

## TKU TEAM WON THE CHAMPIONSHIP IN 2009 FIRA WORLD CUP FOR FIVE CONSECUTIVE YEARS

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2009 FIRA World Cup took place in Incheon City, Korea, from August 16 to 20, in which TKU had great performance, winning 4 golden medals and one silver medal. In the division of RoboSot (Robot World Cup Soccer Tournament), we got one championship respectively in general contest and in total score contest. In the division of HuroSot (Humanoid Robot Soccer Tournament) we won two championships in the contest of Robo Marathon and Penalty Kick, and a second place in the Shooting Ball Contest. TKU team not only gained the most medals and highest points this year, but also won the championship of RoboSot for the fifth time since 2003.

Led by Dr. Wong Ching-chang, Chair, Dept. of Electrical Engineering, Huang Kai Hsiang, He Chen-yao, Hung Chih-hui, and other 17 students of Dept. of Electrical Engineering, defeated the teams from the United States, Mainland China, and Korea, winning the championship again. Comparing to the result of HuroSot last year, we got the biggest prize and highest points, but in the individual contest, we only won two championships, one less than that of last year.

This year, TKU team used the whole new G6 robots to join the competition. With the wonderful accuracy, TKU got the full mark in the contest of Penalty Kick, winning the championship for three consecutive years. As for the Marathon contest, due to the long distance and complicated environment, only TKU team finished the game, and other teams consulted us one by one.

Huang Kai Hsiang, a fourth-year doctoral student of Dept. of Electrical Engineering, indicated that he already had some new ideas after he joined 2008 FIRA World Cup. Since the system platform of G5 robots had been used for many years, and there were certain bottlenecks in some techniques of

G5, TKU team changed the system from DSP to X86, so the G6 robots were born and yielded unusually brilliant results for their debut.

As for the robots that joined the RoboSot contest, the team improved their circuits and programs, reducing the hang up problem resulted from collision, giving them whole new properties of omni-bearing sense of sight and movement. “The new robots are faster and stabler,” said the team leader He Chen-yao, a first-year doctoral student of Dept. of Electrical Engineering. He Chen-yao indicated that in order to help their robots overcome the problems they may face in all kinds of contests, the team members tested the robots frequently during the free time. Apart from simulating different contests like robot fighting and performance testing, they would use computers to analyze the pictures of various environments, so that even they did not have real practice, they could know the same effect through off line simulation.

He Chen-yao said with smile that when they competed with a formidable rival Korean team, the Wireless Internet Access was suddenly out of function, so their robots almost “died” in the first half of the game, which really made them nervous a lot. Fortunately, their robots came back to life after instant repair. “Team cooperation is the key point that made us win,” said He.

Dr. Wong analyzes why TKU team can have great performance for these years. He indicates that students not only spend a lot of time on learning and researching, but also correct the drawbacks immediately after every FIRA World Cup, and pass down the experience to the juniors. Dr. Wong said, “Under such a good foundation and tradition, I hope that we can get championship every year, winning the glory for both TKU and Taiwan!” ( ~Shu-chun Yen )

