

**CALCIUM ALUMINATES 2022**  
**18 – 20 July 2022**  
*Hinxton Hall, Cambridge, England*

**Sunday, 17 July**

Delegates will be able to collect their registration packs from the conference desk from 11am and the desk will be open throughout the conference.

**Monday, 18 July**

9.00 – 9:20	<i>Charles FENTIMAN &amp; Karen SCRIVENER</i> Welcome and introduction to the Conference
<b>SESSION 1 – CALCIUM ALUMINATE TYPES AND MANUFACTURE</b> Chair: Raman MANGABHAI	
9:20 – 9:40	<b>Characterization of different types of Bauxite, their effect on calcium aluminate cement phase quantity and investigation of refractory properties</b> <i>Presented by <u>Berrak AVCIOĞLU</u>, R&amp;D and Process Technologies Manager, and Metehan SEVEROĞLU</i> Çimsa Çimento San. Tic. A.Ş (ÇİMSA CEMENT), Toroslar Mah. Tekke Cad. Yenitaşkent-Akdeniz Mersin 33013, Turkey
9:40 – 10:00	<b>Investigation of the effect of fuel types on Gehlenite and Mayenite phases and performance of Calcium Aluminate Cements</b> <i>Presented by <u>Sezin ARIKAN KANSAY</u>, Operation Manager, for Metehan SEVEROĞLU and Berrak AVCIOĞLU</i> Çimsa Çimento San. Tic. A.Ş (ÇİMSA CEMENT), Toroslar Mah. Tekke Cad. Yenitaşkent-Akdeniz Mersin 33013, Turkey
10:00 – 10:20	<b>An investigation of the chemical distribution of minor elements in high alumina cements by a multidisciplinary approach</b> <i>Marco CANTALUPPI, <u>Fiorenza CELLA</u>, Wojciech KAGAN, Nicoletta MARINONI and Fernando CÁMARA</i> Earth Science Department “Ardito Desio”, University of Milan, 20133, Milan, Italy; MAPEI S.p.A., R&D Central Laboratory, Milan, Italy; Gørka Cement SP. Z. O. O., Lipcowa 58, 32540, Trezbinia, Poland
10:20 – 10:25	Discussion
10:25 – 11:00	Coffee
<b>SESSION 2 – HYDRATION AND METHODS OF ANALYSIS</b> Chair: Prof. Friedlinde GOETZ-NEUNHOEFFER	
11:00 – 11:20	<b>New advances in dynamic EIS (DEIS) methods for the understanding of the calcium aluminate cement hydration mechanisms</b> <i><u>Dominika MADEJ</u></i> AGH University of Science and Technology, Faculty of Materials Science and Ceramics, 30-059 Krakow, Poland
11:20 – 11:40	<b>Hydration of CAC-based binders: Population balance equations for kinetic modelling</b> <i><u>Nicolas MAACH</u>, Jean-François GEORGIN, Judith POMMAY and Stéphane BERGER</i> GEOMAS Laboratory, INSA Lyon, 69621 Villeurbanne, France; Imerys Technology Center, 38090 Vaulx-Milieu, France
11:40 – 12:00	<b>CSA clinker hydration and alkali effect</b> <i><u>Lucía J FERNÁNDEZ-CARRASCO</u>, David TORRENS-MARTÍN, Pilar PADILLA-ENCINAS, Ana FERNÁNDEZ-JIMENEZ, Ángel PALOMA.</i> Department of Civil and Environmental Engineering, Universitat Politècnica de Catalunya – Barcelona TECH Instituto de ciencias de la Construcción Eduardo Torroja, Departamento de Síntesis y reciclado de materiales, CSIC - Madrid
12:05 – 12:10	Discussion
12:10 – 13:30	Lunch

