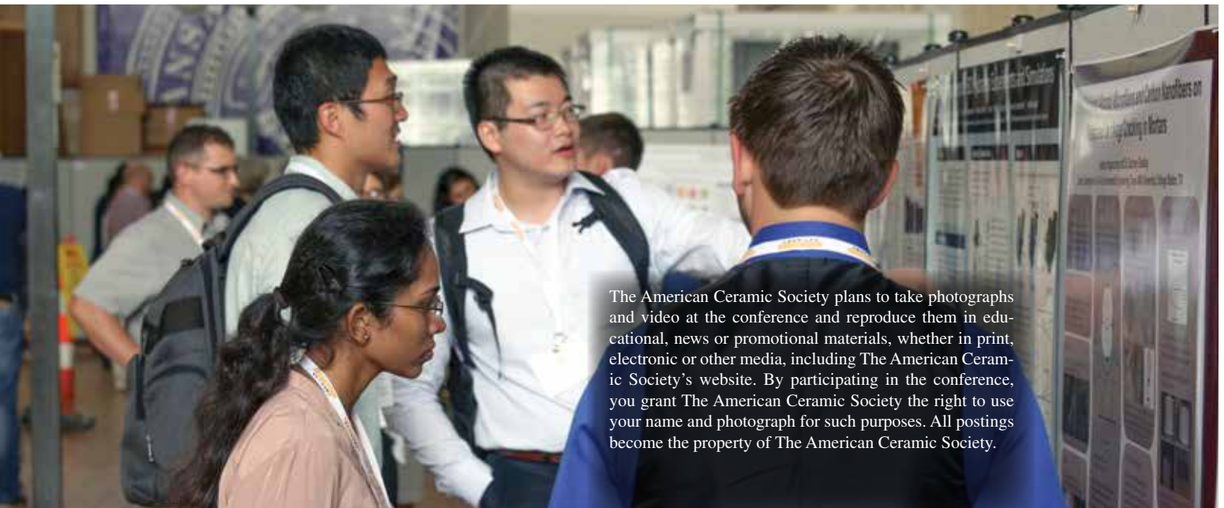
POSTER SESSION

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
- ***Controlling cement hydration through the molecular structure of comb copolymer superplasticizers***
  Delphine Marchon, Patrick Juilland, Emmanuel Gallucci, Lukas Frunz and Robert J. Flatt
- ***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
- ***Efficiency of recycled fine aggregates for internal curing of mortar to eliminate aotugenous shrinkage***
  Li Zhen, Liu Jiaping, Xiao Jianzhuang and Tian Qian
- ***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 consituent 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
- ***A synergistic powers-brownyard, reaction kinetics, and thermodynamic model for phase and pore structure interpretation of blended cements***
  Deborah Glosser, Vahid Jafari Azad, Prannoy Suraneni, O. Burkan Isgor and W. Jason Weiss
- ***Wear and strength characteristics of nano-engineered crumbed-rubber concrete***
  Jiaxin Chen, Caroline Johnson, Sakdirat Kaewunruen and Ange-Therese Akono
- ***New insights into DEF damage via nonlinear acoustics***
  Mehdi Rashidi, Alvaro Paul, Jin-Yeon Kim, Laurence Jacobs and Kimberly Kurtis
- ***Extending benefits of self-consolidating concrete by incorporating synthetic fibers***
  Abhishek Master, Dongshuo Ji and David Lange
- ***Field investigation of the mass transport properties of ACMs***
  Amir Behravan, M. Tyler Ley and Mehdi Khanzadeh Moradllo
- ***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



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FINAL PROGRAM

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

JUNE 26-28, 2017

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

ceramics.org/cements2017

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The Cements Division of
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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 *Enabling low-energy post-combustion CO_2 capture via advanced separation systems*, **Ryan Lively**

1:50 – 2:15 pm *Carbon dioxide transformation potential using microalgae*, **Edgar Martínez** and **Gabriel Vargas**

2:15 – 2:40 pm *Microstructure of chemically activated gamma-dicalcium silicate*, **Warda Ashraf** and **Jan Olek**

20 Minute Break

President's A/B

3:00 – 4:20 pm **Student and Young Professional Showcase**

Creep and relaxation of early-age cement paste associated with stress-induced dissolution of hydrates, **Xiaodan Li**, **Zachary Grasley** and **Tyler Ley**

In situ nanoscale measurement of gypsum dissolution rates by digital holographic microscopy, **Pan Feng**, **Jeffrey Bullard**, **Alexander Brand** and **Lei Chen**

Characterization of amorphous calcium carbonate and pore solution during accelerated carbonation of alkali-activated slag, **Eric McCaslin** and **Claire White**

Pore structure refinement of cement paste incorporating nanosilica: Study with dual beam SEM/FIB, **Seungmin Lim** and **Shiho Kawashima**

President's C/D

3:00 – 4:40 pm **Student and Young Professional Showcase**

Study of the thixotropic behavior of fresh cement paste modified with micro- and nano-sized materials/particles, **Piyush Lunkad** and **Dimitri Feys**

