International Conference on Calcium Aluminates

Cambridge, 18-20 July 2022

This is a list of the provisional titles for which manuscripts have been received and these are at various stages of peer review and completion. The majority are complete and they have been grouped by topic, although this is not necessarily the order in which the papers will be presented at the Conference or indeed the Proceedings. We have taken the opportunity of the COVID19 related postponements to accept one or two additional manuscripts but they are not yet included on this list but will be added once the manuscripts have been received and formally accepted. Equally we hope that the authors listed will all be able to attend the conference, but we understand that this may not be possible in all cases.

PART ONE – CALCIUM ALUMINATE TYPES AND MANUFACTURE

Characterization of different types of Bauxite, their effect on calcium aluminate cement phase quantity and investigation of refractory properties
Metehan SEVEROĞLU and Berrak AVCIOĞLU
Çimsa Cement Research and Application Center, Turkey

Investigation of the effect of fuel types on Gehlenite and Mayenite phases and performance of Calcium Aluminate Cements
Metehan SEVEROĞLU and Berrak AVCIOĞLU
Çimsa Cement Research and Application Center, Turkey

Investigation of the relationship between mineralogical content and rapid hardening property of calcium aluminate cement
Murat AYDIN, Metehan SEVEROĞLU and Suphi URAL
Çimsa Cement Research and Application Center, Turkey; Mining Engineering Department, Engineering Faculty, Cukurova University, Adana 01330, Turkey

CO_2-reduced sulphoaluminate cements using Belterra clay: An abundant bauxite overburden in Brazilian Amazon to produce eco-friendly binders - *Abstract*
Leonardo BOIADEIRO AYRES NEGRÃO, Herbert PÖLLMANN and Marcondes LIMA DA COSTA
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F^- and SO_4^- containing calcium sulfoaluminate $3CaO•3Al_2O_3•xCaF_2•(1-x)CaSO_4$ with $0 \leq x \leq 1$
Sabrina GALLUCCIO and Herbert PÖLLMANN
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Synthesis of calcium rare earth aluminates
Chimednorov OTGONBAYAR and Herbert PÖLLMANN
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An investigation of the chemical distribution of minor elements in high alumina cements by a multidisciplinary approach
Marco CANTALUPPI, Fiorenza CELLA, Wojciech KAGAN, Nicoletta MARINONI and Fernando CÁMARA
Earth Science Department "Ardito Desio", University of Milan, 20133, Milan, Italy; MAPEI S.p.A., R&D Central Laboratory, Milan, Italy; Gòrka Cement SP. Z. O. O., Lipcowa 58, 32540, Trezbinia, Poland

Synthesis and characterization of solid solution CAH_{10} – $SrAH_{10}$
Herbert PÖLLMANN
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PART TWO – HYDRATION AND METHODS OF ANALYSIS

New advances in dynamic EIS (DEIS) methods for the understanding of the calcium aluminate cement hydration mechanisms
Dominika MADEJ
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Hydration of CAC-based binders: Population balance equations for kinetic modelling
Nicolas MAACH, Jean-François GEORGIN, Judith POMMAY and Stéphane BERGER
GEOMAS Laboratory, INSA Lyon, 69621 Villeurbanne, France; Imerys Technology Center, 38090 Vaulx-Milieux, France

Hydration kinetics of CA_2-CA-filler mixes analysed by in-situ XRD and pore solution composition
Andreas KOEHLER, Juergen NEUBAUER and Friedlinde GOETZ-NEUNHOEFFER
Friedrich-Alexander-University Erlangen-Nürnberg (FAU), GeoZentrum Nordbayern, Mineralogy, Erlangen, Germany

Influence of relative humidity exposure on the microstructure of hardened CAC paste
Sandra WAIDA, Mirco WAHAB and Thomas A. BIER
Institute of Ceram., Glass and Construction Materials, TU Bergakademie Freiberg, 09596 Freiberg, Germany

