



The Institution of Engineers, Malaysia

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Talk On

“Programming and Electronics Learning Experience Through Autonomous RC Helicopter and Arduino Platform among Secondary Students”

Organized by Engineering Education Technical Division, IEM
BEM Approved CPD/PDP Hours: 2___ Ref No: IEM16/HQ/159/T

Date : 11th May 2016 (Wednesday)
Time : 5.30 pm – 7.30 pm (*Refreshments will be served at 5.00 pm*)
Venue : C&S and TUS Lecture Room, 2nd Floor, Wisma IEM.
Speaker: **Dr. Gan Kok Beng**

SYNOPSIS

Programming and electronics learning among secondary students are always challenging tasks to teachers. There are always gaps and barriers that students will say “I can’t build electronics,” “I don’t know enough to write a computer program,” “I’m not smart enough to do engineering”. With the emerging of microelectronic industry, Arduino serves a very good platform to develop teamwork by simultaneously building hardware and software with group of students. Students learn problem-solving skills that work in a wide variety of math, science, and engineering situations and fly an autonomous flight system. It was introduced in 2012 involving school children, adults and community. During the workshop, participants work in small teams of approximately four members. They start by building a simple circuit that blinks the visible LED to familiarize themselves with the different components and how to program the microprocessor. Once the participants are accustomed to their components and environment, we guide them through the process of building a more complicated circuit. With the circuits built and tested, the workshop transitions to discussing control systems and autonomous robotics. Each team loads software onto their microprocessor that issues commands to their helicopters (via the IR LED array circuit). For a final demonstration of the techniques, each team chooses a more complicated maneuver to fly and programs their system to perform that operation. It shows that learning can be fun, inspire students to learn more on their own and take the skills learned in the workshop to higher levels.

BIODATA OF SPEAKER



Kok Beng Gan was born in Malaysia, on June 22 1978. He has received the B.S. degree in Material Physics from University Technology Malaysia in 2001. He has worked as an Optical-Design Engineer from 2003 to 2005. He is currently senior lecturer in Department of Electrical, Electronic System Engineering, Universiti Kebangsaan Malaysia and a member of SPIE His research interests include biomedical signal processing and instrumentation.

Ir. Prof Dr Vinesh Thiruchelvam
Chairman
Engineering Education Technical Division, IEM

ANNOUNCEMENTS TO NOTE:

- Preferential admission to talk shall be accorded to IEM members (pre-registration and online registration are NOT required).
- Nonmembers may also attend the talk but will need to pay a registration fee of RM50 and an administrative fee of RM15. GST is inclusive.
- Members of affiliated organizations upon producing their membership cards will be exempted from paying registration fee. Administrative fee is nevertheless applicable.
- Limited seats are available on a "first come first served" basis (maximum 100 participants).
- IEM members are reminded to produce membership cards for confirmation of attendance (CPD purpose) failing which a fee of RM25 will be imposed. GST inclusive.

ADMINISTRATIVE FEE

- Kindly be informed that an administrative fee of RM15 is payable for talks organized by IEM. GST is inclusive.
- The fee would be used to cover overhead costs, building maintenance expenses as well as contribute to Wisma IEM Building Fund.
- All contributions will be deeply appreciated by IEM.
- Student Members are however exempted.

PERSONAL DATA PROTECTION ACT

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CPD HOURS CONFIRMATION

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Membership No:

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