



GESELLSCHAFT DEUTSCHER CHEMIKER



3rd International Conference on the Chemistry of Construction Materials

March 15 – 17, 2021 · Online

www.gdch.de/icccm2020



PROGRAM	3
Monday, March 15, 2021	3
Tuesday, March 16, 2021	6
Wednesday, March 17, 2021	8
POSTER	12
GENERAL INFORMATION	18

▶ AIM OF THE CONFERENCE

The conference aims at providing an inspiring forum for scientists from university, research facilities and industry to present results, to discuss and to focus on the forthcoming challenges.

Interdisciplinary presentations in all fields of construction materials science will show the many different perspectives of the topic.

▶ SCIENTIFIC COMMITTEE

V. Bach	Hanoi/VN	A. Taylor	Great Abington/UK
S. Bräse	Karlsruhe/DE	S. Wache	Trostberg/DE
F. Dehn	Karlsruhe/DE	Z. Wang	Beijing/CN
J.-B. d’Espinose Lacaillerie	Paris/FR	C. White	Princeton/US
A. Gerdes	Karlsruhe/DE	F. Winnefeld	Dübendorf/CH
J. Plank	Garching/DE	R. Zurbriggen	Sempach/CH
D. Stephan	Berlin/DE		

▶ SPONSORS



Monday, March 15, 2021

Virtual Room 1

13:00
-
16:30

WORKSHOP

Innovation – What does the future hold for construction chemistry

PROGRAM:

Anticipate to Innovate – how to be one Step ahead

Prof. Andreas Gerdes, KIT Karlsruhe

Lignosulfonates – Innovative, CO₂ Negative Solution for Sustainable Construction

Dr. Mirko Gruber, Borregaard

Innovative, CO₂ Negative Defoamers

Markus Roos, Evonik

Price: Participants € 80,-; Students € 20,-

Booking required (limited number of participants)

Virtual Room 1

17:00

GENERAL ASSEMBLY

of the Chemistry of Construction Materials Division of the GDCh

**MITGLIEDERVERSAMMLUNG
der Fachgruppe Bauchemie**

Tagesordnung:

1. Begrüßung
- Verabschiedung der Tagesordnung
2. Bericht des Fachgruppen-Vorstands
3. Nachwuchsförderung
4. Veranstaltungen
5. Verschiedenes

PROGRAM

Tuesday, March 16, 2021

Virtual Room 1

9:30	OPENING AND WELCOME Andreas Gerdes, Frank Winnefeld
9:50	Organizational Details German Materials Society (DGM)
Invited Speaker Session	
<i>Chair: F. Winnefeld</i>	
10:00	Research Properties of UHPC and Application in Vietnam B. V. Tran, Hanoi/VN
10:30	Microstructural Characteristics Analysis of PCE Copolymer from Polyether Macromonomer and AA based on Determination of Monomer Reactivity Ratios Z. Wang, Beijing/CN

Virtual Room 1

Sustainable Construction Materials

Chair: R. Zurbriggen

11:10	Quantitative Characterization of Cements and SCM H. Pöllmann, Halle (Saale)/DE
11:30	RILEM TC 267-TRM: Rapid, Relevant and Reliable (R³) Test, A Promising Reactivity Method for Supplementary Cementitious Materials D. Londono-Zuluaga, Lausanne/CH
11:50	The effect of pH Value, Ca/Si Ratio and Equilibration Time on Al Uptake in C-S-H S. Barzgar, Dübendorf/CH
12:10	Effects of Limestone Particle Size in Cement Hydration Reactions M. A. Enders, Beckum/DE
12:30	Can We Use Conventional PCE Superplasticizers in Calcined Clay Blended Cements? J. Plank, Garching/DE

Virtual Room 2

Polymers in Civil Engineering

Chair: S. Wache

11:10	Effect of Hygrothermal Conditioning on the Flexural and Thermo-mechanical Properties of Particulate-filled Epoxy-based Coatings M. Mehrinejad Khotbehsara, Toowoomba/AU
11:30	Study on the Marine Environment Aging Resistance and Damping Properties of Polyurea Coatings P. Lyu, Qingdao/CN
11:50	Influences of Styrene-Butyl Acrylate Polymer Latexes on Yield Stress of Cement Pastes C. Y. Zhang, Beijing/CN
12:10	Interfacial Chemistry of Organic Polymer Coatings on Hydrating Cement Paste P. Ghosh, Madras/IN
12:30	Crack-bridging of One-component Flexible Waterproofing Membranes: Mechanisms and Influencing Parameters M. Waldvogel, Bern/CH