Can the resistance of alternative cementitious binder systems to ASR be assessed by AMBT? **Prasanth Alapati** and **Kimberly Kurtis**

Crushing behavior of foam concrete, **Yu Song**, **Chuanyue Shen** and **David Lange**

Study of sulfate resistance of carbonated low-lime calcium silicate systems, **Raikhan Tokpatayeva**, **Jan Olek** and **Jitendra Jain**

Effect of reclaimed and remediated ashes on concrete and mortar performance, **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

8:20 – 9:40 am *Evaluation of the porosity gradient in a cementitious waste form after carbonation*, **Janelle Branch**, **Peng Zhang**, **Andrew Garrabrants** and **David Kosson**

The role of environmental conditions on the rate of carbonation and leaching from a cementitious waste Form, **Peng Zhang**, **Janelle Branch**, **Andrew Garrabrants**, **Rossane Delapp**, **Ofra Klein-Bendavid** and **David Kosson**

Selected durability characteristics of geopolymer mortars produced from fly ash, ground glass fiber and glass powder, **Hassan Rashidian** and **Prasad Rangaraju**

Effect of carbonation on the volume change mechanisms of alkali-activated slag, **Hailong Ye** and **Aleksandra Radlinska**

NOVEL AND SUSTAINABLE MATERIALS | President's C/D

8:20 – 9:40 am *Analytical and computational analysis of strength properties of geopolymer composites*, **Amrita Kataruka**, **Erman Guleryuz**, **Seid Koric**, **Waltraud M. Kriven** and **Ange-Therese Akono**

Nanoscale modelling and simulation of metakaolin geopolymer binders, **Francesca Lolli**, **Enrico Masoero**, **Hegoi Manzano** and **Maria Chiara Bignozzi**

Effect of different ingredients of UHPC on modulus of elasticity using response surface modelling, **Mohammad Ali Mosaberpanaah** and **Ozgur Eren**

Bio-inspired cementitious material: Effect of biopolymers on calcium-silicate-hydrate, **Mahsa Kamali** and **Ali Ghahremaninezhad**

20 Minute Break

DURABILITY | President's A/B

10:00 – 10:40 am **Keynote:** *Evaluation of slag and Portland cement concretes exposed to sulfate solutions for 38 years*, **R. Doug Hooton**

20 Minute Break

11:00 am – 12:20 pm *Carbonation of Portland Limestone Cement (PLC) concrete systems*, **Jose Garcia**, **Nicolas Tiburzi**, **Kevin Folliard** and **Thanos Drimalas**

Characterization and mechanism simulation of Alkali-Silica Reaction in Recycled Glass Mortar Samples, **Shuaicheng Guo** and **Qingli Dai**

The volume change and damage in cement paste exposed to CaCl2 solution, **Chunyu Qiao**, **Prannoy Suraneni** and **Jason Weiss**

NOVEL AND SUSTAINABLE MATERIALS | President's C/D

11:00 am – 12:20 pm *Acid resistance of slag-based alkali-activated cements with heavy metals*, **Juan Pablo Gevaudan**, **Alejandro Caicedo-Ramirez**, **Mark Hernandez** and **Wil V. Srubar**

Effect of ITZ on elastic modulus of CNF reinforced cement concrete based on numerical simulation, **Xingyi Zhu**, **Yuan Gao**, **David J. Corr**, **Maria S. Konsta-Gdoutos** and **Surendra P. Shah**

Where does nitrogen go in photocatalytic cement? **Qingxu Jin**, **Emily Saad**, **Michael Vanderzwaag**, **Timothy Reeve**, **Yuanzhi Tang** and **Kimberly Kurtis**

Effect of water on the 14Å tobermorite-graphene interface via molecular dynamics simulations, **Baig Al Muhit** and **Florence Sanchez**

12:20 – 1:40 pm **Lunch on your own**

NOVEL AND SUSTAINABLE MATERIALS | President's A/B

1:40 – 3:00 pm *Fly ash particle characterization and performance prediction within concrete*, **Tyler Ley**, **Taehwan Kim**, **Jeff Davis** and **Shinhyu Kang**

A new pozzolanic test for supplementary cementitious materials, **Prannoy Suraneni**, **Vahid Jafari Azad**, **Burkan Isgor** and **Jason Weiss**

Evaluation of pozzolanic activity of reclaimed and remediated Ashes, **Saif Al-Shmaisani**, **Ryan Kalina**, **Maria Juenger** and **Raissa Ferron**

The role of w/cm on the early age hydrating kinetics of cement paste, **Aida Margarita Ley Hernandez**, **Dimitri Feys and Aditya Kumar**

HYDRATION | President's C/D

1:40 – 3:00 pm *Using cellulose nanocrystals (CNCs) with Portland cements – The influence of aluminate phases on hydration*, **Tengfei Fu**, **Prannoy Suraneni**, **Jeffery Youngblood**, **Francisco Montes**, **Pablo Zavattieri**, **Robert Moon** and **Jason Weiss**

Pareto analysis of the strength, durability, and sustainability of Portland cements, **Chengcheng Tao**, **Benjamin Watts**, **Christopher Ferraro** and **Forrest Masters**