**SESSION 3 - HYDRATION AND METHODS OF ANALYSIS**

Chair: Prof. Karen SCRIVENER

13:30 – 13:50	<b>Influence of C<sub>12</sub>A<sub>7</sub> addition on the early hydration of calcium aluminate cement at different temperatures</b> <b><u>Andreas KOEHLER</u></b> , Juergen NEUBAUER and Friedlind GOETZ-NEUNHOEFFER Friedrich-Alexander-University Erlangen-Nürnberg (FAU), GeoZentrum Nordbayern, Mineralogy, Erlangen, Germany
13:50 – 14:10	<b>Influence of relative humidity exposure on the microstructure of hardened CAC paste</b> <b><u>Sandra WAIDA</u></b> , Mirco WAHAB and Thomas A. BIER Institute for Ceramics, Refractories and Composite Materials, TU Bergakademie Freiberg, 09596 Freiberg, Germany
14:10 – 14:30	<b>Electric resistivity testing method to assess conversion in calcium aluminate cement concrete</b> <b><u>Marwa M. KORAYEM</u></b> , Aaron J. STRAND, Matthew P. ADAMS and Anthony BENTIVEGNA John A. Reif, Jr. Department of Civil and Environmental Engineering, New Jersey Institute of Technology, Newark, NJ, USA; Jensen Hughes, Baltimore, MD, USA
14:30 – 14:50	<b>Decoupling the effect of hydrate mineralogy and porosity resulting from conversion on calcium aluminate cement corrosion resistance</b> <i>W. LIU, A. W. H. CHEUNG and <u>Marjorie VALIX</u></i> The University of Sydney, Sydney, NSW, Australia
14:50 – 14:55	Discussion
14:55 – 15:20	Coffee
<b>SESSION 4 – USES AS ACCELERATORS FOR PORTLAND CEMENTS</b>	
Chair: Dr Charles FENTIMAN	
15:20 – 15:40	<b>Ettringite accelerator in Portland cement dominated systems: A comparison of different calcium aluminate technologies</b> <b><u>Stéphane BERGER</u></b> , D. TOURLAKIS and Sébastien PERROT Imerys Technology Center, 38090 Vaulx-Milieux, France
15:40 – 16:00	<b>Amorphous flash calcined alumina, effect on shrinkage and set of Portland cement</b> <b><u>Ludo C. VAN NES BLESSING</u></b> CALTRA Nederland BV., 3640 AH Mijdrecht, The Netherlands.
16:20 – 16:40	<b>Blended calcium aluminate cements for digital fabrication with concrete</b> <b><u>Arnesh DAS</u></b> , Lex REITER, Sara MANTELLATO and Robert FLATT Institute of Building Materials, ETH Zurich, Switzerland
16:40 – 16:45	Discussion
17:30 – 20:00	Walking Tour of Cambridge

Tuesday, 19<sup>th</sup> July

<b>SESSION 5 – ADMIXTURES FOR CAC</b>	
Chair: Prof. Dominika MADEJ	
9.00 – 9:20	<p><b>Accelerating calcium aluminate cements with lithium salt: New insights on the hydration mechanism and on the properties</b>  <u>Camille NALET</u>, Nicolas MAACH, Eric CHARPENTIER, Stéphane BERGER and Hervé FRYDA            Imerys Technology Center, 38090 Vaulx-Milieux, France</p>
9:20 – 9:40	<p><b>Specific biopolymers as accelerator for alumina cement</b>            Alexander ENGBERT and <u>Johann PLANK</u>            Chair for Construction Chemistry, Technische Universität München, 85747 Garching, Germany</p>
9:40 – 10:00	<p><b>The effect of temperature on the formation of the structure of hydrated calcium aluminate cement with microsilica</b>            Valentin ANTONOVIĆ, <u>Renata BORIS</u>, Rimvydas STONYS and Jurgita MALAIŠLIENĖ            Laboratory of Composite Materials, Institute of Building Materials, Vilnius Gediminas Technical University, Vilnius 08217, Lithuania</p>
10:00 – 10:05	Discussion
10:05 – 10:40	Coffee
<b>SESSION 6 – HYDRATION AND DURABILITY OF BINARY SYSTEMS</b>	
Chair: Prof. Mike THOMAS	
10:40 – 11:00	<p><b>Aggregate impacts on chemistry, conversion, and strength in calcium aluminate cement concrete systems</b>  <u>Matthew P. ADAMS</u>, Marwa M. KORAYEM and Jason H. IDEKER            John A. Reif, Jr. Department of Civil and Environmental Engineering, New Jersey Institute of Technology, Newark, NJ, USA; School of Civil and Construction Engineering, Oregon State University, Corvallis, OR, USA</p>
11:00 – 11:20	<p><b>Impacts of conversion on drying shrinkage of calcium aluminate cement using finely ground limestone</b>            Marwa M. KORAYEM and <u>Matthew P. ADAMS</u>            John A. Reif, Jr. Department of Civil and Environmental Engineering, New Jersey Institute of Technology, Newark, NJ, USA</p>
11:20 – 11:40	<p><b>In-situ QXRD study of the temperature dependent early hydration of CAC in mix with calcite</b>  <u>Julian GOERGENS</u> and Friedlinde GOETZ-NEUNHOEFFER            Friedrich-Alexander-University Erlangen-Nürnberg (FAU), GeoZentrum Nordbayern, Mineralogy, Erlangen, Germany</p>
11:40 – 12:00	<p><b>Development of new innovative project ECO<sub>2</sub>Flex</b>  <u>Alma-Dina BAŠIĆ</u>, <u>Josipa SKOČIBUŠIĆ PEJIĆ</u>, Ana BEŠKER, Florian HARTMANN            Faculty of Civil Engineering, Zagreb, Croatia; Calucem</p>
12:00 – 12:05	Discussion
12:05 – 13:00	Lunch