BREAK (30 MIN)

POSTER SESSION / EXHIBITION (90 min)

PROGRAM

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Virtual Room 3

Admixtures and Additives

Chair: D. Stephan

11:10	Recent Innovations in Admixture Technology L. Lei, Garching/DE
11:30	Influence of Phosphate-based Superplasticizer on the Hydration of Model Cement A. Mezhev, Haifa/IL
11:50	¹H-TD-NMR as a Method for in situ Monitoring of Cement Hydration and Film Formation: Deconvolution of H Signals in Cement-polymer Pastes and the Origin for T1 Shift of H in Polymers During Hardening C. Schmidtke, Trostberg/DE
12:10	A Molecular Level Study of Retardation of Cement Hydration by Sucrose W. Xu, Zürich/CH
12:30	Changes in the Hydration Kinetics and Formed Hydrate Phases in a CSA-OPC-anhydrite Mixture by High Li₂CO₃ Additions J. J. Wolf, Erlangen/DE

BREAK (30 MIN)

POSTER SESSION / EXHIBITION (90 min)

Tuesday, March 16, 2021

Virtual Room 1

Sustainable Construction Materials

Chair: F. Winnefeld

14:50 **CO₂ Utilization for Transformation of Demolishing Concrete Waste into Cementitious Materials**
M. Zajac, Heidelberg/DE

15:10 **Carbonation of Portland Clinker and Hydrated Cement under Wet Conditions: Insights from Solid-state NMR**
J. Skibsted, Aarhus/DK

15:30 **Use of Carbonated Calcium Silicate as a Supplementary Cementitious Material**
D. Ravikumar, Piscataway/US

15:50 **Self Protecting Cement. Shelf Life and Physical-Mechanical Properties of the Concrete**
K. Peterson, Toronto/CA

16:10 BREAK (10 MIN)

Virtual Room 1

Invited Speaker Session

Chair: F. Winnefeld

16:20 **What's Next for Chemical Admixtures?**
T. Gädt, Munich/DE

16:50 **Impact of Sodium and Alumina on Calcium-silicate-hydrate Gel: Fundamental Findings and Macroscopic Implications**
C. E. White, Princeton/US

Virtual Room 2

Sustainable Construction Materials

Chair: J. Plank

14:50 **Thermal Activation of Kaolinite, Disordered Kaolinite and Dickite: Experimental Studies and Density Functional Theory (DFT)**
K. Emmerich, Karlsruhe/DE

15:10 **Evaluation of Common and Dirty Clay Deposits by an IR Spectroscopic Method – Towards Alkali Activation and Pozzolanic Applications**
F. Dathe, Karlsruhe/DE

15:30 **Calcined Clay from Iraqi Clay Deposits for the Production of Green Mortar**
E. T. Dawood, Mosul/IQ

15:50 **The Hydration of C₃A in Presence of Calcined Clays**
M. Maier, Neubiberg/DE

Tuesday, March 16, 2021

Virtual Room 3

Admixtures and Additives

Chair: A. Gerdes

14:50 **Comparing the Influence of Synthesized Core Multi-shell Silica Nanoparticle with the Commercial Silica Nanoparticles on Cementitious Systems**
C. Tran, Siegen/DE

15:10 **Energy Dissipation of the Modified Cement Matrix During Fracture Process**
T. M. Hafshejani, Karlsruhe/DE

15:30 **Interaction Between Biopolymers and Cement-based Materials**
A. Ghahremaninezhad, Miami/US

15:50

16:10 BREAK (10 MIN)

Virtual Room 1

Invited Speaker Session

Chair: F. Winnefeld

16:20 **What's Next for Chemical Admixtures?**
T. Gädt, Munich/DE

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PROGRAM

Wednesday, March 17, 2021

Virtual Room 1

9:15

Organizational details
German Materials Society (DGM)

Invited Speaker Session

Chair: A. Gerdes

9:30

The Role of Silicates in the Activation Solution of Alumino-silicates (Slags and Clays)
J.-B. d'Espinose de Lacaillerie, Paris/FR

