

## INTRODUCTION



The IEM-METD Student Design Award 2016 is organized by the Mechanical Engineering Technical Division of The Institution of Engineers Malaysia together with universities. The 1<sup>st</sup> IEM-METD Student Design Competition is set in the context of Construction Mechanization. The productivity in construction industry in Malaysia grew by a moderate 5.2% in 2013 to RM23,975, contributing 3.7% to Malaysia's gross domestic product (GDP). The construction industry has high forward-linkages with the service sector and even

higher backward-linkages to the manufacturing and services industries. The industry is an important economic driver and builds all the social and economic facilities that enable wealth creation and economic growth. The productivity of the construction sector growth is slow due to some on-site construction practices and tasks still require a high degree of labour input. With what kind of solutions and developments can engineers contribute to the mechanization of construction industry to improve the productivity? The design competition is open to teams of minimum 2 and up to 5 students of engineering related courses at universities. This competition is one of the initiatives by IEM-METD to support the integrated design approach at higher institutions.

### The time-line of the challenge is:

- 3<sup>rd</sup> Feb – First announcement of the IEM-METD Student Engineering Design Competition
- 31<sup>st</sup> Mar – Online submission of full proposals are due
- 5<sup>th</sup> April - Applicants will be notified on outcome of the review process via email
- 14<sup>th</sup> April – Eight finalists will be invited for presentation during CIDB-IEM Construction Career Fair 2016 @ KLCC
- 16<sup>th</sup> April – Announcement of winner during the IEM AGM @ Sunway Hotel  
*(all date is subject to change without any further notice)*

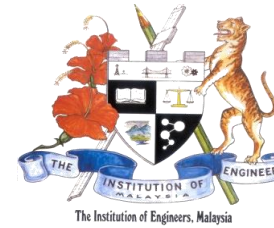
### The competition involves four elements:

- ❖ Work in a team to design a device or equipment that is able to improve the productivity in the construction industry
- ❖ Compete with other teams to design an innovative product
- ❖ Produce a poster to explain and publicize the team's work
- ❖ Deliver presentation explaining the rationale for the team's work

All proposals will be reviewed by the Mechanical Engineering Technical Division Committee and technical experts within IEM. We may interview teams as part of this process. We will invite final eight teams for a formal presentation of the proposal for a final phase. There is no travel subsidy or reimbursement for the students, student section advisors, or any representatives of the same to the presentation at venue at KLCC or to prize giving ceremony.

### IEM-METD Design Competition uses the following criteria for selection of proposals:

- ❖ Novelty – Is the idea fundamentally different and unproven?
- ❖ Valuable – Could the idea create substantial new value if it works?
- ❖ Doable – Is there a plan to prove the concept quickly and affordably?
- ❖ Relevant – Is the idea relevant to the construction mechanization?

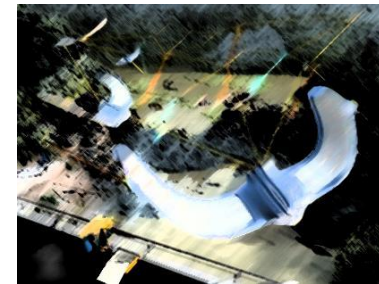


# THE IEM-METD STUDENT DESIGN AWARD 2016

Organized by:  
**Mechanical Engineering Technical Division (METD)**

Organized in conjunction with  
**CIDB-IEM Construction Career Fair**

**THEME:**  
**CONSTRUCTION MECHANIZATION FOR  
PRODUCTIVITY IMPROVEMENT**



**Registration Closing Date:**  
**31<sup>st</sup> March 2016**

### Secretariat

c/o The Institution of Engineers, Malaysia  
Bangunan Ingenieur, Lot 60/62, Jalan 52/4  
P.O. Box 223 (Jalan Sultan), 46720 Petaling Jaya, Selangor  
Tel : 03-79684001/2 Fax : 03-79577678  
Website: [www.myiem.org.my](http://www.myiem.org.my) Email : [iemetdesign2016@iem.org.my](mailto:iemetdesign2016@iem.org.my)

### REGISTRATION FEE

Free for IEM Student Member  
RM30 per person for non-IEM members

## PRIZES

- a) Cash prizes will be awarded to the first, second and third place winners. There will be separate, independent, prizes for the poster and presentation elements of the challenge.
- b) Team prize values for the best design shall be:
  - ❖ 1<sup>st</sup> prize: RM 2500 + plaque
  - ❖ 2<sup>nd</sup> prize: RM 1500 + plaque
  - ❖ 3<sup>rd</sup> prize: RM 1000+ plaque
  - ❖ 5 Consolidation prizes: Certificate + plaque
- c) The team judged to have produced the “**Best Poster**” shall be awarded a further cash prize of RM500, to be divided equally between the members.
- d) The team judged to have given the “**Best Presentation**” shall be awarded a further cash prize of RM500, to be divided equally between the members.
- e) Appropriate certificates of recognition will be awarded to all participants, winning team members and the winning institution.

## RULES

### A. Rules for the Extended Abstract or Video

Teams should submit a short paper in Extended Abstract Format (1 pages maximum) or 1 minute Video summarizing their design solution and its evolution. Teams may provide supplementary material by using both forms, the Extended Abstract and 1-minute video. The Extended Abstract or Video should illustrate how your solution able to improve the construction productivity through mechanization.

