



### **Ergonomics: Products and Job Optimisation for Humans** by Dr Chang Boon Peng

Dr. Chang Boon Peng is committee member of Electronic Engineering Technical Division (eETD) of IEM Penang. He is currently a lecturer at KDU University College, Penang.

Human factors (also known as Ergonomics) aims to optimise products and jobs for humans.

The Electronic Engineering Technical Division (eETD) in Penang has jointly-organised a three-hour technical talk, "Introduction to Ergonomics", with The University of Nottingham, Dream Catcher Consulting Sdn. Bhd. and Universiti Sains Malaysia (USM) at Dewan Persidangan USM last December 2015.

The talk was delivered by two experienced speakers, Professor Claire O'Malley and Dr. Glyn Lawson both from the University of Nottingham. Professor Claire O'Malley has over 30 years of experience in research and consultancy in the field of human-computer interaction and human factors. Dr. Glyn Lawson is a human factors specialist in the research of human factors of simulation and virtual reality (VR) technologies in design and manufacturing.

The aims of this talk were to introduce the main principles of human factors, including knowledge of physical and psychological capabilities and characteristics, and methods for implementing this knowledge as part of a user-centered process. The talk introduced attendees to benefits of integrating human factors into their company philosophy, including:

- Improving the match between products/services and customers' needs
- The ability to translate user needs into design requirements
- A reduction in costs through reduced risk of injury and operational errors
- Improving employee productivity and job satisfaction
- Improving the comfort of employees or users of your product
- Increasing the speed of learning on how to use your product
- Reduced absenteeism

Dr. Glyn Lawson explained the fundamental concepts of ergonomic design with examples drawing from industrial product design prototyping and manufacturing. Ergonomics design improves production efficiency by implementing good posture job functions to workers and eventually reduces risk factors that lead to discomfort as well as safety issues of the employee.

The presentation continued by Professor Claire O'Malley dealing with different methods for integrating human factors into an engineering process. The discussion focused on cognitive

ergonomics related to interaction of human cognitive abilities and limitations at work such as perception, memory and mental processes.

The talk was attended by 45 participants from both academia and industrial. The overall feedback for this talk was great and participants gained a better understanding on ergonomics product design to suit consumers' needs. It was undoubtedly an enriching and knowledge-deepening experience.



IEM eETD committee member Dr. Chang Boon Peng presenting token of appreciation to Dr. Glyn Lawson (left) and Professor Claire O'Malley (right).