

POSTER SESSION Monday, June 26, 2017 | 5:00 – 7:00 pm | Press A/B
 Student Reception | 7:00 – 9:00 pm | Tech Rec

- **Calcite dissolution rate spectra measured by digital holographic microscopy**
Alexander Brand, Pan Feng and Jeffrey Bullard
- **Mechanisms of sulfate attack in alkali-activated slag**
Kai Gong and Claire White
- **Evaluation of the VCCTL as a replacement for physical testing using traditional laboratory proficiency metrics**
Benjamin Watts, Chengcheng Tao, Christopher Ferraro and Forrest Masters
- **Properties at early age of ultra-high volume mineral admixture mass concrete**
Zhifang Zhao and Hougui Zhou
- **Using x-ray fluorescence to assess the composition and early age properties of cementitious pore solutions**
Marisol Tsui Chang, Prannoy Suraneni and W. Jason Weiss
- **Prediction of fly ash characterization and performance using ASEM analysis**
Shinhyu Kang, Taehwan Kim, Tyler Ley and Jeff Davis
- **Computational and experimental analysis of mechanical and transport properties of rubberized concrete**
Ruizhe Si, Qingli Dai and Jiaqing Wang
- **Laboratory performance of rubber-modified self-consolidating and ultra-high performance concrete**
Ruizhe Si, Qingli Dai, Shuaicheng Guo, Jiaqing Wang and Song Han
- **Sensitivity of workability loss of flowable cement paste to small changes in constituent elements and mixing procedure**
Azadeh A. Asghari, Dimitri Feys and Geert De Schutter
- **Freeze-thaw crack determination in cementitious materials using 3D x-ray computed tomography and acoustic emission**
Yasmina Shields, Yaghoob Farnam, Edward Garboczi and Jason Weiss
- **Rapid reinforcing bar non-uniform corrosion--test method, mechanism and corrosion layer distribution model**
Chuanqing Fu, Xianyu Jin and Jiamin Liu
- **Study on influence of asphalt emulsion on the hydration of asphalt modified Portland cement mortar**
Jinxiang Hong, Kejin Wang and Wei Li
- **Experimental studies and analyses on the role of fibres and recycled aggregates in enhancing the durability and sustainability of SCC concrete structures**
T. A. Rajha Rajeswaran, A Ravichandran and S Kothandaraman
- **Evaluation of bond strength between newly-cast concrete and pre-existing substrate concrete using third-point flexural bond test**
Zhengqi Li, Prasada Rangaraju and Jigar Desai
- **A calcium silicate hydrate model builder and accurate force field parameters for atomistic simulations of C-S-H polymorphs using INTERFACE-MD**
Darice Guittet, Tariq Jamil, Ratan K. Mishra and Hendrik Heinz
- **Wear and strength characteristics of nano-engineered crumbed-rubber concrete**
Jiaxin Chen, Caroline Johnson, Sakdirat Kaewunruen and Ange-Therese Akono
- **Extending benefits of self-consolidating concrete by incorporating synthetic fibers**
Abhishek Master, Dongshuo Ji and David Lange
- **Expanding reuse options for recycled concrete aggregate**
La Sasha Walker, Reginald Desroches and Kimberly Kurtis
- **Composition, structure and strength of metakaolin geopolymers with and without calcium**
Xu Chen, Eric Kim, Leslie J. Struble
- **Use of R3 rapid screening test to determine reactivity and chloride binding potential of locally available kaolinite clay**
Jude Lori Saint Rome, Mohammed Almarshoud and Kyle A. Riding
- **Microstructure of chemically activated gamma-dicalcium silicate**
Warda Ashraf and Jan Olek
- **Evaluation of pozzolanic activity of reclaimed and remediated Ashes**
Saif Al-Shmaisani, Ryan Kalina, Maria Juenger and Raissa Ferron
- **Modeling the local structure of ground granulated blast-furnace slag by combining multiple computational tools**
Kai Gong, Ongun Özçelik and Claire White
- **Investigation of the mass transport properties of ACMs,**
Mehdi Khanzadeh Moradillo, Amir Behravan, and M. Tyler Ley



