

**TALK ON**  
**“SCI-ENGINEERING: NEXUS OF SCIENCE AND ENGINEERING  
FOR FUTURE ENERGY SOLUTIONS”**

Organised by the Engineering Education Technical Division, IEM in collaboration with  
Engineers Australia Malaysia Chapter (EAMC), and Institute of Mechanical Engineers Malaysia Branch (IMechE)  
**BEM Approved CPD/PDP: 2 hours Ref: IEM18/HQ/311/T**

Date : **29 AUGUST 2018 (Wednesday)**  
Time : **5.30 p.m. – 7.30 p.m.**  
Venue : **Auditorium Tan Sri Prof. Chee Fung Kee  
3<sup>rd</sup> Floor, Wisma IEM, Petaling Jaya, Selangor**  
Speaker : **Dr. Chockalingam Aravind Vaithilingam**  
*B.Engg. (E & E), M.Engg.(PED), PhD (Elec.Mac. Dgn), C.Engg. (UK), MIET,  
SMIEEE, LMISTE(Ind.)*

### **SYNOPSIS**

We have gone through three industrial revolutions so far. The first industrial revolution gave us mechanical equipment, water and steam engines. The second industrial revolution gave us electricity and mass production opportunities. The third revolution gave us information technology and robotics automation. We now have tools that can build many times faster than the tools we had before. As we move to next wave of revolution centered around the integration of electronic devices, gadgets in and out of the system it is important to seek revisit the way of thinking by natural habitat for the engineering solutions. Bat intelligence for collision avoidance, optimization of the problem through swarm intelligence are some to name a few originating from the fundamental sciences used by the primitive habitat. The nexus between engineering and the sciences is critical, meaning a science major need their research in an engineering lab and vice-versa.

In this talk the nexus of “sci-engineering” is explored through from the biological inspiration integrated to develop future energy solutions, the case being consistent power generation from the wind. As it is known the positioning and reassuring wind turbines in an integrated network is important towards maximizing the power output. However the challenges in the implementation is huge primarily because there is neither continuous motion due to the non-synchronous wind pattern or it is challenged by the mechanical instability in high wind tide. This topic presents the fundamental sciences adopted by the fish shoaling and schooling for the design in the wind energy technology.

The fundamental relation between science and engineering will be introduced with examples followed by exploring the habitat behavior envisioning a practical engineering design. The challenges and the opportunity is presented in this talk.

### **SPEAKER BIODATA**

**Dr. Aravind** is a Chartered Engineer registered with the Engineering Council UK, attached with Faculty of Engineering, Architecture and Built Environment, Taylor’s University Malaysia as Director for Electrical and Electronics Engineering Programme.

His earned doctoral degree in electrical machine stands gold at the Malaysian Technology Expo 2013 for its novelty in the electrical machine design. His Masters degree in power electronic and drives is from the bharathidasan University in 2001 with first class distinction. His Bachelors degree is in Electrical and Electronics Engineering from the Bharathiyar University, India in 1998. He is author of over 200 reviewed work, 6 text books and few patents. Frequent speaker in international platforms, guest speaker, moderator and masterclass tutor in teaching and learning mostly in modernized pedagogies.

He is an active member of IEEE, IET and have organized various conferences, international meetings and also competitions. He is also heading the Flagship Research Project of the Taylor’s University in the Urban Infrastructure Development towards Sustainability. He has secured a grant value of RM 2.5 million in total from the private and government during 2011-2017. His vast experience of over 18 years in teaching and research is highly recognized locally and internationally in various public disseminations.

**Ir. Prof. Dr. Mandeep Singh**  
Chairman  
Engineering Education Technical Division  
Session 2017 / 2018

### **ANNOUNCEMENT TO NOTE**

#### **FEES**

**(Effective 1<sup>st</sup> October 2017)**

#### **Members**

Registration Fee :	NO CHARGE
Administrative Fee :	
<b><u>Online</u></b>	RM15
<b><u>Walk In</u></b>	RM20

#### **Non-Members**

Registration Fee :	RM50
Administrative Fee :	RM20

- Limited seats are available on a "first come first served" basis (maximum 100 participants).
- To secure your seat, kindly register online at [www.myiem.org.my](http://www.myiem.org.my)

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