



**ecra**

europaean cement research academy



# Programme 2005

*Seminars and Workshops*



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The Academy's new programme for 2005 will focus on several cement manufacturing, concrete and cement technology oriented issues. Six seminars and one workshop have been scheduled. Some seminars will be of specific interest for cement producers while others provide information which might be valuable also for cement associations. The workshop includes practical phases in which the participants will work in the laboratory or with specific training systems.

Some of the events will take place in the Research Institute in Düsseldorf. Experts with different technical and scientific background will provide most recent insights into their field of expertise and research findings. Starting with a welcome dinner for all participants the night before the events, the seminars as well as the workshop will offer sufficient opportunity for discussion and exchange of information among the participants in an open atmosphere.

Another part of the events will be held in close collaboration with European cement producers on site. Information on the whereabouts will be published soon.

After the successful conference held in Amsterdam last year, the next ecra conference is scheduled for 2006.

*Daniel Gauthier*  
Chairman of the Technical Advisory Board

*Martin Schneider*  
Managing Director ecra

new

## S05-01

### CO<sub>2</sub> Monitoring and Reporting Guidelines - Implementation in the Cement Industry

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**Objective:** *The participants shall get an overview on the technical aspects of the European CO<sub>2</sub> monitoring and reporting scheme*

**Target group:** *Engineers and environmental managers with a basic knowledge on the European CO<sub>2</sub> emissions trading scheme*

In January 2004 the European Commission has adopted guidelines referring to CO<sub>2</sub> monitoring and reporting within the EU CO<sub>2</sub> emissions trading scheme. As some of the described rules for the cement industry are technically not appropriate or would lead to excessively high costs, the cement companies have to propose a more suitable monitoring scheme to their local authorities. The participants shall get a comprehensive overview on the requirements of the CO<sub>2</sub> monitoring and reporting guidelines. The technical interpretation and implementation of these guidelines will be a crucial point of the seminar. A further focus will be on the technical options and measures which are appropriate and technically feasible (i. e. for sampling, analysis, determination of mass flows, calorific values, emission factors). Finally the seminar will give an outlook on future developments on CO<sub>2</sub> monitoring.

#### Presentations:

- Introduction to the European CO<sub>2</sub> monitoring and reporting scheme
- Technical aspects and specific requirements of the cement industry
- Determination of crucial parameters (mass flows, calorific values, emission factors)
- Determination of the biomass content
- Evaluation of monitoring concepts – examples from Europe
- Future developments in CO<sub>2</sub> monitoring

Venue: Düsseldorf (Germany)

new

## S05-02

### Burner Technology for Multi-Fuel Combustion

**Objective:** *Improved knowledge about burner technology and operation; special focus on multi-fuel/secondary fuel combustion*

**Target group:** *Process engineers, plant design engineers, combustion experts*

Burner technology has changed significantly during the last years due to the increased use of secondary fuels. Today cement kilns are often fired by multi-fuel mixes, including regular fossil and secondary fuels. This multi-fuel firing requires a new burner design, which has been implemented by the supplying industry. Apart from burner design, burner operation also has a significant impact on the burning process, the temperature profile in the kiln as well as the clinker quality. The seminar will give an overview over current burner technology and operation experiences.

The participants will have the opportunity to visit the Buzzi Robilante cement plant.

#### Presentations:

- Burner operation and flame characteristics – results of the Cemflame research project
- Impact of burner operation on cooling conditions and clinker quality
- Operation experiences with the Pillard burner using different types of waste fuels
- Secondary fuels – a question of burning and process technology
- Kiln burner concept for traditional and secondary fuels
- The Duroflex burner and fuel flexibility in kilns
- Experiences with the Greco burner at Robilante Plant
- Dynamic burner control with optical sensors

Venue: Robilante (Italy)

June 29, 2005



## S05-03 Continuous Emission Monitoring

**Objective:** *The participants shall get latest information on continuous measurement techniques in special consideration of new European guidelines*  
**Target group:** *Environmental and process engineers as well as technicians in measurement technology*

The seminar shall give a comprehensive overview on the state-of-the-art of continuous measurement techniques in the cement industry. One important aspect which will draw through all presentations are the new requirements on quality assurance of automated measuring systems. The new standard EN 14181 now applies all over Europe and will result in important changes concerning the calibration of continuous measuring devices as well as the corresponding operational activities and the computation of emission data. The seminar will take place at a German cement plant. Besides the courses, the participants will also have the opportunity for a plant visit.