## SESSION 7 – TERNARY BINDERS

Chair: Prof. Lucía J FERNÁNDEZ-CARRASCO

13:00 – 13:50	<p><b>Influence of sulphate source on hydration and phase formation in ternary binders</b>  <i>Elsa QOKU and <u>Thomas A. BIER</u></i>                      Institute for Ceramics, Refractories and Composite Materials, TU Bergakademie Freiberg, 09596 Freiberg, Germany</p> <p><b>Early shrinkage mechanisms in self-flowing mortars using ternary binders</b>  <i>Adrian BAJRAMI and <u>Thomas A. BIER</u></i>                      Institute for Ceramics, Refractories and Composite Materials, TU Bergakademie Freiberg, 09596 Freiberg, Germany</p> <p><b>Multi-response optimization on ternary binder systems using Taguchi design of experiments and Principal Component Analysis (PCA)</b>  <i>Anxhelina QORLLARI and <u>Thomas A. BIER</u></i>                      Institute for Ceramics, Refractories and Composite Materials, TU Bergakademie Freiberg, 09596 Freiberg, Germany</p>
13:50 – 14:10	<p><b>Impact of calcium sulfate combination on performance and phase evolution in self-levelling compound</b>  <i><u>Ingrid MIKANOVIC</u>, Ronnie KADEN, Arno REIL, Markus SCHMID, Gunther WALENTA and Dubravka MARETIC</i>                      CALUCEM GmbH, 68219 Mannheim, Germany; CALUCEM d.o.o, 52100 Pula, Croatia</p>
14:10 – 14:30	<p><b>Towards understanding the ageing behaviour of SLU formulations: Impact of prehydration on individual components and the role of admixtures</b>  <i><u>Florian A. HARTMANN</u>, Alexander ENGBERT and Johann PLANK</i>                      Chair for Construction Chemistry, Technische Universität München, 85747 Garching, Germany</p>
14:30 – 14:50	<p><b>Investigation of CAC - PC - CŠ in a ternary system and determination of ratio of CAC cement to PC</b>  <i>Presented by <u>Melike SUCU</u>, Sales Manager, for A. B. ÖZTÜRK, Ayten ÇAPUTÇU, Metehan SEVEROĞLU and Berrak AVCIOĞLU</i>                      Çimsa Çimento San. Tic. A.Ş (ÇİMSA CEMENT), Toroslar Mah. Tekke Cad. Yenitaşkent-Akdeniz Mersin 33013, Turkey</p>
14:50 – 15:10	<p><b>Dimensional stability of CSA-based binders for flow-applied screeds</b>  <i><u>Federica BERTOLA</u>, Livio CAPELLI and Fulvio CANONICO</i>                      Buzzi Unicem, 13039 Casale Monferrato, Italy</p>
15:10 – 15:15	Discussion
15:15 – 15:45	Coffee
<h2 style="margin: 0;">SESSION 8 – FURTHER ETTRINGITE SYSTEMS</h2> <p style="text-align: center;">Chair: Prof. Johann PLANK</p>	
15:45 – 16:05	<p><b>Influence of calcined clay on the hydration of ternary binders based on calcium aluminate cement, calcium sulfate and Portland cement</b>  <i>Sarra EL HOUSSEINI, <u>Karen SCRIVENER</u> and Barbara LOTHENBACH</i>                      Laboratory of Construction Materials, Ecole Polytechnique Fédérale de Lausanne, 1015 Lausanne, Switzerland;                      Laboratory Concrete/Construction Chemistry Empa, Uberlandstr.129, CH-8600 Dubendorf, Switzerland</p>
16:05 – 16:25	<p><b>Use of high ettringite producing ternary blend systems for thermochemical energy storage</b>  <i><u>Aaron J. STRAND</u> and Matthew P. ADAMS</i>                      John A. Reif, Jr. Department of Civil and Environmental Engineering, New Jersey Institute of Technology, Newark, NJ, USA</p>
16:25 – 16:45	<p><b>Stability of ettringite in blended systems with CAC-PC-CŠ</b>  <i><u>Jason A. IDEKER</u>, Anika T. SARKAR, J. A. SMITH and Lamiya NOOR</i>                      School of Civil &amp; Construction Engineering, Oregon State University, Corvallis, Oregon 97331, USA; Department of Civil and Environmental Engineering University of Tennessee, Knoxville, TN 37996, USA</p>
	<p><b>Performance of rapid-repair (ettringite-based) concrete in a harsh marine environment</b>  <i>Edward (Ted) G. MOFFATT, <u>Mike D. A. THOMAS</u>, Racheal LUTE, Thanos DRIMALAS and Kevin FOLLIARD</i>                      Royal Military College of Canada, Kingston, Ontario, Canada; University of New Brunswick, Fredericton, New Brunswick, Canada; Katterra, Austin, Texas, USA; University of Texas at Austin, Austin, Texas, USA</p>
17:05 – 17:10	Discussion
19:30 - Late	Gala Dinner

