

出國報告（出國類別：國際會議暨大學參訪）

ISCAS 2007 New Orleans
Louisiana Tech University
Houston University

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ISCAS REPORT

一、The IEEE International Symposium on Circuits and Systems (ISCAS) is the world's premier networking forum of leading researchers in the highly active fields of theory, design and implementation of circuits and systems. ISCAS 2007, sponsored by the IEEE Circuits and Systems Society and supported by the University of Louisiana at Lafayette was held in New Orleans, USA from 27 to 30 May 2007. The Symposium focuses on “Circuits and Systems for Ubiquitous Computing, Sensing, and Perception, including mobile communications, multimedia systems, sensor interface, and biosystems.” It attracted about 1,200 attendees from Universities and industrial companies from geographical areas including USA, Europe, China, India and Australia. The regular program is composed of 892 papers spread over 18 tracks, 124 lectures and 57 poster sessions spread over three days. The papers originate from **44 different countries**, making this symposium one of the **leading occasions for interaction** among the most important researchers in the areas of electronic circuits and systems from all over the world. One of the highlights of the technical program is three keynote lectures by prominent researchers and leaders from industry and academia. They address the main theme of the conference. The distinguished list includes: Greg Papadopolous, SUN Microsystems, Inc., Dennis Buss, TI, Inc., and Rosalind Picard, MIT Media Lab. ISCAS 2007 also includes several firsts: A student paper contest is taking place for the first time at ISCAS. A live demo contest among all the interactive demos special sessions. The top three will be awarded.

二、The conference has been very fruitful for me. It provided an excellent opportunity for networking on a high international level and provides a great forum for the exchange of ideas. The key points for me have been the following.

- I became new member of two IEEE Technical Committees: **BioCAS** and **VTA**.
- I chaired the Special Session on “**Enabling Technology in Drug Delivery and Clinical Care**”
- I presented my paper in the oral session on “**Wearable & Implantable Devices**”
- I have been a **Review Committee Member** for ISCAS 2007 and have also been appointed RCM for 2008.
- I made new contacts and met up with **collaborators from the UK** to discuss the progress of my current research projects.

三, **Louisiana Tech University** offers a Biomedical Engineering Program with an B.S. and a Ph.D. track. The Biomedical Engineering Program at Louisiana Tech is one of only twenty two in the United States which is accredited by The Accreditation Board of Engineering and Technology (ABET) and was the seventh program to achieve this goal. Graduates of the program are well prepared for taking the Fundamentals of Engineering examination. Established in 1972, the Biomedical Engineering Department remains as one of the oldest, largest and strongest such programs in the United States. The curriculum combined different subjects from the engineering disciplines and enriches it with medical expertise. This is a very interesting program, which might also be valuable for integration into the NSYSU framework. From Louisiana Tech we can learn a good program setup by following their requested set of learning outcomes for the Bachelors program, which are as follows.

- An in-depth understanding of engineering principles and biological/medical concepts in a core area of engineering.
- A broad understanding of engineering, and scientific principles & responsibilities, and the ability to apply these principles to design and analysis.
- A broad understanding of social, cultural, and ethical principles and responsibilities.
- An ability to identify, define and solve complex problems that cut across disciplines.
- An ability to apply math, science, and engineering to problems at the interface between engineering and biology.
- An ability to communicate effectively using appropriate technology and efficiently use information resources.
- An ability to work collaboratively in multi-disciplinary teams and understand team dynamics.
- The ability to generate questions and hypotheses, design experiments that will provide meaningful answers, and collect and interpret measurements from both living and non-living systems.
- The ability to adapt to sociological and technological change.
- A significant professional or research experience prior to graduation.
- The ability to use modern engineering tools in experiments, analysis and design, and to assess the appropriateness of these tools.
- An understanding of contemporary Biomedical Engineering applications of Technology and their uses in health care.



The College of Technology at the **University of Houston** is divided into several Departments, including the Department of Engineering Technology, which is the most interesting for me. The department offers six Bachelor of Science (B.S.) degrees, a Master of Technology (M.T.) degree, and several minors associated with fields of study within the department. Three Bachelor of Science degrees have majors in Computer Engineering Technology, Electrical Power Engineering Technology, and Mechanical Engineering Technology. These degrees are accredited by the Technology Accreditation Commission (TAC) of the Accreditation Board for Engineering and Technology (ABET). The department will begin offering courses in fall 2007 for the newly approved B.S. in Biotechnology (pending approval by the Coordinating Board) under a US\$1M grant from the Texas Workforce Commission and a US\$145K NSF CCLI grant. Dr. Iyer is currently developing the undergraduate biotechnology degree program and curriculum. She is developing a project based curriculum in collaboration with biotech industry and academic partners to design courses that will align with industry standards and create new laboratory modules to integrate bioprocessing and nanobiotechnology and has an emphasis on environmental biotechnology. In addition she is developing training programs for incumbent biotech workers.

四, ISCAS is an excellent conference as it allows for early presentation of research work. Support for attending this conference is worthwhile.

五, The **conference proceedings** are available on a CD-ROM, which was included in the conference package together with a carrier bag and information leaflets giving the data of future IEEE conferences and new Journals in the area, such as the new **IEEE BioCAS Journal**. The 1st issue of the BioCAS Journal has just been released and free copies where available to take away. The conference proceedings carry the ISBN 1-4244-0921-7.

六, In general, attending ISCAS 2007 was a very pleasant and fruitful experience; not only it broadened my knowledge in integrated circuit design, but it also helped me in improving my paper strength and technical depth for a future submission to an IEEE Journal. Moreover, I made personal contacts with several Professors in the field, joined Technical Committees and showed activity in the IEEE as Chairman and RCM.