10:00

Additive Manufacturing of Concrete Structures – The Role of Admixtures
C. Gehlen, Munich/DE

10:30

VERLEIHUNG HANS-KUEHL MEDAILLE & AWARD CEREMONY FOR YOUNG RESEARCHERS

Virtual Room 1

Sustainable Construction Materials

Chair: S. Wache

11:30

Activation of Slags: Coupling between Chemistry and Rheology
C. Paillard, Paris/FR

11:50

Glassy Cement Precursors and CO₂ Emissions
P. Kinnunen, Oulu/FI

12:10

Effect of Minor Elements on the Hydration of Cement Blended with Non-ferrous Slags as SCMs
M. T. Pedersen, Dübendorf/CH

12:30

Leaching and Acid Resistance of Metakaolin-based Geopolymer
N. Ukrainczyk, Darmstadt/DE

12:50

BREAK (30 MIN)

Virtual Room 1

13:20

POSTER SESSION / EXHIBITION (90 min)

14:50

POSTER AWARD

Virtual Room 2

Sustainable Construction Materials

Chair: J. Plank

Synchrotron X-ray Pair Distribution Function Analysis of Calcium Silicate Pastes
A. Cuesta, Malaga/ES

Influence of the Liquid to Powder Ratio on the Early Properties of Volcanic Ash Phosphate Cement
J. N. Djobo, Berlin/DE

Investigations on the Shrinkage of Ultra-high Performance Concrete Based on Alkali Activated Slag
A. Wetzel, Kassel/DE

Effects of Nano Silica and Wood Ash on Sustainable Reactive Powder Mortar
E. Dawood, Mosul/IQ

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VERLEIHUNG HANS-KUEHL MEDAILLE & AWARD CEREMONY FOR YOUNG RESEARCHERS

Virtual Room 3

Performance and Durability

Chair: D. Stephan

11:30

Very Early Hydration of Portland Cement Studied by Rheology, Calorimetry, SAXS, NMR and Conductance
M. Haist, Karlsruhe/DE

11:50

Short-term Length Change Measurements and Sorption Isotherms for Structural Elucidation of the C-S-H Matrix in Cementitious Materials
M. Wahab, Freiberg/DE

12:10

The Development of the Silicate Polymerization in Calcium Silicate Hydrate Investigated by in situ ATR-IR Correlated with XRD and NMR
E. John, Berlin/DE

12:30

Chemically Tailored Binders as a Future Contribution to Water Purification
M. Wagner, Munich/DE

12:50

BREAK (30 MIN)

Virtual Room 1

13:20

POSTER SESSION / EXHIBITION (90 min)

14:50

POSTER AWARD

Wednesday, March 17, 2021

Virtual Room 1

Sustainable Construction Materials

Chair: F. Winnefeld

- 15:10 **Examination of ye'elite formation mechanisms**
A. Smith, Limoges/FR
- 15:30 **Characterisation and hydration of a belite-calcium sulfoaluminate (BCSA) clinker industrially produced in the presence of a SO_x containing atmosphere**
A. Elhoweris, Doha/QA
- 15:50 **Hydration properties and technical behaviour of blended belite calcium sulfoaluminate cements**
A. Telesca, Potenza/IT
- 16:10 **Sulfate- and Acid-resistance of Calcium Aluminate Cement mortars**
A. Gerz, Mannheim/DE
- 16:30 **Interactions between Portland Cement and Calcium Sulfoaluminate Cement**
T. Matschei, Dresden/DE
- 16:50 Closure

Virtual Room 2

Digitalization in Construction Chemistry

Chair: S. Wache

- Construction Chemicals Industry Goes digital – Product Data Templates of Construction Chemicals for Building Information Modeling (BIM)**
M. Thome, Frankfurt (Main)/DE
- Chemical Admixtures Used in Digital Manufacturing**
J. Plank, Garching/DE
- Characterisation of Cement Clinkers by Analytical Electron Microscopy and Machine Learning Based Image Analysis**
C. Rößler, Weimar/DE
- Density Mapping and Phase Determination of Portland Cement Mortar Using X-ray Computed Tomography and X-ray Diffraction**
S. Witzleben, Rheinbach/DE
- Reactive Transport Modelling in Porous Systems – Experimental and Numerical Approaches**
A. Leiboldt, Karlsruhe/DE

