEEE INTERNATIONAL
MIDWEST SYMPOSIUM ON CIRCUITS AND SYSTEMS STUDENT PAPER
CONTEST:

1. REPORT

Each contest chairperson should present a report along the lines of the present one - at least as far as the major sections are concerned.

2. PAPERS AND THEIR SELECTION

- a. To provide a uniform representation across all tracks.
 - Each track chair should provide two papers selected according to their
 - i) Technical content (score/100 basis)
 - ii) Importance of area (score/100 basis)
 - These papers would comprise all papers to be used in the student paper contest
- b. To provide judges with more depth since essentially all student presentations provided additional details over and above their original papers,
 - Each student selected should be given the option to provide more details in an expanded version of their paper.
- c. To provide more incentive
 - Top expanded papers could be guaranteed publication in some IEEE Transaction.

3. JUDGES:

- a. To provide for efficiency,
 - Judges should be solicited at the previous symposium steering committee and technical program committee meetings. In addition to the obvious, an additional objective would be to provide them with selected student papers at the earliest possible time.

CONCLUSION:

In conclusion, the 2002 MWSCAS Student Paper Contest was a resounding success. It was an encouragement to students and other symposium attendees. We hope the enthusiasm generated this year can be continued and the best and brightest of our universities will be attracted to build the next generation of MWSCAS participants!

APPENDIX I

(Sample Letter to Student Presenters)

APPENDIX II

(Sample Letter to Judges)

Dear _____

Thank you for agreeing to assist with the judging of the sixth annual MWSCAS student paper contest to be held in Tulsa, Oklahoma as part of the 45th MWSCAS on Monday morning, August 5, from 8:20 a.m. to 12:00 noon. Attached to this e-mail are the ten papers that will be presented on Monday morning. Please read through the papers and rate each paper on the following items:

1. Importance of the topic (25 points)
2. Quality of the technical content (25 points)

Please assign scores to all ten papers before coming to the symposium. On Sunday evening at 8:00 p.m., we will meet at the Adam's Mark Hotel in Room XXXX to discuss the papers and to be sure we all understand the procedures for the contest on Monday. At the contest on Monday, the students will present the papers and we will rate the presentation on the following:

3. Quality of the presentation (25 points)
4. Student's understanding of the technical content of the paper as demonstrated through questions (25 points)

Please prepare at least three questions to ask each of the students. On Sunday evening we will review these questions and select the questions that we will be asking the students on Monday. However, we will be free to ask additional questions on Monday as well, but we want to be sure we have adequate questions to judge the student's understanding of the technical material they are presenting.

PLEASE REPLY TO THIS E-MAIL AND CONFIRM THAT YOU CAN ATTEND THE MEETING ON SUNDAY, AUGUST 4, AT 8PM AT THE ADAM'S MARK HOTEL IN TULSA, OKLAHOMA.

Please phone or e-mail me if you have any questions. My telephone number is: (530) 752-1423, and my email is branner@ece.ucdavis.edu.

Thanks,

Rick Branner
Chair, MWSCAS 2002 Student Paper Contest

APPENDIX III

(Sample Award Certificate)