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The Cements Division of

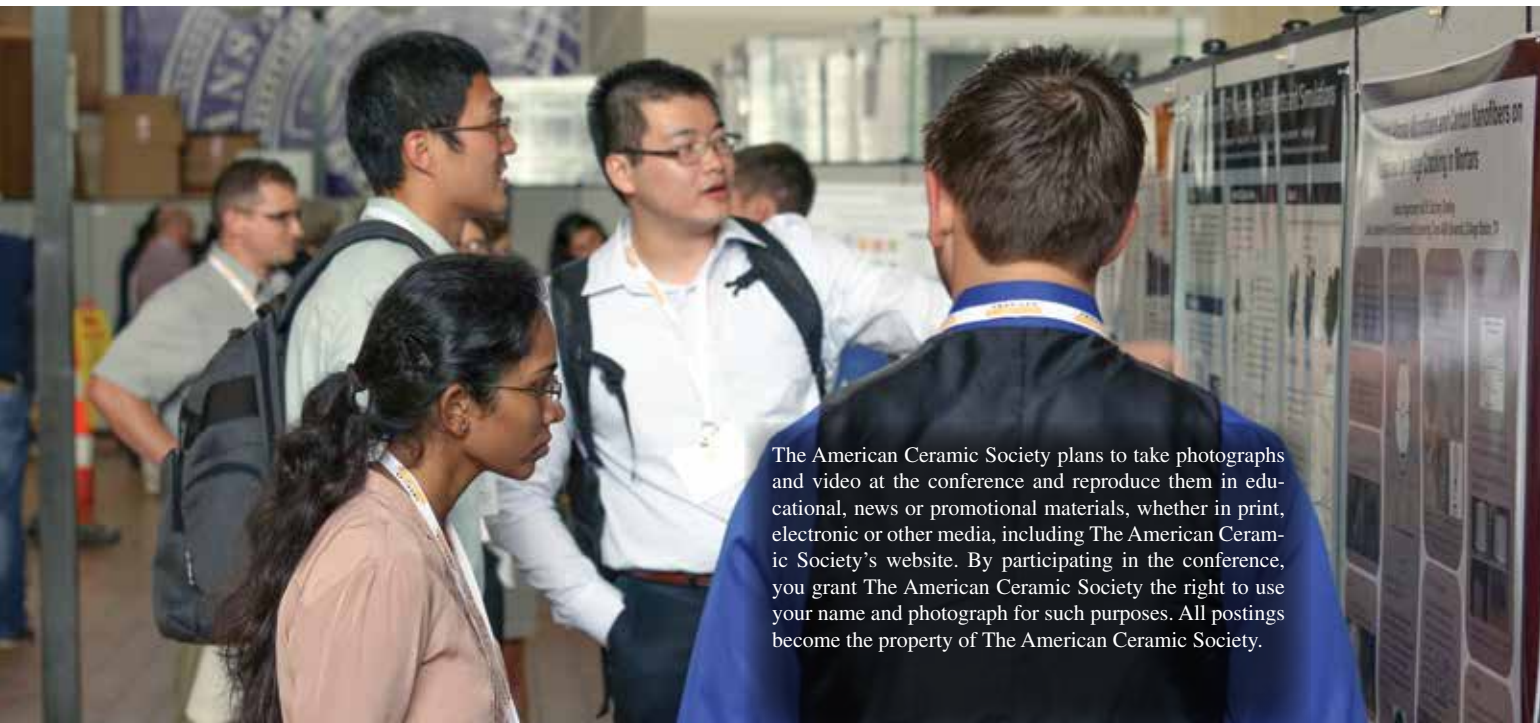


FINAL PROGRAM

8th Advances in Cement-Based Materials (Cements 2017)