## Wednesday, 20<sup>th</sup> July

<b>SESSION 9 – DURABILITY IN BIOGENIC CONDITIONS</b>	
Chair: Prof. Jason IDEKER	
9:00 – 9:20	<p><b>Towards a better understanding of biodegradation mechanisms of calcium aluminate based materials in sewer conditions</b>  <u>Amr ABOULELA</u>, Cédric PATAPY, Alexandra BERTRON, Amaury BUVIGNIER and Matthieu PEYRE LAVIGNE            LMDC, Université de Toulouse, UPS, INSA, Toulouse, France ; TBI, Université de Toulouse, CNRS, INRA, INSA, Toulouse, France</p>
9:20 – 9:40	<p><b>CAC-based binder for microbiologically induced corrosion resistant concretes and mortars</b>            Presented by <u>Florian HARTMANN</u> for Markus SCHMID, Gunther WALENTA, Danilo PASSALAQUA, Francesco SURICO, Fiorenza CELLA and Davide SALVIONI            CALUCEM GmbH, 68219 Mannheim, Germany and MAPEI S.p.A., 20158 Milano, Italy</p> <p><b>Microbiologically induced corrosion resistant concrete for sewer networks</b>            Presented by <u>Florian HARTMANN</u> for Markus SCHMID, Alexandra GERZ, Ingrid MIKANOVIC and Gunther WALENTA            CALUCEM GmbH, 68219 Mannheim, Germany</p>
9:40 – 10:00	<p><b>Comparison of converted and unconverted CAC pastes, reactivity in sewer environment using transport-reaction modelling</b>  <u>Matthieu PEYRE LAVIGNE</u>, Amaury BUVIGNIER, Cédric PATAPY, Etienne PAUL and Alexandra BERTRON            TBI, Université de Toulouse, CNRS, INRA, INSA, Toulouse, France; LMDC, Université de Toulouse, UPS, INSA, Toulouse, France</p>
10:00 – 10:20	<p><b>Microbial activity in calcium aluminate based materials</b>            Eva KRÄNZLEIN, <u>Paul BRUMM</u>, Thomas BIER, N. SHAHEEN and Syed Ali RIZWAN            Institute for Ceramics, Refractories and Composite Materials, TU Bergakademie Freiberg, 09599 Freiberg, Germany; NUST, Islamabad, Pakistan</p>
10:20 – 10:25	Discussion
10:25 – 11:00	Coffee
<b>SESSION 10 – DURABILITY IN BIOGENIC CONDITIONS</b>	
Chair: Prof. Thomas BIER	
11:00 – 11:20	<p><b>Degradation of mortar in acetic acid: Calcium aluminate versus Portland cement</b>  <u>Neven UKRAINCYK</u>, Eduardus KOENDERS, Cyrill GRENGG and Martin DIETZEL            Technische Universität Darmstadt, Institut für Werkstoffe im Bauwesen, 64 287 Darmstadt, Germany; Graz University of Technology, Institute of Applied Geosciences, 8010 Graz, Austria</p>