Effect and mechanism of colloidal silica sol on microstructure and properties of the cement-based materials as compared to nano-silica powder with agglomerates in micron-scale, **Deyu Kong**, **Linhai Wang**, **Long Wang**, **David Corr**, **Wengui Li** and **Surendra Shah**

Clinker weathering and impact on cement performance, **Dorota Kazmierczak**, **Richard Sibbick** and **Silva Denise**

20 Minute Break

NOVEL AND SUSTAINABLE MATERIALS | President's A/B

3:20 – 4:40 pm *Modeling the local structure of ground granulated blast-furnace slag by combining multiple computational tools*, **Kai Gong**, **Ongun Özçelik** and **Claire White**

Molecular dynamics study on the mechanical and fracture properties of geopolymer binders, **Yue Cui**, **Erman Guleryuz**, **Waltraud Kriven**, **Seid Koric** and **Ange-Therese Akono**

Low-lime calcium silicate cement: Reaction products and their properties, **Warda Ashraf**, **Jan Olek**, **Jitendra Jain** and **Anuj Seth**

Geopolymer composites for construction: From micro- to macro-scale, **Kaushik Sankar**, **Peter Stynoski**, **Waltraud Kriven** and **Ghassan Al-Chaar**

HYDRATION | President's C/D

3:20 – 4:40 pm *Understanding the nanoscale structure, mechanics, hydration, and organic interfaces of calcium sulfate phases using an accurate force field*, **Ratan Mishra**, **Robert Flatt** and **Hendrik Heinz**

All-atom models of tobermorite 11 Å and 14 Å – benchmarks for realistic modelling of C-S-H, **Tariq Jamil**, **Ratan K. Mishra**, **Robert J. Flatt** and **Hendrik Heinz**

Direct observation of the evolution of microstructure and chemical composition of C3S hydration, **Qinang Hu**, **Tyler Ley**, **Taehwan Kim**, **Mohamed Aboustait**, **Massoud Moradian**, **Volker Rose** and **Robert Winarski**

Quantifying the dissolution rates of tricalcium aluminate in water with in situ digital holographic microscopy, **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:** *Characterization of cementitious materials using x-ray synchrotron radiation: What we know, what we don't know, and what we want to know* **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

8:30 – 9:10 am **Keynote:** *Machine learning of admixture design*, **Newell Washburn**, **Aditya Menon**, **Chetali Gupta**, **Kun Zhang** and **Barnabas Poczos**

20 Minute Break

9:30 – 10:50 am *Characterization of polycarboxylate ethers superplasticizers: insight on polydispersity*, **Giulia Gelardi**, **Nicolas Sanson**, **Gergely Nagy** and **Robert J Flatt**

The kinetics of cement structural build-up modified with clays and viscosity modifying agents, **Siwei Ma** and **Shiho Kawashima**

Modeling and rheology of cement paste for 3-D printing applications, **Abdul Salam Mohammad**, **Babajide Onanuga** and **Joseph Biernacki**

Digital fabrication with concrete: Current activities at ETH Zurich, **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

9:30 – 10:50 am *Real-time monitoring of the dehydration behavior of an industrial developed CAC-based system by in-situ combination of μ-XRD2 & DTA*, **Nadja Wichtner, Stefan Käßner, Christoph Berthold and Klaus G. Nickel**

Water dynamics of cement paste prepared with nano-silica and Portland cement using quasi elastic neutron scattering, **Kunal Kupwade-Patil**, **Ali Bumajdad**, **Abdullah Jamsheer** and **Oral Buyukozturk**

Analysis of blended cements using an iterative rietveld-PONKCS technique, **Yuriy Stetsko**, **Natallia Shanahan**, **Harvey Deford** and **Abla Zayed**

Passive wireless sensors for monitoring behavior of recycled aggregate concrete, **Ruofei Zou** and **David Lange**

10 Minute Break

RHEOLOGY | President's A/B

11:00 am – 12:20 pm *Control flow concrete Danila Ferraz*, **Elizabeth Burns** and **Klaus-Alexander Rieder**

Assessing the influence of shotcrete application on the mechanical performance of macrosynthetic fiber-reinforced concrete, **Nicholas Claggett** and **Christopher Shearer**

Particle size distribution of the lubrication layer of highly workable concrete, **Daniel Galvez-Moreno** and **Dimitri Feys**

Self-compacting concrete and hydrophobic modified cellulose fibers, **Kristen Sherman**

SENSING | President's C/D

11:00 am – 12:20 pm *Salicylic acid-methanol extraction of aluminosilicate gel, dipobrato sarbapalli*, **Xu Chen**, **Leslie Struble** and **Paramita Mondal**

Damage in concrete in terms of microscopic density changes, **Pavitra Murru**, **Zachary Grasley**, **K.R. Rajagopal**, **P. Alagappan**

The molecular origins of time-dependent deformation phenomena in calcium-silicate-hydrates, **Ali Morshedifard** and **Mohammad Javad Abdolhosseini Qomi**

High-temperature self-healing geothermal well cement composites, **Tatiana Pyatina** and **Toshifumi Sugama**