Closure

Wednesday, March 17, 2021

Virtual Room 3

Performance and Durability

Chair: A. Gerdes

- 15:10 **Chemical Interactions in the System “Cement-organics-radionuclides” Relevant for Nuclear Waste Disposal – Studies within EURAD-CORI**
M. Altmaier, Karlsruhe/DE
- 15:30 **Electrochemical Chloride Extraction Using Diallyldimethylammonium Hydroxide Based Hydrogels as Electrolytes**
A. Jung, Aachen/DE
- 15:50 **How Surface Chemistry Controls the Performance of Mineral-bound Materials**
M. Schwotzer, Karlsruhe/DE
- 16:10 **Reaction Kinetics in Solution Experiments to Avoid the Alkali-silica Reaction**
G. Hartmut, Hamburg/DE
- 16:30
- 16:50 Closure

Sustainable Construction Materials

- Pa001 **Physical Properties of Low CO₂ Cement Binder with Carbonated Fluidized-Bed Boiler Ash**
W. G. Lee, Samcheok/KR, M. S. Song, Samcheok/KR, S. H. Jeon, Samcheok/KR
- Pa002 **Predicting Cement Hydration Kinetics by Phase Diagrams: A Comparative Study of in situ Experiments and Thermodynamic Phase Diagram Modelling in the Systems Ca-Al-CO₃-H₂O and Ca-Al-SO₄-H₂O**
D. Jansen, Erlangen/DE
- Pa003 **Belterra Clay: a Promissory Raw Material for the Production of Low CO₂ Binders in the Brazilian Amazon**
L. Negrão, Halle (Saale)/DE, H. Pöllmann, Halle (Saale)/DE, M. L. Costa, Belém/BR
- Pa004 **Influence of OPC Addition on Transport and Crystallization of Mg-salts on Gypsum-based Materials During Drying**
N. Fobbe, Erlangen/DE, D. Jansen, Erlangen/DE, F. Götz-Neunhoeffler, Erlangen/DE
- Pa005 **The influence of Al³⁺ and F⁻ Ions on Formation and Thermal Stability of Calcium Silicate Hydrates**
K. Baltakys, Kaunas/LT, A. Gineika, Kaunas/LT, T. Dambrauskas, Kaunas/LT, A. Eisinas, Kaunas/LT
- Pa006 **X-Ray Diffraction Tomography Investigations on the Hydration Process of Concrete and Plaster of Paris**
M. La Bella, Grenoble/FR, C. Giacobbe, Grenoble/FR, A. Fernandez-Martinez, Grenoble/FR, J. P. Wright, Grenoble/FR
- Pa007 **Pozzolan Reactivity of Impure Calcined Kaolinitic Clays and Pure Metakaolins**
N. Mayer, Karlsruhe/DE, A. Hirsch, Karlsruhe/DE, L. A. Perez Garcia, Moa/CU
- Pa008 **Calcium-silicate-hydrates from Reactive Dicalcium Silicate Binder**
A. Pirvan, Heidelberg/DE, M. Ben Haha, Heidelberg/DE, K. Scrivener, Lausanne/CH
- Pa009 **Challenges and Advances on Chemical and Mineralogical Characterization of Industrial Wastes and by-products**
F. F. Chotoli, São Paulo/BR, V. A. Quarcioni, São Paulo/BR, S. S. Lima, São Paulo/BR, P. R. M. Leal, São Paulo/BR
- Pa010 **A NCw Active Ingredient to Prevent an Alkali-silica Reaction (ASR) in concrete**
P. Schäffel, Essen/DE, H. Seibt, Berlin/DE, D. Ballschuh, Berlin/DE
- Pa011 **Comparison of Micromechanical and Macromechanical Properties of Geopolymers**
N. Werling, Karlsruhe/DE, R. Schwaiger, Jülich/DE, A. Hirsch, Karlsruhe/DE, F. Dehn, Karlsruhe/DE, R. Schuhmann, Karlsruhe/DE, K. Emmerich, Karlsruhe/DE
- Pa012 **Investigation of the Hydration Mechanism of MgO/HY Blends**
A. German, Dübendorf/CH, F. Winnefeld, Dübendorf/CH, P. Lura, Dübendorf/CH

