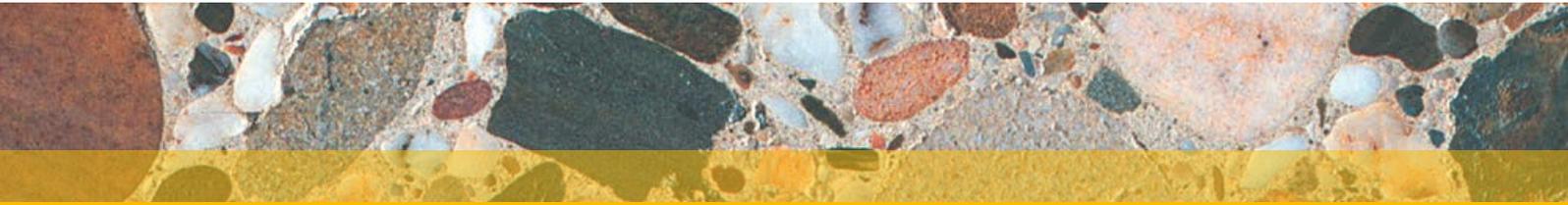




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european cement research academy

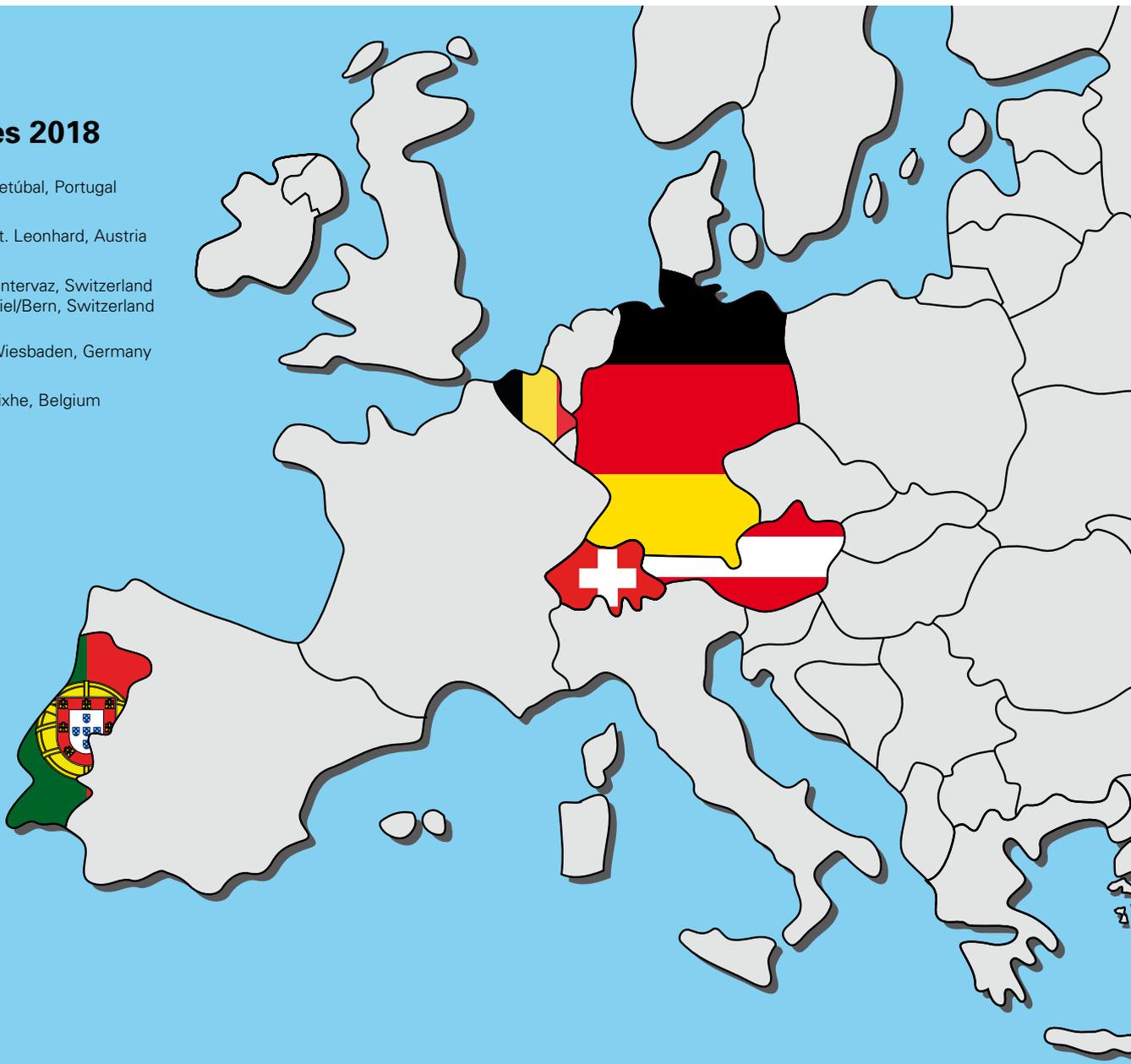


PROGRAMME 2018

Seminars

Venues 2018

-  Setúbal, Portugal
-  St. Leonhard, Austria
-  Untervaz, Switzerland
Biel/Bern, Switzerland
-  Wiesbaden, Germany
-  Lixhe, Belgium



4 Seminars

7 Terms & Conditions

European Cement Research Academy

Welcome to ECRA's seminar programme for 2018.

This year we are offering seminars on the following subjects:

- Use of Alternative Fuels and Raw Materials in the European Cement Industry
- Modern Clinker Cooler Technology
- Energy Efficiency and Waste Heat Recovery
- Cement and Admixtures
- Cement Grinding Technology
- Analysis and Evaluation of Clinker and Cement Properties

With expert speakers and the right mix of theory and practice, each seminar aims to bring you the latest technological and scientific developments in the field of cement and concrete and includes a half-day visit to a cement plant. There is also ample time to meet and exchange experiences with colleagues from several different countries. This year's seminar venues are in Austria, Belgium, Germany, Portugal and Switzerland.

We look forward to welcoming you!

For more information and to register, please visit www.ecra-online.org.

Daniel Gauthier
Chairman of the Technical Advisory Board

Martin Schneider
Managing Director

12–13 June 2018

S18-01 Use of Alternative Fuels and Raw Materials in the European Cement Industry

Objective: *An overview of the current situation regarding the use of alternative fuels and raw materials in the European cement industry.*

Target group: *Experienced process engineers and waste managers*

The use of alternative materials remains an ongoing issue for the European cement industry. Starting with the main political drivers such as the circular economy strategy or the European plastics strategy, the seminar will give a comprehensive overview of the current situation with regard to the use of alternative fuels and raw materials in the EU. In this context, sophisticated pre-treatment and also suitable quality surveillance for alternative materials play a decisive role. Moreover, other