

TECHNICAL WORKSHOP

Shangri-La Hotel, Singapore

10-12 July 2017



Optimising a Dynamic Process

This three-day technical training workshop explores the progressive levels of cement manufacturing process optimisation. The course begins with raw materials and their preparation, moves on to fuels for firing a cement kiln and concludes with the ventilation of the exhaust gases from cement production process. An understanding of all these processes and how they interact is necessary to control and optimise the manufacturing process. This workshop aims to provide and enhance this understanding of the individual processes and their interaction.

Optimisation is a fundamental requirement for maximising the productivity and efficiency of the cement manufacturing process. It is a way to minimise manufacturing costs while maximising product quality and the profitability of a cement factory and company. This Cemtech technical training workshop will aim to explain how that can be achieved.

Outline Course Programme

Monday, 10 July 2017

Introduction & 1st Level of Optimisation: Raw materials

- The fundamental objectives of clinker and cement manufacture
- Best available technology
- Raw materials for cement manufacture
- Raw mix design
- Raw materials processing
- Chemistry and thermodynamics in the cement kiln

Tuesday, 11 July 2017

2nd Level of Optimisation: Fuels and combustion

- The dynamics of the cement kiln process
- Fundamentals of flames and combustion
- Fuel preparation – solid fuels, oil, natural gas

Fuels and combustion continued...

- Alternative fuel strategies
- Best practice alternative fuels utilisation
- Combustion air and oxygen requirements
- Exhaust gas volume

Wednesday, 12 July 2017

3rd Level of Optimisation: Emissions and the exhaust gas flow path

- Volatile cycles and their control, chloride, sulphur and heavy metals
- NO_x and SO₂ emissions and mitigation
- Exhausting the combustion and calcination product gases from the processes
- Drying in raw and coal mills
- Gas conditioning towers
- Venting in raw and coal mills
- Waste heat recovery

Training Format

The format of these technical training workshops will be a series of lectures provided by Dr Clark, interspersed with exercises to illustrate and practice the concepts discussed in the lectures. Open discussion forums will be encouraged following each lecture and exercise. The exercises will be largely Microsoft Excel based, therefore, participants should bring their laptop or arrange to complete the exercises jointly with another participant.

The workshops will be of interest to both the technical and managerial staff of cement companies. Guidance will be provided in the completion of the exercises which will be within the compass of all workshop participants.

Course Tutor Biography

Dr Michael Clark is a leading cement plant operations and technology specialist with over 40 years' experience in the cement industry. His skills cover the whole process of cement manufacturing from quarry planning, through clinker production, cement manufacture and distribution. He is regarded as the leading international expert in problem identification and efficiency improvements throughout the manufacturing process.

With a PhD in the manufacture of white cement, Dr Clark's career highlights include senior operational positions within Blue Circle Industries and ABB Linkman Systems Ltd, after which he founded Whitehopeman (UK), an international consultancy specialising in the cement industry. In addition, Dr Clark is Technical Consultant for International Cement Review and Moderator of the CemNet.com e-Learning suite of training courses.

Dr Clark has worked in over 30 countries around the world in Asia, Africa, Australia, the Americas, eastern Europe and the Middle East.

Venue and Accommodation

The training course will take place at the Shangri-La Hotel, Singapore. A specially-discounted room rate of S\$325++ will be available to those wishing to stay in the Shangri-La Hotel. For other hotel recommendations at different budget levels, please contact the organisers.



Registration Fee

- USD 1495 / EUR 1325 / GBP 1125 per participant
- **10% discount for groups of three or more**

Participants will be provided lunch and refreshments on each day of the training course.

FREE to participants: Technical Workshop Manual with Excel plant simulation models.
PLUS a complimentary copy of The Cement Plant Operations Handbook, 6th Edition, published by International Cement Review.

For programme details and workshop registration, visit:

www.Cemtech.com/Asia17/Workshop

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