One-Day Course on Process Integration for Waste Minimisation and Production Carbon Footprint Reduction

CHEMICAL ENGINEERING TECHNICAL DIVISION

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THE Chemical Engineering Technical Division (CETD) organised a *One-Day Course on Process Integration for Waste Minimisation and Production Carbon Footprint Reduction* on 19 December 2011. This course was delivered by Ir. Prof. Dr Dominic Foo Chwan Yee from University of Nottingham, Malaysia Campus. Eight participants attended the course, most of whom are industrial practitioners.

There workshop was divided into seven sessions, with the first four dedicated to waste minimisation, while the remaining three sessions focused on production carbon footprint reduction. In the first session, the course tutor Ir. Prof. Dr Dominic Foo gave an introduction as well as the history of the development of process integration techniques. The technique was first developed for energy recovery back in the 1970s, and was then extended for waste minimisation and resource conservation initiatives in the 1990s. In recent years, the techniques have been extended for production planning and carbon footprint reduction. In Session 2, the tutor discussed several important data extraction principles and heuristic for waste minimisation. The most important heuristic being to segregate material sources for maximising recovery potential.

In Session 3, Ir. Prof. Dr Dominic Foo introduced graphical and algebraic targeting methods to set a realistic benchmark for a given material recovery problem. An industrial example on water recycling was used as an illustration. He then introduced the technique for designing a resource conservation network in Session 4.

After the lunch break, the tutor started Session 5 that focused on the reduction of production carbon footprint. He first explained to the participants how carbon footprint reduction could be incorporated into the production of goods before they are delivered to the consumers. In order to reduce carbon footprint to the desired benchmark, graphical tools may be utilised. The tutor then led the participants in analysing carbon footprint reduction for a phytochemical production case study in Session 6. Subsequently in Session 7, carbon footprint reduction for another industrial case study on a chlor-alkali production plant was discussed.

The workshop ended with the distribution of Certificates of Attendance to the participants. ■