- Pa013 **Accelerated Aging of a Slag-based Ettringite Binder: Mechanical Properties and Phase Evolution**
H. Nguyen, Oulu/FI, V. Carvelli, Milan/IT, W. Kunther, Lyngby/DK, P. Kinnunen, Oulu/FI, M. Illikainen, Oulu/FI
- Pa014 **Accelerated Carbonation of C₂SH Based Dense Concrete**
R. Siauciunas, Kaunas/LT, Z. Takulinskas, Kaunas/LT, E. Prichockiene, Kaunas/LT
- Pa015 **Effects of Superplasticizer Type and Dosage on the Properties of Green Reactive Powder Mortar**
E. Dawood, Mosul/IQ, M. Hani, Mosul/IQ, J. Plank, Munich/DE
- Pa016 **Thermodynamic Properties of Ye'elimite**
B. Lothenbach, Dübendorf/CH, F. Winnefeld, Dübendorf/CH, C. A. Geiger, Salzburg/AT, E. Dachs, Salzburg/AT, A. Pisch, Grenoble/FR
- Pa017 **Effect of Carbonated Cement Paste on Composite Cement Hydration and Related Performance**
M. Ben Haha, Leimen/DE, J. Skocek, Leimen/DE, F. Bullerjahn, Leimen/DE, P. Durdzinski, Leimen/DE, J. Skibsted, Aarhus/DK, M. Zajac, Leimen/DE
- Pa019 **The Influence of Potassium Hydroxide Solution on the Hydration of Pure Triclinic C₃S and Al-doped Triclinic C₃S**
D. Wagner, Erlangen/DE, F. Bellmann, Weimar/DE, J. Neubauer, Erlangen/DE
- Pa020 **Plant-based Raw Material for Chemical Admixtures for Concrete for a Greener Future**
M. Gruber, Karlsruhe/DE, H. Andreassen, Sarpsborg/NO
- Pa021 **Study of the Hydration and Phase Assemblage Development in Quaternary Blends Containing Portland Cement, Calcium Aluminate Cement, Sulphate and Slag/Fly Ash/Limestone Powder**
E. Qoku, Freiberg/DE, T. A. Bier, Freiberg/DE, V. Zhaka, Lulea/SE
- Pa022 **Effect of Alkali Hydroxide on Calcium-silicate-hydrates (C-S-H)**
Y. Yan, Dübendorf/CH, B. Lothenbach, Dübendorf/CH, K. Scrivener, Lausanne/CH
- Pa023 **Synthesis of Alkali Activated Basalt - Ground Granulated Blast Furnace Slag**
Z. Sun, Aachen/DE, A. Vollpracht, Aachen/DE
- Pa024 **A Systematic Analysis of Research Trends on the Environmental Impact of Alkali-activated Cements and Concretes (AACCC) during 2000–2020**
M. Nikravan, Berlin/DE, R. Mancke, Berlin/DE, D. Stephan, Berlin/DE
- Pa025 **A Durability Study on Blended Cements Containing Sulfoaluminate Clinker**
D. Gastaldi, Casale Monferrato/IT, F. Bertola, Casale Monferrato/IT, F. Canonico, Casale Monferrato/IT
- Pa026 **Effect of Ceramics Content in Building Rubbles Used as Alternative Raw Material for Portland Clinker Synthesis**
H. Krour, Villers-les-Nancy/FR, R. Trauchessec, Villers-les-Nancy/FR, A. Lecomte, Villers-les-Nancy/FR, C. Diilberto, Villers-les-Nancy/GF, L. Barnes-Davin, L'Isle-d'Abeau/FR, B. Bolze, L'Isle-d'Abeau/FR, A. Delhay, L'Isle-d'Abeau/FR

- Pa027 **Passivation of Cement-based Materials**
P. Thissen, Eggenstein-Leopoldshafen/DE
- Pa028 **Re-examination of the $\beta \rightarrow \gamma$ Transformation of Ca_2SiO_4**
A. Smith, Limoges/FR, S. Saidani, Limoges/FR, Y. El Hafiane, Limoges/FR, L. Ben Tahar, Tunis/TN
- Pa029 **Early Hydration of Belite Sulfoaluminate Cement Investigated by in-situ X-ray Diffraction Analysis**
M. Borstnar, Ljubljana/SI, C. L. Lengauer, Vienna/AT, S. Dolenc, Ljubljana/SI
- Pa030 **Experimental Investigation of the Durability of Blended Mortars Based on Mineral Additions and Prepared Sand**
L. Belagraa, M'sila/DZ, K. Bellami, Biskra/DZ, B. Taalah, Biskra/DZ
- Pa031 **Review of Geopolymer Cement Uses in Pavement and Soil Stabilisation**
K. Allali, Bechar/DZ, N. Bella, Bechar/DZ, M. Bokkar, Bechar/DZ