JUNE 26-28, 2017

Georgia Tech | Bill Moore Student Success Center | Atlanta, Georgia



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MONDAY, JUNE 26, 2017

President's A/B	
12:30 – 12:50 pm	Welcome and Introduction
12:50 – 1:50 pm	<i>Enabling low-energy post-combustion CO₂ capture via advanced separation systems</i> , Ryan Lively
1:50 – 2:15 pm	<i>Carbon dioxide transformation potential using microalgae</i> , Edgar Martínez and Gabriel Vargas
2:15 – 2:40 pm	<i>Low-lime calcium silicate cement: Reaction products and their properties</i> , Warda Ashraf , Jan Olek , Jitendra Jain and Anuj Seth
20 Minute Break	
President's A/B MODERATOR: Paramita Mondal	
3:00 – 4:20 pm	Student and Young Professional Showcase <i>Creep and relaxation of early-age cement paste associated with stress-induced dissolution of hydrates</i> , Xiaodan Li , Zachary Grasley and Tyler Ley <i>In situ nanoscale measurement of gypsum dissolution rates by digital holographic microscopy</i> , Pan Feng , Jeffrey Bullard , Alexander Brand and Lei Chen <i>Characterization of amorphous calcium carbonate and pore solution during accelerated carbonation of alkali-activated slag</i> , Eric McCaslin and Claire White <i>Pore structure refinement of cement paste incorporating nanosilica: Study with dual beam SEM/FIB</i> , Seungmin Lim and Shiho Kawashima

President's C/D	
3:00 – 4:40 pm	Student and Young Professional Showcase <i>Study of the thixotropic behavior of fresh cement paste modified with micro- and nano-sized materials/particles</i> , Piyush Lunkad and Dimitri Feys <i>Can the resistance of alternative cementitious binder systems to ASR be assessed by AMBT?</i> Prasanth Alapati and Kimberly Kurtis

<i>Crushing behavior of foam concrete</i> , Yu Song , Chuanyue Shen and David Lange
<i>Study of sulfate resistance of carbonated low-lime calcium silicate systems</i> , Raikhan Tokpatayeva , Jan Olek and Jitendra Jain
<i>Effect of reclaimed and remediated ashes on concrete and mortar performance</i> , Ryan Kalina , Saif Al-Shmaisani , Maria Juenger and Raissa Ferron

20 Minute Break	
Press A/B	
5:00 – 7:00 pm	Poster Session
Tech Rec	
7:00 – 9:00 pm	Student Reception

TUESDAY, JUNE 27, 2017

DURABILITY President's A/B MODERATOR: Kyle Riding	
8:20 – 9:40 am	<i>Evaluation of the porosity gradient in a cementitious waste form after carbonation</i> , Janelle Branch , Peng Zhang , Andrew Garrabrants and David Kosson <i>The role of environmental conditions on the rate of carbonation and leaching from a cementitious waste Form</i> , Peng Zhang , Janelle Branch , Andrew Garrabrants , Rossane Delapp , Ofra Klein-Bendavid and David Kosson <i>Selected durability characteristics of geopolymer mortars produced from fly ash, ground glass fiber and glass powder</i> , Hassan Rashidian and Prasad Rangaraju <i>Effect of carbonation on the volume change mechanisms of alkali-activated slag</i> , Hailong Ye and Aleksandra Radlinska

NOVEL AND SUSTAINABLE MATERIALS President's C/D MODERATOR: Chris Schearer	
8:20 – 9:40 am	<i>Analytical and computational analysis of strength properties of geopolymer composites</i> , Amrita Kataruka , Erman Guleryuz , Seid Koric , Waltraud M. Kriven and Ange-Therese Akono <i>Nanoscale modelling and simulation of metakaolin geopolymer binders</i> , Francesca Lollo , Enrico Masoero , Hegoi Manzano and Maria Chiara Bignozzi <i>Effect of different ingredients of UHPC on modulus of elasticity using response surface modelling</i> , Mohammad Ali Mosaberpanaah and Ozgur Eren <i>Bio-inspired cementitious material: Effect of biopolymers on calcium-silicate-hydrate</i> , Mahsa Kamali and Ali Ghahremaninezhad

20 Minute Break	
DURABILITY President's A/B MODERATOR: Pranoy Suraneni	
10:00 – 10:40 am	Keynote: <i>Evaluation of slag and Portland cement concretes exposed to sulfate solutions for 38 years</i> , R. Doug Hooton
20 Minute Break	
11:00 am – 12:20 pm	<i>Carbonation of Portland Limestone Cement (PLC) concrete systems</i> , Jose Garcia , Nicolas Tiburzi , Kevin Folliard and Thanos Drimalas <i>Characterization and mechanism simulation of Alkali-Silica Reaction in Recycled Glass Mortar Samples</i> , Shuaicheng Guo and Qingli Dai <i>The volume change and damage in cement paste exposed to CaCl₂ solution</i> , Chunyu Qiao , Prannoy Suraneni and Jason Weiss <i>New insights into DEF damage via nonlinear acoustics</i> , Mehdi Rashidi , Alvaro Paul , Jin-Yeon Kim , Laurence Jacobs and Kimberly Kurtis