### Presentations:

- Legal requirements on emission measurements in the cement industry
- Quality assurance of automated measuring systems: the new EN 14181 and its consequences
- State-of-the-art in continuous in situ measurement techniques
- Developments in extractive emission monitoring
- New requirements on data acquisition and data evaluation
- Future tasks of plant operators concerning EN 14181

Venue: A German cement plant

October 19-20, 2005



## S05-04 Modern Grinding Techniques

**Objective:** *Improved knowledge of grinding technology, possibilities to optimize existing grinding plants and impact of grinding technology on cement properties*  
**Target group:** *Process engineers, plant design engineers, grinding technology experts*

The seminar will give an overview on modern grinding technology for raw meal and cement. The latest developments of engineering suppliers and the operation results of these grinding facilities will be presented. In most cement plants sufficient grinding capacities already exist, so that one topic of the seminar will be dealing with the enhancement of the efficiency of an existing grinding plant. The cement properties are influenced by the comminution principle and the operation mode of the grinding plant. New research results about the impact of the grinding technology on the cement properties will be presented. The experiences with the grinding facilities at Lafarge Kujawy plant will be reported and the cement plant will be visited.

### Presentations:

- Grinding technology – overview and new research results
- Technical options for optimization of existing ball mills
- Experiences with the MPS-vertical roller mill for cement grinding at Holcim Merone plant
- LM 2 + 2 concept for cement grinding
- Raw meal and cement grinding with high-pressure grinding rolls and VSK-separator
- Quadropol-vertical roller mill for raw meal grinding
- Impact of the grinding system on cement properties
- Experiences with the installed grinding facilities at Lafarge Kujawy plant

Venue: Kujawy (Poland)

Seminars

## S05-05

### Pretreatment, Handling, Storage and Feeding of Waste Fuels

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**Objective:** *Comprehensive overview on all aspects of pretreatment, handling, storage and feeding of waste fuels*

**Target group:** *Environmental and process engineers with a basic knowledge about cement manufacturing and alternative materials*

The use of alternative materials is an issue of still growing concern for the European cement industry. Besides the burning behaviour of waste fuels, the suitable pretreatment, handling, storage and the feeding of waste fuels can be a real challenge for a plant operator. The seminar is targeted at giving a comprehensive overview on all these aspects. Furthermore the European legislation concerning the use of alternative materials in cement production will also be dealt with. In this context the participants will also get an update about the latest European activities on the standardisation of alternative fuels. The seminar will take place at the C.B.R. plant in Lixhe. The participants will have the opportunity for a plant visit.

#### Presentations:

- Legal requirements on the use of waste
- Suitable alternative fuels for cement production (requirements, characteristics, chemical and physical aspects)
- Pretreatment processes for alternative fuels
- Requirements on a safe and appropriate handling, storage and feeding
- Sampling and quality criteria for alternative fuels
- Future developments and prospects

Venue: Lixhe - Visé (Belgium)

## S05-06

### Cement and Admixtures

**Objective:** *Improved knowledge of interactions between cement and concrete admixtures*

**Target group:** *Sales, marketing and consulting engineers, R & D staff*

Participants will gain extended basic knowledge about interactions between cement and different concrete admixtures in particular concerning the hydration process, the workability and the formation of the pore structure. The different operative mechanisms and the influence of concrete admixtures on the properties of fresh and hardened concrete are presented in detail and supplemented by new results of research.

#### Presentations:

- Introductory general report: History, facts, application, effects
- Plasticizers and superplasticizers: Various active agents, composition (NS, MS, PCE) // Operative mechanism // Workability, rheology
- Air-entraining agents: Various active agents, composition // Operative mechanism // Influence (mixing energy, temperature, etc.) on concrete properties, testing procedure
- Retarders: Various active agents (sucrose, pyrophosphate, etc.) // Operative mechanism (hydration) // Influence on concrete properties
- Hydration inhibitors: Active agent (phosphonate) // Operative mechanism (hydration) // Influence on concrete properties // Recycling of fresh concrete
- Shrinkage reducing admixtures: Various active agents // Operative mechanism // Influence on mortar properties
- Chromate reducing agents: Various active agents // Operative mechanism // National and European regulations // Testing procedure

Venue: Düsseldorf or European pre-fab plant

## W05-01

### Clinker Microscopy

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**Objective:** *The understanding of the possibilities of clinker microscopy as a powerful tool for process and product evaluation and optimization*

**Target group:** *Staff of R & D and technical centres, process managers, quality managers*

Clinker microscopy is a classical and powerful tool for process and product evaluation. During the workshop the principles of clinker characterization from the sampling to the interpretation will be presented. As microscopy has its specific limits, supplementary methods will be proposed to obtain a complete image of the clinker's character.