drivers and barriers currently exist which could promote or constrain the use of alternative materials. The impact of using alternative fuels and raw materials on specific CO₂ emissions of a cement kiln will also be discussed, together with health and safety issues in the context of using alternative materials, which are of growing importance. Political aspects and technical feasibilities will also be presented. The seminar includes a visit to the Secil Outao plant in Setúbal, Portugal.

Topics:

- Current legal and political situation
- Examples of new projects
- Current experience and future prospects for the use of alternative fuels and raw materials
- Health and safety aspects regarding the use of alternative materials
- Current and future drivers and barriers for using alternative fuels and raw materials

Venue: Setúbal, Portugal
Nearest airport: Lisbon

27–28 June 2018

S18-02 Modern Clinker Cooler Technology

Objective: *Overview of the newest developments in clinker cooler technology and operational experiences from the past years.*

Target group: *Plant managers, production managers, process engineers, plant design engineers*

The recovery of heat from burnt cement clinker has a decisive influence on the total energy consumption of the clinker burning process. Progress in clinker cooling technology in the past years has led to a substantial improvement in the thermal efficiency and availability of the kiln plants. The composition and properties of the clinker are crucially affected by cooling conditions. This seminar will give an overview of modern clinker cooling systems. Operational experiences with the latest developments will also be presented. The seminar includes a visit to the Leube plant in St. Leonhard, Austria.

Topics:

- Importance of clinker cooler operation on the energy efficiency of the clinker burning process
- Influence of burning and cooling conditions on clinker quality
- Presentations from several clinker cooler manufacturers

Venue: St. Leonhard, Austria
Nearest airports: Salzburg

4–5 September 2018

S18-03 Energy Efficiency and Waste Heat Recovery

Objective: To present innovative measures for waste heat recovery techniques combined with CO₂ reduction.