Admixtures and Additives

- Pb001 **Effect of Nanosilica on Hydration, Microstructure and Mechanical Performance of 3D Printed Mortar**
P. Sikora, Berlin/DE, T. Dorn, Berlin/DE, M. Liard, Zurich/CH, D. Lootens, Zurich/CH, S.-Y. Chung, Seoul/KR, M. Abd Elrahman, Mansoura/EG, D. Stephan, Berlin/DE
- Pb002 **The Influence of Synthetic Calcium Aluminate Sulfate on the Hydration of Portland Cement**
K. Schumacher, Siegen/DE, C. Pritzel, Siegen/DE, R. Trettin, Siegen/DE
- Pb003 **Study on Improving Shrinkage Reduction Performance of Polycarboxylic Acid Superplasticizer**
Q. J. Mao, Beijing/CN, J. Zhang, Beijing/CN, J. F. Ma, Beijing/CN, Z. M. Wang, Beijing/CN
- Pb004 **Effect of Different Sulfate Carriers on Cement Hydration with the Presence of Triethanolamine**
Z. Lu, Berlin/DE, T. Hirsch, Berlin/DE, D. Stephan, Berlin/DE
- Pb005 **Effect and Action Mechanism of Retarders on the Hydration and Properties of High-belite Calcium Sulphoaluminate Cement**
R. Tang, Beijing/CN, Z. Wang, Beijing/CN, M. Lan, Beijing/CN
- Pb006 **A Supercritical Water-based Technology for Calcium Silicate Hydrate Synthesis: Application to Green Cementitious Materials**
V. Musumeci, Pessac/FR, J. Dolado, San Sebastián/ES, C. Aymonier, Pessac/FR
- Pb009 **Influence of Calcite Source on Monocarbonate Formation during the Early Hydration of CAC-calcite Blends**
J. W. Goergens, Erlangen/DE, F. Götz-Neunhoeffer, Erlangen/DE
- Pb010 **Magnesium Oxide as Expansive Agent for Concrete to Reduce Shrinkage**
D. Bezar, Baden/AT

- Pb011 **The Influence of Environmental Factors on the Swelling Behaviour of Poly(acrylate) and Poly(acrylamide-co-acrylate) SAPs**
T. Mrohs, Aachen/DE, A. Jung, Aachen/DE, M. Endres, Aachen/DE, O. Weichold, Aachen/DE
- Pb012 **Effect of Lignosulfonate Type and Addition Time on Hydration Kinetics and Dispersion of Cement Pastes**
G. Le Saout, Ales/FR, Y. El-Bitouri, Ales/FR, N. Azema, Ales/FR, K. De Weerd, Trondheim/NO, R. A. Lauten, Sarpsborg/NO
- Pb013 **Usage of Seed Crystals to Accelerate the Hydration of Hemihydrate**
C. Pritzel, Siegen/DE, E. Abu Zeitoun, Siegen/DE, Y. Sakalli, Siegen/DE, R. Trettin, Siegen/DE
- Pb014 **Influence of Citric Acid on the Hydration of Hemihydrate**
C. Pritzel, Siegen/DE, Y. Sakalli, Siegen/DE, E. Abu Zeitoun, Siegen/DE, R. Trettin, Siegen/DE
- Pb015 **Chemical and Physical Contribution to the Structural Build-up of Cement-paste During the First Hours of Hydration**
K. Zhang, Berlin/DE, A. Mezhov, Berlin/DE, D. Stephan, Berlin/DE, W. Schmidt, Berlin/DE
- Pb016 **Rheological and Calorimetric Properties of Selected Polycarboxylate Ethers in Cementitious Systems**
T. Wagner, Garching/DE, T. Lange, Garching/DE, T. Gädt, Garching/DE

