

2006 International University Student Creativity-in-Action Contest – 2nd Prize Winner

Ms Ku Cik Ling, EE4 student has been working on her final year project in the Electrical Machines and Drives laboratory under the supervision of A/P **Sanjib Kumar Panda** and with the assistance of Mr. Tan Yen Kheng, Ph.D student. Over the period of two semesters, a nonlinear control system was developed for high precision/accuracy and high speed position control of Linear Permanent Magnet Servo Motor (LPMSM). LPMSM has been widely used in the automation and biomedical industries as servo drives for high speed and high accuracy motion control applications. The LBLDCM project work has been published in four different IEEE conferences namely PEDS'2003, IECON'2004, POWERCON'2004 and ICIT'2006 conferences since year 2003. During the IECON conference held in year 2004, Mr. Tan Yen Kheng won the IEEE student travel grant (USD500.00) from IEEE and IES to give a presentation in Korea.



Figure.1: Opening ceremony of 2006 International University Student Creativity-in-Action Contest in Taiwan

Both Yen Kheng and Cik Ling represented the National University of Singapore (NUS) in the *International* category of "2006 International University Student Creativity-in-Action Contest" held at the National Chung Cheng University, Taiwan on 18th November 2006. The NUS team is led by Associate Professor Sanjib Kumar Panda and accompanied by Associate Professor Yung Chii Liang. The theme of this competition is “**Life Is Beautiful**” which emphasized on intelligent living, innovative design and caring for the land and society. This prestigious contest is an annual competition held in Taiwan to showcase projects done by engineering undergraduate students from local universities and universities from around the world and this year it happens that National Science Council, Taiwan R.O.C. and National Chung Cheng University have the honor to host the event.



Figure.2: Starting from the left – A/Prof. Sanjib Kumar Panda, NUS; A/Prof. Yung Chii Liang, NUS; Prof. Ren C. Luo, CCU; Prof. Chien Chao Tsiang, CCU; Mr. Yen Kheng Tan, NUS; Ms. Ku Cik Ling, NUS



The students' winning piece which is known as **Precision Micro Motion System For Surgical Applications** take advantage of the high precision/accuracy and high speed capabilities of the linear brushless DC servo motor with nonlinear controller and apply it to precision/accuracy critical surgical applications.



Figure.3: The National University of Singapore (NUS) team

Among the 7 international teams from Japan, Korea, Singapore, Russia and USA that participated in the contest, the National University of Singapore team outshined and won the “**Silver Award**” which is equivalent to **2nd prize** in the *International* category contest. The results of the contest for the international category are tabulated in the table shown below. The NUS team was presented with a plaque from the Guest-of-Honor attending the event.

Table.1: Results of the 2006 International University Student Creativity-in-Action Contest for the international category

University	Professor	Remark
Massachusetts Institute of Technology, USA	Ph.D student Jackie Lee	
National University of Singapore, Singapore	Prof. Sanjib Kumar Panda Prof. Yung Chii Liang	
Southern Illinois University, USA	Pro. Max Yen	

Tokyo Metropolitan University, Japan	Prof. Yasuchika Mori Prof. Hideki Murakoshi	
Yonsei University, Korea	Prof. Kwang-Bum Kim	
Moscow Aviation Technology Institute, Russia	Prof. Salienko Nikolay	
Nanyang Technological University, Singapore	Prof. Sutthiphong Srigrarom	

Source: <https://ac2006.ccu.edu.tw/result.php>



Figure.4: NUS students won the “Silver Award” plaque for the contest