Electric resistivity testing method to assess conversion in calcium aluminate cement concrete
Marwa M. KORAYEM, Aaron J. STRAND, Matt 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

Decoupling the effect of hydrate mineralogy and porosity resulting from conversion on calcium aluminate cement corrosion resistance
W. LIU, A. W. H. CHEUNG and Margorie VALIX
The University of Sydney, Sydney, NSW, Australia

PART THREE – USES AS ACCELERATORS FOR PORTLAND CEMENTS

Ettringite accelerator in Portland cement dominated systems: A comparison of different calcium aluminate technologies
Stéphane BERGER, D. TOURLAKIS and Sébastien PERROT
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Amorphous flash calcined alumina, effect on shrinkage and set of Portland cement
Ludo C. VAN NES BLESSING
CALTRA Nederland BV., 3640 AH Mijdrecht, The Netherlands.

PART FOUR – ADMIXTURES FOR CAC

Effect of Li_2CO_3 on early hydration of CA-cement mixed with $CaCO_3$: Hydrate and liquid phase analysis
Tanja MANNINGER and Friedlinde GOETZ-NEUNHOEFFER
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Accelerating calcium aluminate cements with lithium salt: New insights on the hydration mechanism and on the properties
Camille NALET, Nicolas MAACH, Eric CHARPENTIER, Stéphane BERGER and Hervé FRYDA
Imerys Technology Center, 38090 Vaulx-Milieux, France

Specific biopolymers as accelerator for alumina cement
Alexander ENGBERT and Johann PLANK
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Hydration control of CAC using alkali carboxylic compounds
Herbert PÖLLMANN
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PART FIVE – HYDRATION AND DURABILITY OF BINARY SYSTEMS

The effect of temperature on the formation of the structure of hydrated calcium aluminate cement with microsilica

Valentin ANTONOVIČ, Renata BORIS, Rimvydas STONYS and Jurgita MALAIŠLIENĖ
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The effect of calcium nitrate and silica fume on properties of calcium aluminate cement

H. X. WANG, Gui-zhi DIAO, G. H. LIU and Danielle M. VAN NES
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Long-term durability of calcium aluminate cement concrete in japan

Daiki SHIMAZAKI, Taiichiro MORI, Yukio SASAGAWA and Etsuo SAKAI
Denka Co., Ltd. Omi Plant, Cement & Special Cement Additives Research Dept., Niigata 949-0393, Japan; Denka Co., Ltd. Head Office, Production & Process Technology Dept., Tokyo 103-8338, Japan; Tokyo Institute of Technology, School of Materials and Chemical Technology, Department of Materials Science and Engineering, Tokyo 152-8552, Japan

Aggregate impacts on chemistry, conversion, and strength in calcium aluminate cement concrete systems

Matt P. ADAMS, Marwa M. KORAYEM and Jason H. IDEKER
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Impacts of conversion on drying shrinkage of calcium aluminate cement using finely ground limestone

Marwa M. KORAYEM and Matt P. ADAMS
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Time-resolved investigation of the early hydration of calcium aluminate cement in the presence of calcite

Julian GOERGENS, Tanja MANNINGER and Friedlinde GOETZ-NEUNHOEFFER
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PART SIX – TERNARY BINDERS

Influence of sulphate source on hydration and phase formation in ternary binders

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Impact of calcium sulfate combination on performance and phase evolution in self-levelling compound

Ingrid MIKANOVIC, Ronnie KADEN, Arno REIL, Markus SCHMID, Gunther WALENTA and Dubravka MARETIC
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Towards understanding the ageing behaviour of SLU formulations: Impact of pre-hydration on individual components and the role of admixtures

Florian A. HARTMANN, Alexander ENGBERT and Johann PLANK
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Investigation of CAC - PC - CŠ in a ternary system and determination of ratio of CAC cement to PC

A. B. ÖZTÜRK, Ayten ÇAPUTÇU, Metehan SEVEROĞLU and Berrak AVCIOĞLU
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Dimensional stability of CSA-based binders for flow-applied screeds