Performance and Durability

- Pd002 **Analysis of Coupled Exposures Considering the Rapid Chloride Migration Test and the Accelerated Carbonation Test**
S. Lamparter, Karlsruhe/DE, M. Vogel, Karlsruhe/DE, F. Dehn, Karlsruhe/DE
- Pd003 **Interaction of Low Molecular Weight Organics with AFm and AFt Phases**
R. E. Guidone, Dübendorf/CH, B. Lothenbach, Dübendorf/CH, X. Gaona, Karlsruhe/DE, M. Altmaier, Karlsruhe/DE, H. Geckeis, Karlsruhe/DE
- Pd004 **Non-invasive Investigation of Deterioration Reactions of Cement-based Materials by Means of Neutron Diffraction**
M. Schwotzer, Eggenstein-Leopoldshafen/DE, A. Bogner, Karlsruhe/DE, J. Kaltenbach, Eggenstein-Leopoldshafen/DE, C. Scheffzük, Karlsruhe/DE
- Pd005 **Inherently Biofilm-repelling CSH-phases**
N. Schewe, Eggenstein-Leopoldshafen/DE, P. Thissen, Eggenstein-Leopoldshafen/DE, T. Schwartz, Eggenstein-Leopoldshafen/DE
- Pd007 **Quantitative Determination of C_3A by XRD in Composite Cements**
A. Blum, Clausthal-Zellerfeld/DE, A. Wolter, Clausthal-Zellerfeld/DE
- Pd008 **Chloride in Concrete: Migration Coefficients, Effective Content and Durability**
C. Paglia, Canobbio/CH, C. Mosca, Canobbio/CH

- Pd009 **Improvement of Binders Containing Ultrafine Granulated Blast-Furnace Slag to Obtain High Acid Resistance**
L.-A. Kempf, Bochum/DE, R. Breitenbücher, Bochum/DE, C. Gerten, Duisburg/DE, A. Ehrenberg, Duisburg/DE
- Pd010 **Ettringite: the Decisive Phase Influencing the Initial Development of Rheology in OPC Paste**
C. Jakob, Erlangen/DE, D. Jansen, Erlangen/DE, U. Pott, Berlin/DE, D. A. Stephan, Berlin/DE, J. Neubauer, Erlangen/DE
- Pd012 **Control of Efflorescence in Cement-Based Construction Materials with Silicone and Acrylic Mixtures**
J.-P. Lecomte, Seneffe/BE, J. Vyörykkä, Horgen/CH, R. Baumann, Horgen/CH
- Pd013 **Trace Element Detection by LA-ICP-MS and REM-EDX in Hardened Blended Cement Pastes**
M. J. Decker, Munich/DE, J. Classen, Munich/DE, H. Hilbig, Munich/DE, D. Heinz, Munich/DE
- Pd014 **Main Degradations of Portland Cement Paste in Contact with Opalinus Clay: Thermodynamic Modelling Helping the Understanding of the Experimental Observations**
E. Bernard, Bern/CH, A. Jenni, Bern/CH, U. Maeder, Bern/CH
- Pd016 **Durability of Alkali Activated Materials Based on Tunisian Phosphate Washing Waste**
R. Dabbebi, Sfax/TN, J. L. Barroso de Aguiar, Guimaraes /PT, S. Baklouti, Sfax/TN
- Pd017 **Characterization of Porosity in Intact Specimens of Concrete in Order to Investigate Reactive Transport in Irradiated Concrete**
Q. I. Roode-Gutzmer, Dresden/DE, J. Kulenkampff, Leipzig/DE
- Pd018 **Nano-scale 3D Reconstruction of C-S-H-phases Using Modern FIB/SEM Technology**
F. Kleiner, Weimar/DE, C. Röbler, Weimar/DE, H. M. Ludwig, Weimar/DE
- Pd019 **A Comparative Study of Analytical Methods for Evaluating Acid Degradation of Concrete**
S. Madraszewski, Berlin/DE, J. Gerlach, Hannover/DE, A. Hirsch, Karlsruhe/DE, V. Mercedes Kind, Karlsruhe/DE, M. Sielaff, Berlin/DE
- Pd021 **A Basic Study on the Morphology and Composition of Ettringite Crystals in Dependence of Temperature**
S. Afflerbach, Siegen/DE, C. Pritzel, Siegen/DE, R. Trettin, Siegen/DE
- Pd022 **Novel Raman Imaging Protocol for High-resolution Phase Mapping of Granite**
K. C. Polavaram, Urbana/US, N. Garg, Urbana/US

