

## **NEWS RELEASE**

---

Embargoed until 06 October 04, 5pm

Total: 2 pgs including this pg

### **Media contact**

Mr Ng Aik Kiat  
Assistant Manager  
Corporate Communications Office  
Nanyang Technological University  
Tel : 6790 6772  
Mobile : 9191 4836  
Email : akng@ntu.edu.sg

**Singapore, 06 October 2004**

### **NTU develops Singapore's first directional sound projection system**

Imagine saying sweet nothings to your beloved in a packed cinema knowing full well that only she can hear you. Or watching a movie that is simultaneously being screened in English and French and hearing the dialogue only in the language of your choice. Far-fetched as these scenarios may seem, both are now on the cusp of reality thanks to the development of Singapore's first directional sound projection system by Nanyang Technological University (NTU).

In normal circumstances, sounds we utter or hear from the radio fill the room in sound waves. Mixed with ultra high frequency sounds, however, researchers from NTU's School of Electrical and Electronic Engineering (EEE) have found that they could "pack" and shape sound waves into beams.

These researchers, which include Prof Er Meng Hwa, Deputy President of NTU and Dean of EEE, then developed a projection system, called the NTU Audio Beam System (NTU ABS) to direct these sound beams in desired directions so that only targeted listeners can pick up the sound beams and hear what is being transmitted. This directional sound projection is made possible through the use of complex digital signal processing techniques.

The applications for such an innovation are limited only by imagination. From entertainment to education and marketing, the NTU ABS promises to herald changes in the way we communicate and interact.

Several patents have been filed in both Singapore and the United States. In the latter, a similar system is believed to be in use for defence applications.

The eight-member research team of three professors, three postgraduate and two undergraduate students took three years and about \$20,000 to develop the system. What's interesting is that the hardware for the NTU ABS is easily available off-the-shelf. The software, however, is what the research team hopes to market. Led by EEE's Assoc Professor Gan Woon Seng, the researchers are now looking forward to exploiting the full commercial value of their innovation.

Says Assoc Prof Gan, "With the NTU ABS, we no longer need physical walls to block and contain sounds. We can instead create private listening environments and project sounds in specific directions. Our team is excited to have come up with the first such system for Singapore and hope it will bring about exciting applications for industry users and the common man-in-the street, whether in Singapore or overseas."

\*\*\* END \*\*\*

### **About Nanyang Technological University**

The Nanyang Technological University (NTU) is a top-tier university, ranked among the best science and technological universities in Asia. It has a business school that is consistently ranked among the top ten in Asia.

Established in 1991, the university has since been positioning itself to be a global university of excellence and is committed to its mission of *Educating Leaders and Advancing Knowledge for Singapore and Beyond*. NTU has an undergraduate and graduate enrolment of about 25,000 and an international faculty of over 1,500. It offers a broad-based curriculum, which focuses on the development of global views, entrepreneurship and adaptability, through the following schools:

1. College of Engineering, which consists of five schools:
  - Civil and Environmental Engineering
  - Computer Engineering
  - Electrical and Electronic Engineering
  - Materials Engineering
  - Mechanical and Production Engineering
2. Nanyang Business School
3. School of Biological Sciences
4. School of Communication and Information
5. School of Humanities and Social Sciences
6. School of Art, Design and Media (*to be established by 2005*)
7. School of Physical Sciences (*to be established by 2005*)

For more information, visit <http://www.ntu.edu.sg>

---