Target group: Plant managers, development process and kiln engineers

Today, the process-related potential to reduce energy consumption is widely exhausted. Plants are usually designed to utilise heat from the burning process to dry raw materials and in many cases coal in integrated grind-drying processes forming an essential part of the production process. However, techniques for further waste heat recovery are becoming increasingly important for an extended use of the fuel energy. Alternative fuels can be dried in drying/grind-drying installations and environmentally-friendly power can be generated by using the available waste heat from cement plants without additional use of fuels and greenhouse gas emissions, – provided the process parameters allow this. The seminar will present applicable options and potentials for energy efficient and CO₂-friendly techniques such as waste heat recovery within the cement industry. The assessment of energy efficiency of the burning and grinding processes will also be addressed. The seminar includes a visit to the Holcim (Schweiz) plant in Untervaz, Switzerland.

Topics:

- The cement industry's energy efficiency: Political and legal context in the EU/EEC
- Experience with WHR for electricity generation in a cement plant – ORC Process
- Experience with WHR for electricity generation in a cement plant – Conventional steam process
- Drying of alternative fuels with a flash dryer
- VDZ energy reviews and outcome
- Integration of a new sewage sludge dryer recovering process heat
- Process-integrated milling and drying of alternative fuels in a rocket mill
- Recovering waste heat from the clinker burning process for a district heating network

Venue: Untervaz, Switzerland
Nearest airport: Zurich

23–24 October 2018

S18-04 Cement and Admixtures

Objective: An overview of interactions between cement and concrete admixtures incl. cement additives such as grinding aids.

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

In order to enhance the performance of fresh and hardened concrete and avoid negative effects on quality, a detailed understanding of interactions between concrete admixtures and cement is necessary. Comprehensive knowledge is particularly needed in the case of using cements blended with e.g. blastfurnace slag, limestone, fly ash or calcined clay. The seminar will give an overview of the wide range of common and new concrete admixtures. Participants will gain extended basic knowledge about the interactions between concrete admixtures and Portland cement as well as blended cements. In particular, the influences of temperature on cement-superplasticizer-interactions will be discussed. Cement additives such as grinding aids and performance enhancers are further elements of the seminar. New results of research activities on the different working mechanisms and the influence of concrete admixtures and cement additives on hydration and other properties of fresh and hardened concrete will also be presented. The seminar includes a visit to the CEMEX Research Group in Brügg b. Biel.

Topics:

- Introductory general report: History, facts, application, effects
- Plasticizers and superplasticizers
- Air-entraining agents
- Retarders and hydration inhibitors
- Accelerators
- Shrinkage-reducing admixtures
- Chromate-reducing admixtures
- Grinding aids and cement performance enhancers

Venue: Biel/Bern, Switzerland
Nearest airport: Zurich

6–7 November 2018

S18-05 Cement Grinding Technology

Objective: *An overview of state-of-the-art grinding equipment and latest developments in comminution technology.*

Target group: *Process engineers with experience in cement manufacturing, R&D engineers*

The energy consumption arising from the grinding of raw material and cement has been successfully reduced in the cement industry over many years, but increasing cement fineness and the diversity of the product portfolio have made further reductions a challenging task. Today there are various different grinding technologies in use. Some of these are well known and others have just been introduced to the cement industry, but conventional mills are also constantly under development by suppliers. New drive concepts, better materials and geometries for wear elements, a deeper understanding of material and gas flows and new concepts for measurements, data acquisition and process control are changing the ways grinding systems are designed and operated. In this context the seminar will give an overview of the existing and upcoming cement grinding technologies and their impact on cement grinding today and tomorrow. The seminar includes a visit to the CBR Lixhe plant of HeidelbergCement.

Topics:

- State of the art in cement grinding
- Future grinding technologies
- Cement and raw material grinding in various grinding systems
- Latest developments in comminution and classification technology
- Impact on product properties

Venue: Lixhe, Belgium
Nearest airport: Brussels

27–28 November 2018

S18-06 Analysis and Evaluation of Clinker and Cement Properties

Objective: *An overview of clinker properties, analytical methods and their influences on cement performance.*

Target group: *Process engineers, quality managers, laboratory staff*

Clinker is the main cement constituent with key importance for the performance of any type of cement. The properties of clinker are determined by its chemical composition, but even more by its mineralogical phases and their constitution. Knowledge of clinker properties and their relation to process parameters is essential for the production and quality control of cement. The seminar will give an overview of the current understanding of how process conditions control clinker characteristics, and will also focus on possible effects on cement properties and on appropriate methods to analyse clinker and cement. The seminar includes a visit to the Dyckerhoff GmbH Amöneburg cement plant in Wiesbaden, Germany.