Digitalization in Construction Chemistry

- Pe001 **Optimization of Workability of Self-compacting Mortar Using Full-factorial and Central Composite Design (CCD)**
A. Qorllari, Freiberg/DE, T. A. Bier, Freiberg/DE

- Pe002 **Clay with Cement for Use in 3D Printing**
A. C. Santos, São Paulo/BR, V. A. Quarcioni, São Paulo/BR, O. H. Becere, São Paulo/BR, F. F. Chotoli, São Paulo/BR
- Pe003 **Pore-filling Model for Micro-structure of Cement Hydration Using Level-set**
L. Nguyen-Tuan, Weimar/DE, C. Roessler, Weimar/DE, M. A. Etzold, Cambridge/GB, F. Klein, Weimar/DE, H. M. Ludwig, Weimar/DE
- Pe004 **Development of a Model to Assess the Environmental Properties of Common Outdoor Plasters and Mortars**
P. Vega-Garcia, Valley/DE, R. Schwerd, Valley/DE, B. Helmreich, Garching/DE
- Pe005 **Polabcal – automated Reactivity Measurements with Isothermal Calorimetry as a New Key to Process Control and Product Development in Construction Materials**
M. A. Enders, Beckum/DE, T. Matschei, Dresden/DE, R. Teutenberg, Beckum/DE
- Pe006 **CAC Based Materials in 3D Inkjet Printing Method**
E. Kraenzlein, Freiberg/DE, F. Brandes, Freiberg/DE, T. A. Bier, Freiberg/DE
- Pe007 **A Density Functional Theory Study on the Interaction of Graphene Oxide with Cementitious Moieties**
M. Izadifar, Eggenstein-Leopoldshafen/DE, A. Ayuela, San Sebastian/ES, J. Dolado, San Sebastian/ES, A. Gerdes, Karlsruhe/DE, C. Wöll, Karlsruhe/DE, P. Thissen, Karlsruhe/DE

► CONFERENCE PLATFORM

We decided to use a tool created by the German Materials Society (DGM). The DGM has already successfully carried out web conferences with this tool. Its technical possibilities are cutting-edge and offer you not only the traditional features of an online conference tool but also possibilities for bilateral exchange and networking such as:

- **Live Conference with Q & A functionality and networking functions**
- **Use Zoom to present your lecture live**
- **Time shift function for lectures on demand**
- **Poster Exhibition with live video discussion functionality**

To use all features of the digital conference, you need an up-to-date browser. The latest versions of Chrome, Firefox, Safari, and Edge with Blink engine are fully supported. JavaScript must be active. For video calls, permission to access your microphone and camera is required.

► REGISTRATION

Please register online no later than **February 28, 2021**.

www.gdch.de/icccm2020

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Upon online registration, payment by credit card or direct debit (only with German bank account) or bank transfer is possible. The invoice will be sent to you automatically.

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► REGISTRATION FEES¹⁾

GDCh- and member of EuChemS-member societies	€ 160,-
Member, job seeker or retired	€ 80,-
Non-member	€ 200,-
Student** (GDCh- and member of EuChemS-member societies)	€ 35,-
Student** (Non-member)	€ 45,-
Gold-member (with over 50 years of GDCh membership)	free of charge

* The registration fees are not liable to value added tax (tax exemption additional § 4 Nr. 22a UStG.)

** valid Student-ID required

► CANCELLATION

Written cancellations received on or before **February 1, 2021** will be refunded less a 25,- Euro administration fee. After that date the full amount of the invoice has to be paid. Requests for refund will not be accepted; however, registration may be transferred to another member of your organisation. In this case, please send a note to GDCh, Event Team.

If the meeting is cancelled for whatever reason, fees paid will be refunded. Further recourse is excluded.

► DATES

Deadlines

February 28, 2021 Personal registration

February 28, 2021 Cancellation of participation

► COPYRIGHT PERMISSION

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► INFORMATION BEFORE AND AFTER THE MEETING

GESELLSCHAFT DEUTSCHER CHEMIKER e.V.

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Registered Charity No.: VR 4453 Registergericht Frankfurt/Main



IHRE DEADLINES
01.03.2021 Kurzvorträge
23.04.2021 Poster
21.06.2021 Last-Minute-Poster
30.06.2021 Reise-Stipendien

CHEMISTS CREATE SOLUTIONS

29. August – 1. September 2021
in München