On the first day, the participants are introduced to the latest know-how concerning sampling, preparation and microscopy of clinker. After a theoretical session, basic aspects of clinker morphologies are illustrated by practical work on prepared clinker samples. During the second day, examinations on clinker samples are focused on specific influences of the burning process on clinker properties, e.g. effects of secondary fuels or burning in a reducing atmosphere. In the practical parts, samples provided by the participants will be examined. Each participant is asked to send in a clinker sample that will be prepared for the workshop. The polished sections will be handed out after the workshop.

#### Presentations:

- Sampling, sample preparation, microscopy set-up
- Limits of optical microscopy / SEM, supplementary methods
- Microscopy of clinker samples
- Practical work on clinker samples

Venue: Düsseldorf (Germany)

Please copy this form, fill in and send/fax to ecra, Tannenstrasse 2, 40476 Düsseldorf, Germany  
 Phone: +49 (0)211 23 98 38-0 // Fax: + 49 (0)211 23 98 38-500 // info@ecra-online.org. You can also  
 register immediately via www.ecra-online.org.

**Registration fee:** The fee includes the teaching material, lunch, beverages during breaks and dinner the evening before the seminar/  
 workshop. **Payment:** Payment must be made after receipt of the invoice either by cheque, by bank transfer or by credit card (Euro-/  
 Mastercard, Visa) two weeks before the event takes place at the latest. Payment only in Euro. **Cancellation:** In case of cancellation of  
 participation to the seminars and workshops until 7 days before the date of the event 90 % of the fees will be refunded. After this date no  
 refund will be made. **Further information** on how to get to the venue of the event and on hotel accomodation will be sent to you together  
 with the invitation to the event. Please return this form no later than four weeks before the date of your chosen seminar or workshop.

**I (we) want to participate in the following seminar(s) / workshop in 2005:**

Seminar		Costs per participant*	
<b>S05-01</b>	CO <sub>2</sub> Monitoring and Reporting Guidelines Implementation in the Cement Industry	May, 19	EUR 1,200
<b>S05-02</b>	Burner Technology for Multi-Fuel Combustion	June, 15-16	EUR 1,200
<b>S05-03</b>	Continuous Emission Monitoring	June, 29	EUR 1,200
<b>S05-04</b>	Modern Grinding Techniques	October, 19-20	EUR 1,200
<b>S05-05</b>	Pretreatment, Handling, Storage and Feeding of Waste Fuels	November, 9-10	EUR 1,200
<b>S05-06</b>	Cement and Admixtures	November, 23	EUR 1,200

Workshop			
<b>W05-01</b>	Clinker Microscopy	June, 1-2	EUR 1,200

\* net price. Gross prices depend on the venue. They are subject to the tax laws of the respective country.  
 25 % discount for each additional participant

Seminar/ Workshop	Name and first name	E-mail
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Seminar/ Workshop	Name and first name	E-mail
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Seminar/ Workshop	Name and first name	E-mail
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Company or organization	Telephone
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Address	Fax
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Poste code - City - Country	E-mail
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Date	Signature
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### Seminar in Bernburg

The seminar which has found the greatest interest as yet was the one on Experiences with Precalciner Kilns which took place in Bernburg in close collaboration with Schwenk Zement KG. The good experience with this kind of seminar, the first held outside the premises of the Academy, were encouraging to plan most of this year's events in cooperation with several European cement companies.

### Conference in Amsterdam

Last year's highlight was without doubt the First International Conference on Innovation and Future Developments in Cement Production and Concrete Construction which was held in Amsterdam on November 12. Subjects of a wide range - from the European cement industry's saving natural resources to underground transport routes - were covered. A considerable number of participants showed great interest in a repetition of the conference every year or at least every two years.



## The Research Institute

A part of the seminars and workshops will take place in the Research Institute of the Cement Industry in Düsseldorf. The Institute is a renowned and internationally recognised establishment which covers all aspects of cement from limestone to high quality concrete.

The Institute provides excellent meeting and conference equipment for the seminars. The workshops take advantage of the laboratories and teaching facilities in the same building.

The research atmosphere and the perfect setting for meetings in the Institute create a good forum for an open discussion and a fruitful exchange of information.







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