

## Half Day Workshop on “How to Design Water Recovery Network for a Process Plant”

CHEMICAL ENGINEERING TECHNICAL DIVISION



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A technical talk entitled “How to Design Water Recovery Network for a Process Plant” was organised by the Chemical Engineering Technical Division (CETD) on 3 October 2009 at the C&S Lecture Room of Wisma IEM. The talk was conducted by Associate Professor Ir. Dr Dominic Foo, as a follow up on a technical talk on a similar topic delivered in August 2009. A total of 18 members attended the workshop.

The overall workshop was divided into four sessions where participants learnt different techniques for designing a maximum water recovery network. In Session 1, the speaker introduced to the participants the various domestic and industrial water-consuming processes. He then presented the water pinch analysis technique as the main tool to be learnt during the workshop.

The speaker then coached the participants in plotting a graphical targeting tool, *i.e.* material recovery pinch



diagram, to identify the maximum water recovery potential in a process plant. The technique identifies the minimum amount of fresh water needed as well as the minimum amount of wastewater that can be generated by the process prior to the detailed network design.

After a short tea break, the speaker resumed the workshop with Session 2, where he presented the water cascade analysis, an algebraic technique to determine the minimum flowrates. This was followed by Session 3, where a systematic procedure known as the nearest neighbour algorithm is used to design the water network that achieves the identified water targets.

The appropriate use of a water regeneration unit (*e.g.* filter, ion exchangers, *etc.*) is explained in the final session, before some industrial case studies were shown. The workshop concluded at 1.15 p.m. ■



Answer for 1Sudoku published on page 35  
of this issue.

4	7	3	9	2	1	5	6	8
6	1	5	8	3	4	2	9	7
8	9	2	6	5	7	3	4	1
3	6	7	4	9	5	1	8	2
2	8	9	3	1	6	7	5	4
5	4	1	7	8	2	9	3	6
1	3	8	2	4	9	6	7	5
9	5	6	1	7	8	4	2	3
7	2	4	5	6	3	8	1	9

### Circulating in Cyberspace...

#### Life Rewards Effort

Successful people aren't born that way. They become successful by establishing the habit of doing things unsuccessful people don't like to do. The successful people don't always like these things themselves; they just get on and do them.

**William M. Thackeray**