

6th IEM Design Competition 2017/2018

CHEMICAL ENGINEERING TECHNICAL DIVISION

reported by



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The 6th IEM Design Competition was held from July 2017 to May 2018. Taking part were 24 teams from Chemical Engineering programmes of various universities.

The competition title was "Monetisation of Associate Gas (AG) from Offshore Operations for Sustainable Chemical Production". Table 1 shows the feed composition of AG from brown field.

The design submitted had to be original and should not have been previously submitted or published. It should exclude GTL (Gas to Liquid), GTP (Gas to Power) and GTS (Gas to Solid) technologies. The competition was divided into two stages.

Stage 1: Participants were required to submit two reports consisting of a process flow diagram, equipment selection, process demonstrated sustainability concept and mass and energy balances (validated using professional software), equipment design, process and instrumentation diagram and economic performance. Academicians and industrialists assessed all the reports submitted.

Stage 2: Eight shortlisted teams were required to submit a management report to be presented at the design finale on 12 May, 2018. See Table 2 for names of winners of the 6th IEM design competition 2017/18.

The objective of the competition was to enhance design competency, practically and methodologically. It was also an excellent opportunity for students to meet and exchange ideas with practising engineers. To achieve this objective, Prof. Ir. Dr Dominic Foo, Ir. Razmahwata and Ir. Dr Chan Tuck Leong conducted

Table 1: Data sheet

	SPECIFICATIONS	COMPOSITION	MOL%
Field life (minimum)	10 years	Methane	70-80
Gas production		Ethane	5-10
		Propane	1-5
		Iso-butane	1-3
Gas temperature	25 to 35°C	N-butane	0.5-2
		Iso-Pentane	<1
Gas pressure	5 bar	N-Pentane	<1
		N-Hexane	<1
		Nitrogen	<1
		Carbon dioxide	5-15
		Water	0.5-5

Table 2: Winners of 6th IEM design Competition 2017/18

RANKING	TEAM MEMBERS	UNIVERSITY
1st Place	Alice Wong, Sia Meng Zher, Simreth Kaur Dhalywal A/P Ajit Singh and Yeong Kar Fai	Universiti Kebangsaan Malaysia
2nd Place	Sylvia Tan Yen Chuen, Vera Tanzil, Misalini A/P K. Karunakaran, Ong Meng Hong and Dzakwan Al-ammar bin Othman	University of Nottingham, Malaysia Campus
3rd Place	Teoh Shi Rui, Cheng Yoi Ying, Cheong Chin Ying, Ong Xin Rou and Sze Shin Jie	University Malaysia Sabah
4th Consolation	Yip Yew Hong, Hua Zai Heng, Mohamed Mostafa Elsayed Elnegihi, Sam Ying Bin, Shane Soong Wern Hou	University of Nottingham, Malaysia Campus
5th Consolation	Tan Chee Shing, Wong Yong Yuen, Yap Tsui San, Revathi A/P Kuppusamy and Edzmiera Salfena bt Mohd Sukrie	Taylor's University
6th Consolation	Mohammed Saleh Taher, Ranawaka Lekamge Sudesh Dilan Dias, Khoo Zhi Sheng and Liew Kiat Fei	University of Nottingham, Malaysia Campus
7th Consolation	Ho Jo Yee, Tang Yi Hui, Sharwin Raj, Vinosyah Palaniandy, Alawi Nasser	Taylor's University
8th Consolation	Chew Shee Jia, Lim Jing Xiang, Paula Verdasco Pino and Gurpreet Singh	Heriot-Watt University Malaysia Campus

a half-day seminar on HAZOP (Hazard & Operability Study) and sustainable design with process

integration as well as a talk on the basis of design and managing FEED competition. ■