NOVEL AND SUSTAINABLE MATERIALS President's C/D MODERATOR: David Corr	
11:00 am – 12:20 pm	<i>Acid resistance of slag-based alkali-activated cements with heavy metals</i> , Juan Pablo Gevaudan , Alejandro Caicedo-Ramirez , Mark Hernandez and Wil V. Srubar <i>Effect of ITZ on elastic modulus of CNF reinforced cement concrete based on numerical simulation</i> , Xingyi Zhu , Yuan Gao , David J. Corr , Maria S. Konsta-Gdoutos and Surendra P. Shah <i>Where does nitrogen go in photocatalytic cement?</i> Qingxu Jin , Emily Saad , Michael Vanderzwaag , Timothy Reeve , Yuanzhi Tang and Kimberly Kurtis <i>Effect of water on the 14Å tobermorite-graphene interface via molecular dynamics simulations</i> , Baig Al Muhit and Florence Sanchez
12:20 – 1:40 pm	Lunch on your own

NOVEL AND SUSTAINABLE MATERIALS President's A/B MODERATOR: Joe Biernacki	
1:40 – 3:00 pm	<i>Fly ash particle characterization and performance prediction within concrete</i> , Tyler Ley , Taehwan Kim , Jeff Davis and Shinhyu Kang <i>A new pozzolanic test for supplementary cementitious materials</i> , Prannoy Suraneni , Vahid Jafari Azad , Burkan Isgor and Jason Weiss <i>The role of w/cm on the early age hydrating kinetics of cement paste</i> , Aida Margarita Ley Hernandez , Dimitri Feys and Aditya Kumar <i>Controlling cement hydration through the molecular structure of comb copolymer superplasticizers</i> , Delphine Marchon , Patrick Juilland , Emmanuel Gallucci , Lukas Frunz and Robert J. Flatt

HYDRATION President's C/D MODERATOR: Shiho Kawashima	
1:40 – 3:00 pm	<i>Using cellulose nanocrystals (CNCs) with Portland cements</i> <i>The influence of aluminate phases on hydration</i> , Tengfei Fu , Prannoy Suraneni , Jeffery Youngblood , Francisco Montes , Pablo Zavattieri , Robert Moon and Jason Weiss <i>Pareto analysis of the strength, durability, and sustainability of Portland cements</i> , Chengcheng Tao , Benjamin Watts , Christopher Ferraro and Forrest Masters <i>Effect and mechanism of colloidal silica sol on micro-structure and properties of the cement-based materials as compared to nano-silica powder with agglomerates in micron-scale</i> , Deyu Kong , Linhai Wang , Long Wang , David Corr , Wengui Li and Surendra Shah <i>Clinker weathering and impact on cement performance</i> , Dorota Kazmierczak , Richard Sibbick and Silva Denise

20 Minute Break	
NOVEL AND SUSTAINABLE MATERIALS President's A/B MODERATOR: Matt D'Ambrosia	
3:20 – 4:40 pm	<i>Mechanisms of sulfate attack in alkali-activated slag</i> , Kai Gong and Claire White <i>Molecular dynamics study on the mechanical and fracture properties of geopolymer binders</i> , Yue Cui , Erman Guleryuz , Waltraud Kriven , Seid Koric and Ange-Therese Akono <i>Geopolymer composites for construction: From micro- to macro-scale</i> , Kaushik Sankar , Peter Stynoski , Waltraud Kriven and Ghassan Al-Chaar <i>A synergistic powers-brownyard, reaction kinetics, and thermodynamic model for phase and pore structure interpretation of blended cements</i> , Deborah Glosser , Vahid Jafari Azad , Prannoy Suraneni , O. Burkan Isgor and W. Jason Weiss