The Extended Abstract may include:

- A description of your chosen design focus and proposed solution, with a summary of the approaches taken within your design process, the real life problems that you are solving, and your main claims for your proposed solution with evaluation results

The 1 minute Video Material may include:

- Focus on telling us succinctly about the problem you are trying to solve and how your innovation / technology will solve the problem.
- The video should be of **yourself or your team member** explaining your innovation / technology, **NOT** a product demo clip. No advanced video editing is required. Content of your message is more important for our consideration. Make sure you voice is clear. The use of webcam or any handheld devices (e.g. phone, tablet) that record clear video and audio is highly encouraged

### B. Rules for the Poster

The poster is a demonstration of the 8 finalist team’s ability to sell their design solution using graphical and pictorial skills.

- a) The poster shall be A1 size in portrait format. It must clearly display the logos of the team’s University and of the IEM.

- b) The poster should concisely describe the device, how it operates and the engineering principles it is based on. In producing their posters, participants should take account of the judging criteria.
- c) Detailed costing of the device is not required in the poster.
- d) The posters will be assessed and judged by the METD Committee Member or an appropriate delegate. The result of the subsequent decision will be final.
- e) The poster will be left for public display at the career fair.

### C. Rules for the Presentation

The presentation is a chance for 8 finalists to pitch their design solution to the Challenge using verbal and presentational skills.

- a) Presentation data files should be submitted to the organisers’ IT/AV representative on arrival at the final event. The format shall be Microsoft Powerpoint 2010 (.pptx) or Adobe Reader X (.pdf), to be run under Windows 7 on a generic PC. The storage medium should be a USB data stick. Students should not assume the availability of a connection to cloud-based storage or other remote resources. Presentation from students’ own laptops may be possible but only a VGA analogue interface can be guaranteed, and no compatibility of display resolution is guaranteed. DVI, HDMI, Apple Mac, AirPort, wireless, DisplayPort and other interfaces cannot be guaranteed and should be assumed to be unavailable. Students will be allowed – and are encouraged – to test their presentations as soon as possible on arrival, and make sure that they work with the IEM AV equipment.
- b) The length of the presentation is five to seven minutes, plus typically five minutes for questions. It can be delivered by any number of team members, from one person to all members of the team.
- c) Presentations will be assessed according to the competition scheme. Judge from the respective University will not mark their own student’s presentation.
- d) Each team will be required to answer questions on their design.

### D. Enforcement of the Rules

- a) On matters relating to evaluation procedure, the authority will be the chair of the IEM-METD Design Award organizing committee or his/her delegated representative(s).
- b) The judging panel comprises one representative from each of the participating universities, the Chair of the organizing committee and the METD Chairman.
- c) The decisions of the panel of judges will be final.
- d) In addition to the rules for the final outlined above, universities are responsible for internally ensuring that the spirit of the competition is adhered to during the design prior to the competition Final.
- e) If a team wishes to lodge a complaint or appeal, or to query a procedure or rule infringement they must do so through the chair of the organizing committee or delegated representative. The result of the subsequent decision is final, with no further appeal.

## ORGANIZING COMMITTEE

Advisor : Ir. Dr. Cheong Thiam Fook  
Ir. Loo Chee Kin  
Chairman : Ir. Dr. Tan Chee Fai  
Co-Chairman : Moey Lip Kean  
Secretary : Assoc. Prof. Ir. Dr. Goh Hui Hwang  
Treasurer : Nor Azilan Jaafar

## THE IEM-METD STUDENT DESIGN AWARD 2016

### PART A: REGISTRATION FORM

Name of Team: _____		
Educational Institution Name: _____		
Advisor Name: _____		
No.	Name	IEM Student Membership No.
1	<b>Leader:</b>	
2		
3		
4		
5		

### PART B: CONTACT DETAILS

ADDRESS 1: (Corresponding and mailing address)	
CITY:	
STATE:	
POSTCODE:	
EMAIL ADDRESS:	
MOBILE NUMBER:	

### PART C: PAYMENT DETAIL

Payment can be made via bank transfer, cheque or banker's draft to IEM. The payment detail will be informed via email upon submission of registration form.

### PART D: DECLARATION

**\*All the advisor and participants must read and sign the following statement:**  
We/I declare that the information given on this form is correct. We/I understand and agree that if we/I make any false statements, submit false information or fail to disclose information requested in this application, we/I will be disqualified from this competition.

We/I have read and fully understand the guideline or rules and regulation in which governing the IEM-METD DESIGN AWARD 2016 and agree to abide by those rules and regulations.

Advisor and Participant(s) Signature(s):

No.	Name	NRIC No./ Passport No.	Signature	Date
1				
2				
3				
4				
5				
6				

- Please complete and submit this registration form and 1 page concept paper or the video clip before or on **31<sup>st</sup> Mar before or at 11.59pm**. The completed registration form and 1 page concept paper should be emailed to [iemetdesign2016@iem.org.my](mailto:iemetdesign2016@iem.org.my).
- If you have any enquiries about this registration form, rules and regulations of the competition, please contact the Organizing Secretariat at  
Tel : 03-79684001/2  
Email: [iemetdesign2016@iem.org.my](mailto:iemetdesign2016@iem.org.my)
- All fields are mandatory to be filled.