

Inorganic hydrates such as calcium-silicate-hydrate, abbreviated C-S-H, are “wonder” materials exceedingly rich in terms of potential applications that can be produced in almost any shape or form, cheaply and in large quantities right across the world from local and sustainable resources. C-S-H is the “glue” of cement, itself the glue of concrete, material with enormous economic impact. But C-S-H and other hydrates are also used as a filler in paper and in polymer composites, as dental filling materials, for waste water treatment in fertilizers and as insulation and encasement materials including for nuclear waste.

C-S-H is the main phase controlling the performance of cement-based materials. These materials are so widely used that their production is the leading industrial source of greenhouse gases, contributing about 8% of global CO₂ emissions despite very low emissions per kg. Engineering C-S-H growth for faster strength development and for improved performance, such as water transport that affects C-S-H durability, is key to further lowering the CO₂ impact of construction.

About ERICA

ERICA, a project funded by the European Union under the Horizon 2020 – Marie Skłodowska-Curie – Innovative Training Network programme, is an innovative, five-nation project straddling materials science and engineering, physics and chemistry in diverse areas of experimentation and computational modelling.

The overarching aim of the ERICA project is to understand how to engineer hydrates at the nanoscale and to enable improved engineering applications.

About CASH II

Another way to reduce CO₂ emissions is to partially replace Portland cement by Supplementary Cementitious Materials (SCMs) such as blast furnace slag, fly ash, silica fume or calcined clays. However, these SCMs cause changes in C-S-H composition.

CASH II is a Swiss-Danish research project investigating the effect of aluminum, potassium and sodium on the structure and solubility of C-S-H, using innovative experimental methods and computational modelling.

PRELIMINARY PROGRAMME OF THE CONFERENCE

	Sunday 24 January 2021	Monday 25 January 2021	Tuesday 26 January 2021	Wednesday 27 January 2021
Morning		Session Nucleation and growth of C-S-H: Nanoengineering of cementitious materials	Session Transport of water and small ion through agglomerates of hydrates	Session Thermodynamics of Calcium-Aluminate-Silicate-Hydrates
Afternoon		Session Nanoscale phenomena during the first and subsequent sorption cycles	Session Upscaling for applications: multiscale modeling and lab-to-market transition	Conference ends after lunch
Late Afternoon	Registration		Visit of old town of Heidelberg	
Evening	Dinner at NH Hotel	Dinner at Level12 (PMA)	Conference Dinner at the University of Heidelberg	

About the conference

The ERICA - CASH II final conference will be held from January 24 to January 27, 2021, in Heidelberg (Print Media Academy), Germany.

At this event, the ERICA and CASH II projects will be presented along with invited and contributed talks.

Five thematic sessions

1. Nucleation and growth of C-S-H: Nanoengineering of cementitious materials
2. Nanoscale phenomena during the first and subsequent sorption cycles
3. Transport of water and small ion through agglomerates of hydrates
4. Upscaling for applications: multiscale modeling and lab-to-market transition
5. Thermodynamics of Calcium-Aluminate-Silicate-Hydrates

Invited speakers

Jürgen Adolphs (Porotec GmbH, Germany)
 Natalia Alderete (Ghent University, Belgium)
 Jean-François Barthélémy (CEREMA, France)
 Jean-François Dufrière (Université de Montpellier, France)
 Christopher Hall (University of Edinburgh, UK)
 Leo Pel (Eindhoven University of Technology, Netherlands)
 Ippei Maruyama (Nagoya University, Japan)
 Aslam Kunhi Mohamed (ETH Zurich, Switzerland)
 Matthieu Vandamme (Ecole des Ponts - ParisTech, France)
 Colin Walker (Japan Atomic Energy Agency, Japan)
 Mateusz Wyrzykowski (Empa, Switzerland)

Call for abstracts

If you are interested in giving an oral or poster presentation, please submit an abstract no shorter than 100 and not longer than 150 words online at www.eric-etn.eu/eric-cash2-final-conference/.

The abstract should present a concise statement of the scope, principal findings, and conclusions of the presentation.

After acceptance of your abstract, you will be asked to submit a two-page abstract according to template provided.

Important dates

Abstracts

Submission of 150 words abstracts	June 30, 2020
Notification of acceptance	July 20, 2020
Submission of two-page abstract	Oct 31, 2020

Registration

Early registration deadline	Aug 31, 2020
Registration deadline presenters	Oct 31, 2020
Conference dates	Jan 24-27, 2021

Scientific committee

Mohsen Ben Haha (HeidelbergCement, Germany)
Villiam Bortolotti (University of Bologna, Italy)
Paul Bowen (EPFL, Switzerland)
Paola Fantazzini (University of Bologna, Italy)
David Faux (University of Surrey, UK)
Christian Hellmich (Technische Universität Wien, Austria)
Barbara Lothenbach (Empa, Switzerland)
Peter McDonald (University of Surrey, UK)
Bernhard Pichler (Technische Universität Wien, Austria)
Karen Scrivener (EPFL, Switzerland)

Practical information

Venue

The conference will be held at PMA (Print Media Academy).
Website : www.pma-heidelberg.com/kopie-von-pma

Accommodation

The organizers have made pre-reservations at the following hotels for the period January 24-27, 2021.

- Holiday Inn Express (www.hiexpress.de)
- NH Hotel Heidelberg (www.nh-hotels.com)
- Qube Hotel Heidelberg (qube-hotel-heidelberg.de)

Participants are kindly requested to make their hotel reservations directly with the hotel of their choice. Further information on the hotels, rates and reservation modalities can be found on the conference webpage www.eric-etn.eu/eric-cash2-final-conference/.

Registration and registration fees

Participants are kindly requested to register on line at www.eric-etn.eu/eric-cash2-final-conference/

Registration fees

Up to August 31st, 2020	
Early bird registration fee	590 €
After August 31st, 2020	
Regular registration fee	650 €

Registration fee includes:

- Sunday, Monday and Tuesday Dinner;
- Monday, Tuesday and Wednesday coffee breaks, lunch and Conference room rental;
- Sightseeing tour of Heidelberg Tuesday evening.

Cancellation policy

Please visit the website of the conference for cancellation policy.

Management of the Conference

Martina Pöll (TU Wien, Austria)
Ute Klötzer (HTC, Germany)
Marie-Alix Dalang-Secretan (EPFL, Switzerland)

Further information

If you need further information, please write an e-mail to info@eric-etn.eu or visit www.eric-etn.eu/eric-cash2-final-conference/



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ERICA-CASH II Final Conference

January 24-27, 2021

Print Media Academy (PMA)
Heidelberg, Germany



www.eric-etn.eu/eric-cash2-final-conference/

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