- 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, Chengsheng 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, Pranoy Suraneni and W. Jason Weiss

- Prediction of fly ash characterization and performance using ASEM analysis
  Shinyu Kang, Taehwan Kim, Tyler Ley and Jeff Davis

- Computational and experimental analysis of mechanical and transport properties of rubberized concrete
  Ruoxi Si, Qingli Dai and Jiaqing Wang

- Laboratory performance of rubber-modified self-consolidating and ultra-high performance concrete
  Ruoxi 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. Aghian, Dimtin Fays 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 Raiychandran and S. Kothandaraman

- Evaluation of bond strength between newly-cast concrete and pre-existing substrate concrete using third-point flexural bond test
  Zhongqi 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
  Danilo Guttet, Tanja Jamil, Ratan K. Mishra and Hendrik Heinz

- Wear and strength characteristics of nano-engineered crumbbed-rubber concrete
  Jiaxin Chen, Caroline Johnson, Sakdrir 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 Lai Saint Rome, Mohammed Almanshor and Kyle A. Riding

- Microstructure of chemically activated gamma-dicalcium silicate
  Sajid 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 Ozceplik and Claire White

- Investigation of the mass transport properties of ACMs
  Mehdi Khanzadeh Moradstolo, Amir Behravan, and M. Tyler Ley

**POSTER SESSION**

**Monday, June 26, 2017**

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**Student Reception**

7:00 – 9:00 pm

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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

Sponsored by:
Welcome and Introduction
Enabling low-energy post-combustion CO2 capture via advanced separation systems, Ryan Lively
Carbon dioxide transformation potential using microalgae, Edgar Martinez and Gabriel Vargas
Low-tour calcium silicate cement reaction products and their properties, Ward Ashraf, Jan Olek, Jentrina Jain and Anuj Seth

President’s A/B
5:00 – 7:00 pm
20 Minute Break

MODERATOR: Paramita Mondal
Student and Young Professional Showcase
Creep and relaxation of early-age cement paste associated with stress-induced dissolution of bioglasses, 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 carbonates 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/EB. Seungmin Lim and Shiho Kawaiashima

President’s C/D
3:00 – 4:00 pm

MODERATOR: Dimitry Feys
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 Dimitry Feys
Can the resistance of alternative cementitious binder systems to ASR be assessed by AMIT? Prashant Alapati and Kimberly Kurtis
Crushing behavior of fram concrete, Tu Song, Chunyue Shen and Daniel Love
Study of sulfate resistance of carbonated low-tour calcium silicate systems, Raikhan Toktpataya, Jan Olek and Jentrina Jain
Effect of reclaimed and remediated ashes on concrete and mortar performance, Ryan Kalina, Saif Al-Shmaisani, Maria Juenger and Raisa 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
Analysis 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, Rosanne Delapp, Olfa 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, Haliong Ye and Aleksandra Radlinskta

20 Minute Break
Clary Theater
10:00 – 10:30 am

MODERATOR: Joe Biemacki
Fly ash particle characterization and performance prediction within concrete, Tim Ley, Thaewrim Kim, Jeff Davis and Shinhyou Kang
A new pazardjian test for supplementary cementitious materials, Prannoy Sanueni, Vahid Jahaf Azad, Burkan Igorg and Jason Weiss
The role of w/cm on the early hydrating kinetics of cement pastes, Aida Margarita Ley Hernandez, Dimitry Feys and Aditya Kumar
Controlling cement hydration through the molecular structure of comb copolymer superplasticizers, Delphine Marchon, Patrick Juliard, Matteo Gallucci, Lukas Frunz and Robert J. Flatt

MODERATOR: Scott Silcox, Schaefer
HYDRATION | President’s C/D | MODERATOR: Shio Kawashima
1:40 – 3:00 pm
Using cellulose nanocrystals (CNC) with Portland cements. The influence of alumina hydrates on hydration, Tengfei Fu, Prannoy Sanueni, Jeffery Youngblood, Francisco Montes, Pablo Zavattieri, Robert Moon and Jason Weiss
Pareto analysis of the strength, durability, and sustainability of Portland cements, Chenghong Chi, Benjamin Watts, Christopher Ferrarero 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, Linghai Wang, Long Wang, David Qian, Jungli Li and Surendra Shah
Chlor alkali weathering and impact on cement performance, Dorota Kazmierczak, Richard Sibick and Silva Denise

