

## Half-Day Talk on “Application of Computational Fluid Dynamics (CFD) and its Application in Biomedical Engineering for Human Well-Being”

**Date** : Saturday, 3<sup>rd</sup> October 2020  
**Venue** : IEM (Southern Branch) Training Centre, 24B, Jalan Abiad, Taman Tebrau Jaya, 80400 Johor Bahru.  
**Speaker** : Prof. Dr. Kahar bin Osman, UTM

### Synopsis

Computation Fluid Dynamics or more commonly known as CFD is a very powerful tool to analyse fluid flow and heat transfer in various conditions. The application of CFD in biomedical engineering started around 50 years ago and has shown tremendous reliable results to the medical world. The development of computational facilities has help the development of CFD in biomedical engineering and increases its efficiency and accuracy.

The main objective of this talk is to provide the participants with some basic knowledge of Computational Fluid Dynamics (CFD) and how CFD package has encroached the area of biomedical engineering and provided some insights into the behavior of fluid flow inside the human body. It will also include the challenges involved during the process. The participants will also be exposed to some basic modelling techniques being used in the process of bio fluid modelling. Finally, some case studies and demonstration of the modelling procedures will be shown. Useful results that will aid medical practitioners for human well-being will then be discussed.

Time	Tentative Programme
8.30 a.m. – 9.00 a.m.	Registration
9.00 a.m. – 9.10 a.m.	- Welcome Speech By IEM (SB) Organising Committee
9.10 a.m. – 10.30 a.m.	- Introduction to CFD and Its Application in Biomedical Engineering
10.30 a.m. – 10.45 a.m.	- Coffee Break
10.45 a.m. – 12.00 p.m.	- Modelling in Biomedical Applications using CFD
12.00 p.m. – 12.30 p.m.	- Case study and Discussion - Question & Answer Session
12.30 p.m.	Closing & End of Talk

### About the Speaker:

Prof. Dr. Kahar Osman graduated from University of Hartford, Connecticut, USA with Bachelor’s Degree in Mechanical Engineering in 1989. He obtained his MSc (Computational Fluid Dynamics) from University of Leeds, U.K in 1995 and PhD in Mechanical Engineering from University of New Hampshire, New Hampshire, USA in 2004. Prof. Dr. Kahar is currently a Professor in the Faculty of Engineering and the Head of Computational Fluid Mechanics Laboratory, UTM. He is active in the Computational Fluid Mechanics Group and Institut Jantung Negara (IJN)–UTM Cardiovascular Engineering Center. His research interests include application of computational fluid dynamics (CFD), fluid-structure interaction (FSI) and experimental techniques in the study of mechanical and cardiovascular systems, as well as analysis, design, and optimizations of cardiovascular devices. He has been practicing CFD for more than 25 years. He started his work in flow modelling in the area of mechanical engineering and moved to biomedical engineering field since 10 years ago. He and his team have produced their own code for CFD modelling for bio-fluid. He is also currently working on stent development for different application. He has published more than 120 articles in peer reviewed journals and proceedings. Currently, he is attached to the School of Biomedical Engineering and Health Sciences at UTM. To date, he has led 15 projects as principal investigator and 26 projects as co-investigator. Apart from that, he has published more than 100 peer-reviewed academic journal articles in various level of publications.

### Participant Fees:

Grade	Online	Normal
IEM Corporate Member & Graduate Members (30 years and above)	RM 70.00	RM 90.00
IEM Senior Engineers (60 years and above) & IEM Graduate Members (Below 30 years)	RM 60.00	RM 80.00
IEM Student Members	RM 40.00	RM 50.00
Non-Member	RM 120.00	RM 150.00

**Closing Date: 28<sup>th</sup> September 2020**

The seminar is strictly limited to **30 participants** only. Registration will be on a first-come-first-serve basis. Kindly return the reply slip to the IEM (SB) office before **28<sup>th</sup> September 2020** together with a non-refundable cheque for the participant fees made payable to ***The Institution of Engineers, Malaysia (Southern Branch)***. Alternatively, you could bank-in the participant fees into the Institution's Maybank Current Account (No. 5-013920-15708), and to facsimile both the Bank-in and Reply Slips to the Institution. The Institution requests all members co-operation in ensuring fees are paid in advance to the seminar. Please also be reminded that fees will not be refunded to absent participants who have paid, and to also note that all reservations must be paid despite participant cancellations. Thank you for your continuous support of the Institution.

Chairman, Sub-Committee on Seminar and Technical Talk, IEM (SB)



**REPLY SLIP**

To: Hon. Secretary, The Institution Of Engineers, Malaysia (Southern Branch) **Fax: 07 – 3363406**

**Half-Day Talk on “Application of Computational Fluid Dynamics (CFD) and its Application in Biomedical Engineering for Human Well-Being”**

Saturday, 3<sup>rd</sup> October 2020, 9.00 a.m. – 12.30 p.m.

at IEM (Southern Branch), Training Centre, 24-B , Jalan Abiad, Taman Tebrau jaya, 80400 Johor Bahru, Johor

I wish to attend the above talk. I enclosed herewith a cheque no. .... for the amount of RM.....as payment for the participant fee.

Name of Member: ..... Membership No:..... I/C No: .....  
Address: ..... Tel(O): .....(Fax).....  
..... Tel (H/P): .....  
.....E-mail : .....

Company's Name: .....

Signature: ..... Date: .....

**Note:** For IEM members, membership cards should be presented for identification purpose. Failure to present the card, one will be declared as a non-IEM member and he/she will be required to pay the non-IEM member fee.

**PERSONAL DATA PROTECTION ACT**

*I have read and understood IEM's Personal Data Protection Notice published on IEM's website at [www.myiem.org.my](http://www.myiem.org.my) and I agree to IEM's use and processing of my personal data*