

The 7th Malaysian Chem-E-Car Competition 2012

CHEMICAL ENGINEERING TECHNICAL DIVISION



by Ir. Mohamad Fadzil bin Adnan @ Nan

THE Chemical Engineering Technical Division (CETD) successfully organised the 7th Chem-e-Car Competition in collaboration with Universiti Malaysia Sabah (UMS) in Kota Kinabalu. The teams from Universiti Sains Malaysia (USM) managed to garner the two top spots. The car of Ziolite team which managed to stop within 2cm from the finishing line was a clear champion while the second team of USM, the Challengers, beat the team from Army Academy of the Republic of China (A.A. ROC) by a mere 1cm, securing the second placing in the competition.

A.A. ROC took part in the Malaysian Chem-E-Car competition for the first time and was elated with their performance which was ahead of 30 teams (amongst 12 Malaysian universities and 3 foreign universities). A total of 33 teams participated in the competition setting another remarkable achievement despite the holding of the competition in Sabah for the first time. The Challengers team from USM and Brave team from Army Academy ROC also took first and second placings in the poster competition; while t-Moment from UMS, the host university, won the third place.

This year's competition further boosted the recognition of the competition as a stage for undergraduates to showcase their prowess in engineering design and innovation. The competition emphasized on the participants' creativity in maximising performance of a model car powered by a self-built chemical or fuel cell as its propulsion system. The power required to drive the model car must be generated or converted from chemical energy.

Taking the cue from current worldwide educational trends which emphasize on outcome and continuous learning, the competition seeks to equip future engineers to play an essential role in the development and progress of their countries. Promoting teamwork as one of the major elements, the competition also attempts to promote cooperation between different disciplines by allowing undergraduates from other disciplines to join the team. Experience gained in the competition would be valuable in preparation for their professional careers.

The model car competition focuses on accuracy, testing the ability of the model car to traverse a specified distance (between 15m and 25m) whilst carrying a specific load of water (100ml – 500ml). By revealing the load and distance



only about an hour prior to the start of the competition, and having different loads and distances for the two attempts for each model car, the competition further tested the participants' ability to calibrate their model cars on the spot and inculcated flexibility and adaptability in the students. The model car that comes to a stop nearest to the designated line or distance would be declared the winner.

Out of the 33 teams in this year's competition, there were two teams from Universiti Gajah Mada and one from Institut Teknologi Sepuluh Nopember of Indonesia. The National University of Singapore returned to the competition after a one year lapse with two teams, while the Army Academy of the Republic of China was the final foreign participating team. The 7th competition was one of the most successfully organised competitions and the Chemical Engineering Technical Division owes this success to the contributions and support from lecturers and students of UMS as well as the IEM Organising Committee.

The teams, despite the intense competition, demonstrated superb sportsmanship by supporting each other. The winner of the car competition received a cash prize of RM3,000 while the second and third placed teams received cash prizes of RM2,000 and RM1,000 respectively. The results of the competition are presented in the table on page 35.

Table 1: Results of the competition

No	Team Name	Best of Two
1	Ziolite (USM)	0.02
2	Challengers (USM)	0.12
3	A. A. ROC (Army Academy ROC)	0.13
4	ZEPHYR (UMS)	0.19
5	RED LEXUS (UKM)	0.24
6	t-moment (UMS)	0.25
7	Spe-k-tronics (IT SN)	0.55
8	Subali II (UGM)	0.56
9	Fast 4 (UTP)	0.59
10	UNSHAKEN (NUS)	0.9
11	Vector 2.0 (MICET)	0.95
12	Cross Team (UTAR)	1.47
13	Brave (Army Academy ROC)	1.64
14	Rogayah Yippie (MICET)	1.79
15	Sugriwa II (UGM)	1.9
16	DAS AUTO (UKM)	1.95
17	Vermi Energizer 2.0 (UTP)	2.15
18	BUMBLE BEE (UKM)	2.57
19	Elechem (USM)	2.93
20	Turbang (NUS)	3.13
21	InnoChem (UTAR)	3.31
22	KUDA BELANG (UiTM)	4.66
23	EXQUISITE (UNITEN)	4.68
24	MM's Car (UMP)	4.7
25	ALPHA (UM)	5.26
26	Going Merry (TATIUC)	5.54
27	FURION (UMS)	6.42
28	Strikeforce (UMS)	6.74
29	Chem Troll-E-d (UTAR)	8.78
30	First Generation (UM)	10.24
31	The Chequered Flag (SEGi)	11.01
32	The Pro's (Curtin Sarawak)	11.33
33	CHEMIST 221 (UiTM)	13.42

The poster competition, held in the afternoon after the model car competition, was aimed at encouraging undergraduates to speak in public and to polish their presentation skills. Participants were given 10 minutes to present their model cars and to describe the propulsion system, as well as the innovative and creative ideas they have adopted in areas such as the propulsion system, safety, environmental features, efficiency and overall performance. Assessment was made based on the following criteria:

- Description of the chemical reaction/ power source/ stopping mechanism (20%)
- Design creativity and unique features of the vehicle (20%)
- Environmental and safety features (20%)
- Economic aspects (20%)
- Quality of the poster and team member presentations (20%).



UMS also hosted a pre-competition dinner, where engineering students from UMS put up a superb performance of songs, dances and martial arts that awed the audience. The performance clearly put an end to the dull and boring “stereotyped” image of engineering students.

IEM Vice President, Ir. PE Chong officiated the opening ceremony accompanied by the Vice-Chancellor of UMS, Y.Bhg. Brig. Jen. Prof. Datuk Seri Panglima Dr Kamaruzaman Hj. Ampon, and the Dean of UMS School of Engineering and Information Technology, Assoc. Prof. Dr Rosalam Sarbatly. Dr Rosalam also officiated the closing ceremony and presented the prizes to the winners of the competition.

The Organising Committee wishes to take this opportunity to thank and congratulate Universiti Malaysia Sabah for putting up a great show, its hospitality and its cooperative spirit by being a very good host. UMS had mobilised more than 60 students, 20 lecturers, and other support staff to organise the event from arrangement of food to accommodation and logistics. The Organising Committee also wishes to express its gratitude to the judges, the IEM Secretariat and others for making the event a success.

The competition has indeed gained a lot of exposure as well as created tremendous interest in the institutions of higher learning, resulting in a number of them stepping forward to indicate their interest in hosting the next competition. After evaluating the proposals from various institutions, the CETD had selected Taylor’s University to be the host for the upcoming 8th Malaysian Chem-E-Car competition which is scheduled to be held in April 2013. ■