20 Minute Break
President’s C/D
5:00 – 5:30 pm

MODERATOR: Matt D’Ambrosia
Mechanisms of sulfate attack in alkali-activated slag Kai Gong and Claire White
Molecular dynamics study on the mechanical and fracture properties of geopolymer binders, Yue Cui, Erman Guleruz, Waltrud Kriven, Seid Koric and Ange-Therese Akono
Geopolymer composites for construction: From micro- to macro-scale, Kaushik Sankar, Peter Stymneck, Waltrud Kriven and Ghasan Al-Chaar
A synergistic powers-browneyard, reaction kinetics, and thermodynamic model for phase and pore structure inter-relationship of blended cements, Deborah Gobishes, Vahid Jahaf Azad, Prannoy Sanueni, O. Burkan Igorg and W. Jason Weiss

MODERATOR: Joseph J. Bullard
NEW AND SUSTAINABLE MATERIALS | President’s A/B | MODERATOR: Shio Kawashima
3:20 – 4:40 pm
Understanding the nanoscale structure, mechanics, hydration and physical interfaces of calcium sulfate phases using an accurate force field, Ramin Mishra, Robert Flatt and Hendrik Heinz
All-alumina models of tobermorite 11 Å and 14 Å - benchmark for realistic modeling of C-S-H, Tarj Jamiel, Rakshan K. Mishra, Robert J. Flatt and Hendrik Heinz
Direct observation of the evolution of microstructure and chemical composition of CSH hydration, Qinang Hu, Tyler Ley, Taewrim Kim, Mohamed Abouesta, Massoud Moradian, Volker Rose and Robert Winarski
Quantifying the dissolution rates of tricalcium aluminate in water in situ digital holographic microscopy, Alexander Brand and Jeffrey Bullard

RHEOLOGY | President’s A/B | MODERATOR: Newell Washburn
11:00 am – 12:20 pm
Control flow concrete Danilo Ferraz, Elizabeth Burns and Klaus-Axel Pettersson
Assessing the influence of thixotropy application on the mechanical performance of macroscopic fiber reinforced concrete, Nicholas Claggett and Christopher Shearer
Particle size distribution of the lubrication layer of highly workable concrete, Daniel Galvez-Moreno and Dimitry Feys
Self-consolidating concretes and hydrophobic modified cellulose fibers, Kristen Sherman

SITTING | President’s A/B | MODERATOR: Qinang Hu
1:00 – 1:30 pm
Salesy acal melmethan extraction of aluminosilicate gels, diprototick carbopallad, Xu Chen, Leslie Struble and Parmida Maahemdi
Damage in concrete in terms of microscopic density changes, Pavitra Murru, Zachary Grasley, K.R. Rajagopal, P. Fagopasen
The molecular origins of time-dependent deformation phenomena in calcium-silicate hydrates, Ali Mosherifian and Mohammad Javad Abbaspour Dehnavi
High temperature self-healing geotextile well cement composites, Tatiana Piyantina and Toshifumi Sugama
Water dynamics of cement paste prepared with nano-silica and Portland cement using elastic neutron scattering, Kunal Kupwade-Patil, All Bambad, Abduljallam Sheems and Oral Buyukozturk

9:30 – 10:05 am
Modeling and rheology of cement paste for 3-D printing applications, Abdul Salam Mohammad, Babajide Onanuga and Joaquin Biemacki
Digital fabrication with concrete: Current activities at ETH Zurich, Timothy Wangen, Elena Loret-Futsch, Lex Reeit, Fabio Gramazio, Matthias Kohler, Norman Hack, Mathias Bernhard, Andrea Jipa, Benjamin Dillenburger and Robert Flatt

9:00 – 10:10 am
Real-time monitoring of the dehybridization of an industrial developed CAC-based system by in-situ combina- tion of AF-XRR & CITA, Nadia Wichtner, Stefan Kallner, Christoph Berthold and Klaus G. Nickell
Analysis of blended cements using an iterative refinement- ROCKMEM V1.0 code, Yuriy Stetsko, Natalia Shananin, Harvey Deford and Abla Zayed
Passive wireless sensors for monitoring behavior of recycled aggregate concrete, Ruofei Zou and David Lange

10 Minute Break