Federica BERTOLLA, Livio Capelli and Fulvio CANONICO
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PART SEVEN – FURTHER ETTRINGITE SYSTEMS

Influence of calcined clay on the hydration of ternary binders based on calcium aluminate cement, calcium sulfate and Portland cement
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Quantification of phase compositions of complex mixtures of CAC with PC, anhydrite and metakaolinite
Herbert PÖLLMANN and Sabrina GALLUCCIO
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Stability of ettringite in blended systems with CAC-PC-CŠ
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Performance of rapid-repair (ettringite-based) concrete in a harsh marine environment
Edward (Ted) G. MOFFATT, Mike D. A. THOMAS, Racheal LUTE, Thanos DRIMALAS and Kevin FOLLIARD
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PART EIGHT – WIDE RANGING APPLICATIONS

Blended calcium aluminate cements for digital fabrication with concrete
Arnesh DAS, Lex REITER, Sara Mantellato and Robert FLATT
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Calcium aluminate cement composites to improve CO_2 injection well integrity
Krunoslav SEDIĆ, Neven UKRAINCZYK, Vilko MANDIĆ and Nediljka GAURINA-MEĐIMUREC
Crosco, Integrated Drilling & Well Services Co., Ltd., 10 313 Graberje Ivanićko, 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

Applicability of ternary blended calcium aluminate cement-based mortar in deep sea conditions
Keisuke TAKAHASHI, Mari KOBAYASHI and Yuichiro KAWABATA
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Setting shrinkage measurements during cement hydration
Stefan KUIPER, Geert WAMS, Alexandra SPIES, Dagmar SCHMIDTMEIER, Sebastian KLAUS, Andus BUHR and Jerry DUTTON
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Mineral interactions of CAC in refractory castables during thermal treatment
Alexandra GERZ, Markus SCHMID and Gunther WALENTA
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Research on properties of cost-effective structural heat resistant concrete using CAC and EAF slag aggregates
Ahmad EMAMI ALORAIZI and M. J. REZAEI ABADI
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PART NINE – DURABILITY IN BIOGENIC CONDITIONS

Towards a better understanding of biodegradation mechanisms of calcium aluminate based materials in sewer conditions
Amr ABOULELA, Cédric PATAPY, Alexandra BERTRON, Amaury BUVIGNIER and Matthieu PEYRE LAVIGNE
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CAC-based binder for microbiologically induced corrosion resistant concretes and mortars
Markus SCHMID, Gunther WALENTA, Danilo PASSALAQUA, Francesco SURICO, Fiorenza CELLA and Davide SALVIONI
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Microbiologically induced corrosion resistant concrete for sewer networks
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Comparison of converted and unconverted CAC pastes, reactivity in sewer environment using transport-reaction modelling
Matthieu PEYRE LAVIGNE, Amaury BUVIGNIER, Cédric PATAPY, Etienne PAUL and Alexandra BERTRON
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Microbial activity in calcium aluminate based materials
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Comparative acid resistance of one-part geopolymer and calcium aluminate cement mortar
Cherdphong SEEDAO, M. E. FISHER and Marjorie VALIX
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Degradation of mortar in acetic acid: Calcium aluminate versus Portland cement
Neven UKRAINCZYK, Eduardus KOENDERS, Cyrill GRENGG and Martin DIETZEL
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Characterisation of a 60-year old cementitious lining on a concrete sewer pipe removed from Mahatma Gandhi road sewer network in Durban, South Africa
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PART TEN – PROVISIONAL TITLES

Calorimetry studies on blending of calcium aluminate cement with ground granulated blast-furnace slag

Yun BAI, Shaoyan LI and Raman MANGABHAI
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A review on the effects of adding other materials on the properties of calcium aluminate cement

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Early-age hydration of anhydrous calcium aluminate phases on suspension

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the effect of chemical admixtures on the hydration of binary systems of CAC and calcium sulfate

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