

## TALK ON "RAILWAY POWER SUPPLY & DISTRIBUTION @ ELECTRIFICATION SYSTEM"

Organised by the Mechanical Engineering Technical Division, IEM  
 BEM Approved CPD/PDP Hours: Applying

Date : 08 February 2017 (Wednesday)  
 Time : 5.30 pm – 7.30 pm (Refreshments will be served at 5.00pm)  
 Venue : C&S & TUS Lecture Room, 2<sup>nd</sup> Floor, Wisma IEM, Petaling Jaya, Selangor  
 Speaker : Mr. Harpajan Dhillon

### SYNOPSIS

**Railway Power Supply & Distribution @ Electrification System** supplies electrical energy to railway EMU's so that they can operate without having an on-board prime mover. There are several different electrification systems in use throughout the world. Railway electrification has many advantages but requires significant capital expenditure for installation.

The main advantage of electric traction is a higher power-to-weight ratio than forms of traction such as diesel or steam that generate power on board. Electricity enables faster acceleration and higher tractive effort on steep gradients. LRT and MRT's equipped with regenerative brakes, traction motors become generators sending current back into the supply system and/or on-board resistors. Other advantages include the lack of exhaust fumes at point of use, less noise and lower maintenance requirements of the traction units. Electric trains produce fewer carbon emissions than diesel trains, especially in countries where electricity comes primarily from non-fossil sources.

A fully electrified railway has no need to switch between methods of traction thereby making operations more efficient, unless multi-system locomotives rolling stock is used, a switch of traction method may still be required. The main disadvantages are the capital cost of the electrification equipment, most significantly for long distance lines which do not generate heavy traffic. Urban railways with closely-spaced stations and high traffic density are the most likely to be electrified and main lines carrying heavy and frequent traffic are also electrified in many countries.

### BIODATA OF SPEAKER



**HARPAJAN DHILLON**, besides ensuring all system competencies compliances, being as a Sr. Training Specialist @ Vice President he is also responsible for delivering O&M training to LRT & MRT rail O&M division with specializing in the area of Electrical & Traction Power Supply Distribution System. He possesses almost 30 years of multi discipline experience in Electrical Engineering, Railway Industry and Training & Development.

Certified Instructor by Center of Instructor's and Advance Skill Training, he is also a Certified HRDF and Neuro Linguistic Programming Practitioner. Prior to joining the railways industry, he has served as Electrical Instructor with various public and private institutions. He gained hands-on and advance practical skills while undergoing Bombardier Corp's "Advance Rapid Transit System Maintenance - Key Personal" training programs, in BC Transit System Vancouver, Canada.

Besides Advance Diploma in Electrical Engineering, he is also 33 kV Electrical Competent and Energy Manager, accredited by Eco- Energy and EC. He has also successfully completed MIM "Masters Trainer" and training on "Environment Management for Malaysia" in Yokohama Japan. Besides assisting in fleet & project design review he has also involved in various local and overseas FAT's. Recently he has being actively involved and successfully graduated as EnMS and Compressor Air & System Optimization Expert, an international expert training programs under UNIDO.

Harpajan has also involved in the development of NOSS for Malaysian Skills Advance Diploma in Electrical Engineering Technologist, Electric Train & Rail Electrification System Management, and Panel Member for Electrical Engineer "Written Instructional Materials". Subsequently, he was accredited as "National Industrial Specialist" and appointed as "External Verification Officer" for Electrical Engineering, Rail Electrification, Electric Train Maintenance and Vocational Training Officer / Executive & Manager for Malaysian Skills Certification programs.

**Ir. Dr. Kannan M. Munisamy**  
 Chairman  
 Mechanical Engineering Technical Division, IEM

### ANNOUNCEMENTS TO NOTE:

- **Non members** may also attend the talk but will need to pay a registration fee of **RM50** and an administrative fee of **RM15**. GST is inclusive.
- 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).**

#### ADMINISTRATIVE FEE

- Kindly be informed that an administrative fee of **RM15** is payable for talks organized by IEM. GST is inclusive.
- Student Members are however exempted.

#### PERSONAL DATA PROTECTION ACT

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