11:20 – 12:00	<p><b>Comparative acid resistance of one-part geopolymer and calcium aluminate cement mortar</b>            Cherdphong SEEDAO, M. E. FISHER and <u>Marjorie VALIX</u>            The University of Sydney, NSW 2006, Australia</p> <p><b>Placement and surface preparation requirements for application of protective mortars in live sewers</b>  <u>Jay IN</u> and Marjorie VALIX            The University of Sydney, NSW 2006, Australia</p>
12:00 – 12:05	Discussion
12:10 – 13:40	Lunch

<b>SESSION 11 – WIDE RANGING APPLICATIONS</b>	
Chair: Dr Charles FENTIMAN	
13:40 – 14:00	<p><b>Calcium aluminate cement composites to improve CO<sub>2</sub> injection well integrity</b>  <i>Krunoslav SEDIĆ, <u>Neven UKRAINCZYK</u>, Vilko MANDIĆ and Nediljka GAURINA-MEĐIMUREC</i>            Crosco, Integrated Drilling &amp; Well Services Co., Ltd., 10 313 Graberje Ivaničko, Croatia; Technische Universität Darmstadt, Institut für Werkstoffe im Bauwesen, 64 287 Darmstadt, Germany; University of Zagreb, Faculty of Chemical Engineering and Technology, 10 000 Zagreb, Croatia; University of Zagreb, Faculty of Mining, Geology and Petroleum Engineering, 10 000 Zagreb, Croatia</p>
14:00 – 14:20	<p><b>Applicability of ternary blended calcium aluminate cement-based mortar in deep sea conditions</b>  <i>Keisuke TAKAHASHI, <u>Mari KOBAYASHI</u> and Yuichiro KAWABATA</i>            Ube Industries, Ltd., Okinoyama 1-6 Ube 7558633, Japan; Port and Airport Research Institute, Nagase 3-1-1 Yokosuka 2390826, Japan</p>
14:20 – 14:40	<p><b>Setting shrinkage measurements during cement hydration</b>  <i><u>Stefan KUIPER</u>, Geert WAMS, Alexandra SPIES, Dagmar SCHMIDTMEIER, Sebastian KLAUS, Andus BUHR and Jerry DUTTON</i>            Almatix B. V., Rotterdam, The Netherlands; Almatix GmbH, Frankfurt/Ludwigshafen, Germany</p>
14:40 – 15:00	<p><b>Mineral interactions of CAC in refractory castables during thermal treatment</b>  <i><u>Alexandra GERZ</u>, Markus SCHMID and Gunther WALENTA</i>            CALUCEM GmbH, 68219 Mannheim, Germany</p>
15:00 – 15:05	Discussion
15:05 – 15:20	Closing Comments
15:20 – 16:00	Coffee

#### POSTERS

The posters will be displayed throughout the meeting and we ask the poster authors to be in attendance near their posters during selected coffee breaks