HYDRATION President's C/D MODERATOR: Jeff Bullard	
3:20 – 4:40 pm	<i>Understanding the nanoscale structure, mechanics, hydration, and organic interfaces of calcium sulfate phases using an accurate force field</i> , Ratan Mishra , Robert Flatt and Hendrik Heinz <i>All-atom models of tobermorite 11 Å and 14 Å – benchmarks for realistic modelling of C-S-H</i> , Tariq Jamil , Ratan K. Mishra , Robert J. Flatt and Hendrik Heinz <i>Direct observation of the evolution of microstructure and chemical composition of C3S hydration</i> , Qinang Hu , Tyler Ley , Taehwan Kim , Mohamed Aboustait , Massoud Moradian , Volker Rose and Robert Winarski <i>Quantifying the dissolution rates of tricalcium aluminate in water with in situ digital holographic microscopy</i> , Alexander Brand and Jeffrey Bullard

20 Minute Break	
Clary Theater	
5:00 – 5:30 pm	Business Meeting
5:30 – 6:30 pm	Della Roy Lecture: <i>Characterization of cementitious materials using x-ray synchrotron radiation: What we know, what we don't know, and what we want to know</i> Paulo Monteiro ; University of California, Berkeley
Hall of Success	
6:30 – 8:00 pm	Della Roy Reception

WEDNESDAY, JUNE 28, 2017

RHEOLOGY President's A/B MODERATOR: Alex Brand	
8:30 – 9:10 am	Keynote: <i>Machine learning of admixture design</i> , Newell Washburn , Aditya Menon , Chetali Gupta , Kun Zhang and Barnabas Poczos
20 Minute Break	
9:30 – 10:50 am	<i>Characterization of polycarboxylate ethers superplasticizers: insight on polydispersity</i> , Giulia Gelardi , Nicolas Sanson , Gergely Nagy and Robert J Flatt <i>The kinetics of cement structural build-up modified with clays and viscosity modifying agents</i> , Siwei Ma and Shiho Kawashima <i>Modeling and rheology of cement paste for 3-D printing applications</i> , Abdul Salam Mohammad , Babajide Onanuga and Joseph Biernacki <i>Digital fabrication with concrete: Current activities at ETH Zurich</i> , Timothy Wangler , Ena Lloret-Fritschi , Lex Reiter , Fabio Gramazio , Matthias Kohler , Norman Hack , Mathias Bernhard , Andrei Jipa , Benjamin Dillenburger and Robert Flatt

SENSING President's C/D MODERATOR: Sonia Li	
9:30 – 10:50 am	<i>Real-time monitoring of the dehydration behavior of an industrial developed CAC-based system by in-situ combination of μ-XRD2 & DTA</i> , Nadja Wichtner , Stefan Käßner , Christoph Berthold and Klaus G. Nickel <i>Analysis of blended cements using an iterative rietveld-PONKCS technique</i> , Yuriy Stetsko , Natalia Shanahan , Harvey Deford and Abla Zayed <i>Passive wireless sensors for monitoring behavior of recycled aggregate concrete</i> , Ruofei Zou and David Lange

10 Minute Break	
RHEOLOGY President's A/B MODERATOR: Newell Washburn	
11:00 am – 12:20 pm	<i>Control flow concrete</i> Danila Ferraz , Elizabeth Burns and Klaus-Alexander Rieder <i>Assessing the influence of shotcrete application on the mechanical performance of macrosynthetic fiber-reinforced concrete</i> , Nicholas Claggett and Christopher Shearer <i>Particle size distribution of the lubrication layer of highly workable concrete</i> , Daniel Galvez-Moreno and Dimitri Feys <i>Self-compacting concrete and hydrophobic modified cellulose fibers</i> , Kristen Sherman

SENSING President's C/D MODERATOR: Qinang Hu	
11:00 am – 12:20 pm	<i>Salicylic acid-methanol extraction of aluminosilicate gel, dipobrato sarbapalli</i> , Xu Chen , Leslie Struble and Paramita Mondal <i>Damage in concrete in terms of microscopic density changes</i> , Pavitra Murru , Zachary Grasley , K.R. Rajagopal , P. Alagappan <i>The molecular origins of time-dependent deformation phenomena in calcium-silicate-hydrates</i> , Ali Morshedifard and Mohammad Javad Abdolhosseini Qomi <i>High-temperature self-healing geothermal well cement composites</i> , Tatiana Pyatina and Toshifumi Sugama <i>Water dynamics of cement paste prepared with nano-silica and Portland cement using quasi elastic neutron scattering</i> , Kunal Kupwade-Patil , Ali Bumajdad , Abdullah Jamsheer and Oral Buyukozturk