

8th Malaysian Chem-E-Car Competition 2013

CHEMICAL ENGINEERING TECHNICAL DIVISION



by Engr. Dr Chong Chien Hwa



ENERGY: CHEMICAL TRANSFORMATION

Energy has been identified by the National Academy of Engineering, USA, as one of the grand challenges for engineering that we need to address in order to move into 22nd century. In the 21st Century, energy prices increased, energy availability and security diminished and growing environmental concerns were like a perfect storm affecting modern life (Foster *et al.*, 2010). Imagine what will happen in the future as global population is projected to increase to 9 billion in the next 40 years (McElroy, 2010). Future chemical engineers will not only play a major role in securing sustainable energy but they will also need to ensure that future energy is green.

On 8-9 April 2013, the 8th Malaysian Chem-E-Car Competition 2013, organised by the Chemical Engineering Technical Division (CETD) of The Institution of Engineers, Malaysia (IEM) and hosted by Taylor's University, was held at Taylor's Grad Hall (TGH) in Taylor's University, Lakeside Campus.

Taking part were undergraduates from Malaysia (public and private universities) and international universities who designed chemical-powered cars. There were 34 teams of students from Universiti Tunku Abdul Rahman, Urmia University of Technology, Curtin University, Universiti Malaysia Pahang, Universiti Teknologi PETRONAS, Universiti Malaysia Sabah, SEGi University, UniKL MICET, Taylor's University, International Islamic University, Universiti Malaya, Universiti Sains Malaysia, UNIMAS, UiTM, Universiti Tunku Abdul Rahman (Setapak Campus) and Universiti Putra Malaysia.



Table 1: Results of 8th Chem-E-Car Competition

Rank	Poster Presentation Competition	Car Performance Competition	Taylor's University Special Award	Innovation Award
1	Apsara 0813 (UTP)	NGU (UTAR)	Samen (Urmia)	Apsara 0813 (UTP)
2	Cattle-Ace (USM)	Marwan! (Taylor's)		
3	The Imagineers (UNIMAS)	Rumbling Star (UMP)		

The aim of the competition was to contribute towards research and development with emphasis on energy efficiency and discovering new sources of energy. The cars were designed to be powered by chemical reactions. Multi-disciplinary teams were encouraged but each team had to have at least two Chemical Engineering students.

The event started at 9.00 a.m. with a welcome speech from Ir. Mohamad Fadzil Adnan @ Nan, Organising Chairman, Chem-E-Car competition 2013, Professor Dato' Dr Hassan Said, Vice Chancellor and President, Taylor's University and Mr. Paul Wong Kok Kiong, Under-Secretary, Green Technology Policy Division, Ministry of Energy, Green Technology and Water (KeTTHA).

SESSION 1

A model car race and poster competition started at 10.10 a.m. and ended at 4.00 p.m. The maximum travelling distances of the model car was 25m. The race started with the model car immediately behind the starting line. The distance was measured with respect to the front-most point of the car. The model cars then stopped nearest to the finish line while carrying a specific load. The course was wedge-shaped with a starting line and the prescribed distance clearly marked in an arc of constant distance from the starting point. The car carried a certain load of water and stopped within two minutes. The winners were the teams with cars that stopped nearest to the designated finish line.

For the poster presentation competition, assessment criteria included descriptions of the chemical reaction/power source/stopping mechanism, design creativity and unique features of the vehicle, environmental and safety features, economic aspects and quality of the poster and team member presentations.

SESSION 2

The prize-giving ceremony started at 4.00 p.m. Table 1 shows the results of poster presentation, car performance competitions, special awards and innovation award. Team Apsara 0813 from Universiti Teknologi PETRONAS won the poster presentation and innovation award while Team NGU from Universiti Tunku Abdul Rahman was the champion of car performance competition.

Team Cattle-Ace from Universiti Sains Malaysia, team Marwan! from Taylor's University, The Imagineers from UNIMAS and Rumbling Star from Universiti Malaysia Pahang shared the 1st Runner-Up awards for the poster presentation and car performance competitions. The Taylor's University Special Award went to Team Samen from Urmia University, Iran.

The organising committee of the 8th Chem-E-Car Competition would like to express its gratitude to Multimedia Development Corporation Sdn. Bhd., *Kementerian Tenaga, Teknologi Hijau dan Air (KeTTHA)* and Taylor's University for sponsoring the event. ■

REFERENCES

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- [2] McElroy, MB. (2010). *Energy: Perspectives, Problems, & Prospects*. Oxford University Press, NY, USA, pp 3.

Engr. Dr Chong Chien Hwa is the Associate Dean (Learning & Quality) of School of Engineering, Taylor's University. He is a Chartered Engineer, Engineering Council, UK, Member of Institution of Chemical Engineers (IChemE), UK and Member of Institution of Engineering Technology (IET), UK.