2-Day Course on Materials and Behaviour

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The Oil, Gas and Mining Technical Division, together with Institut Latihan Sultan Ahmad Shah (ILSAS), in cooperation with the Welding Institute of Malaysia organised a 2-day course on Materials and Behaviour on 19 and 20 March, 2007. The course was presented by Shervin Makeli, MWIM.

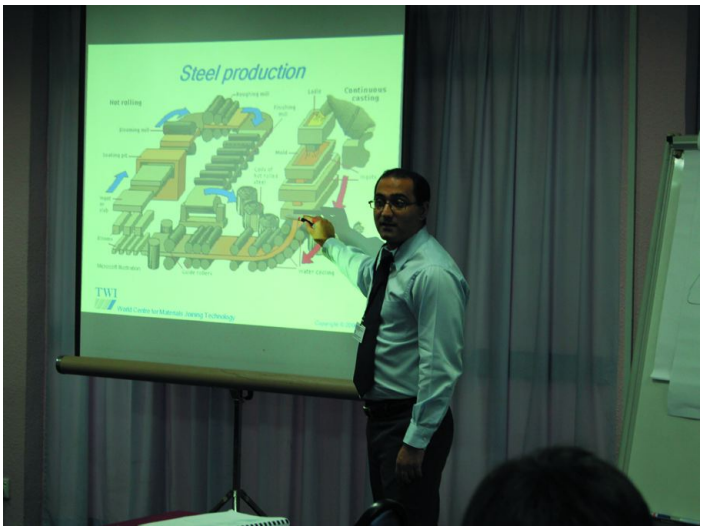
The course started of with a pre course assessment, where participants were given the opportunity to fill out a technical questionnaire that allowed the speaker to gauge the participants' collective experience, and adjust the presentation accordingly. The course proper began with an introduction to steel manufacturing methods. After morning break, the course then moved on to details of the crystalline structure of various types of metals. An introduction to fundamental crystalline topics was given before moving on phase diagrams, detailed representations of alloys that help in the understanding of various microstructures formed in solids.

Lecturer discusses a question by a participant

After lunch, the course focused on the metal of choice in the construction industry, iron. The various phases of iron were introduced. A large amount of time was spent on understanding the properties of the iron equilibrium diagram, and contemplating the effect of carbon content has on the microstructure of the alloy formed. The first day ended after discussion of the structures of welded joints, and the use of Time Temperature Transformation (TTT) Diagrams.

The second day started with the use of heat treatments on welded structures. The course then moved on to methods of material testing which is used to determine properties such as tensile strength, ductility and toughness. After morning tea break, the weldability of steels was discussed, and concerns such as hydrogen cracking, hot cracking and lamellar tearing were introduced. The course finished of on the topic of reheat cracking.

An after course assessement was performed to determine the level of the participants' understanding of the course. ■



Shervin Makeli highlights an aspect of production

Leading the discussion