Topics:

- Clinker properties and cement performance
- Clinker microscopy as a powerful tool for process and product evaluation
- Ono's method: Applicability in modern cement production
- Quantitative analysis of clinker, cement and hydrating systems
- The impact of burning and cooling conditions on clinker performance
- Automated quality control of clinker and cement

Venue: Wiesbaden, Germany
Nearest airports: Frankfurt

Save the date: ECRA/CEMCAP/CLEANER Workshop, 17 Oct. 2018

On 17 October 2018 ECRA, CEMCAP and CLEANER will hold a joint workshop in Brussels to discuss the technological and economic framework for the application of carbon capture technologies in the cement industry.

CEMCAP is a project funded by the EU's Horizon 2020 programme addressing CO₂ capture from cement production through the demonstration of different CO₂ capture technologies in an industrially relevant environment (TRL 6) based on the previous work of ECRA and Norcem. ECRA is involved as an industrial advisory group to give guidance to the CEMCAP research consortium and communicate the results within the European cement industry. CEMCAP started in 2015 and will finalize its work in October 2018. The conclusions from CEMCAP's experiments and research will be highlighted in the workshop. CLEANER is a project that started 2017, also funded by EU's Horizon 2020 program. It addresses CO₂ capture from cement production by demonstrating calcium looping (CaL) technology in the cement plant (TRL 7). Further presentations will encompass options for direct separation capture technology and carbon capture and storage/utilization (CCS, CCU). Participation is free.

More details and instructions on how to register will be available in due course on the following websites: www.ecra-online.org, www.sintef.no/cemcap, www.cleanker.eu

Terms & Conditions

Registration

Registrations can only be made online via the ECRA website www.ecra-online.org. All current registration deadlines are shown on the website. Participants will receive written confirmation of their registration.

Participation fee

Unless stated otherwise, the participation fee per person for each seminar/workshop is 1,350 EUR for participants from ECRA member companies/organisations.

There is a discount of 25% for each additional participant from the same company address.

Cement associations which are ECRA members may delegate one participant to each seminar/workshop free of charge.

Participants from companies or organisations which are not ECRA members will be charged double.

The participation fee includes lectures, handouts, refreshments, lunch, evening dinner and, where necessary and possible, group bus transfers to and from the nearest airport to the venue.

VAT application:

Invoices issued to recipients in Germany: The standard German rate of VAT, currently 19%, will be applied.

Invoices issued to recipients in other EU countries: VAT will not be applied if the recipient provides a valid VAT registration number (reverse charge rule according to Art. 196, 205 EU-Directive 2006/112).

Invoices issued to recipients in non-EU countries: VAT will not be applied. A certificate of tax residence is required.

The above-mentioned VAT application rules apply only to the participation in ECRA seminars, workshops and training courses.

Hotel accommodation

Hotel accommodation is not included in the participation fee. ECRA will provide hotel recommendations, but participants must book their accommodation with the hotel directly themselves. In the event of the cancellation of a room reservation the terms and conditions of the hotel apply.

Payment

Participants will receive an invoice which is payable immediately upon receipt by bank transfer. Payment will be accepted in Euros only.

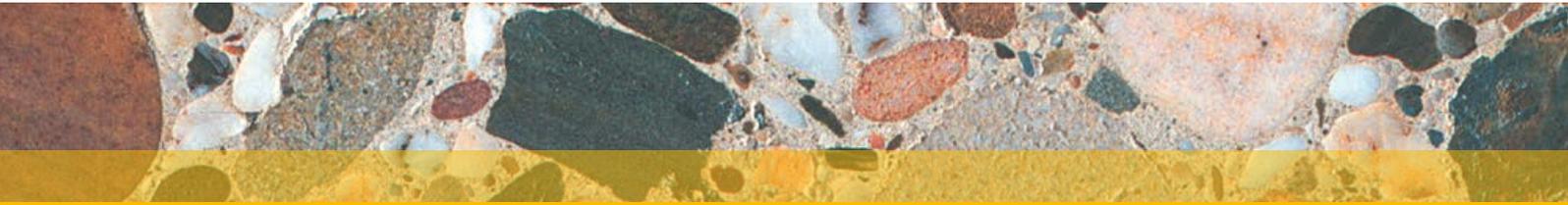
Cancellations

Participation fees will be refunded for cancellations made in writing up to seven days before a seminar/workshop takes place. No refund will be made for cancellations received after this date.

ECRA reserves the right to change the content of its seminars and workshops and to cancel these in the case of insufficient bookings or other circumstances beyond its control. In the case of cancellation by ECRA, participants are entitled to a full refund of their participation fee. ECRA is not responsible for any other loss incurred by a participant resulting from the cancellation or alteration of a seminar/workshop by ECRA.

These terms and conditions are governed by German law.

Duesseldorf, March 2018



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