POSTER SESSION

Monday, July 20 | 5:00 – 7:00 pm | Fiedler Atrium

– ***Discerning the mechanism of interaction for organic molecules used as admixtures in portland cement***
Ojas Chaudhari, Ben McComb, Mariah Martinez, Joseph Biernacki, Scott Northrup

– ***Investigation of Aggregate Size Distribution of Concrete by X-Ray Micro Computed Tomography***
Ghazal Sokhansefat, Tyler Ley, Daniel Cook

– ***Portland Cement with Colombian natural fibers***
Henry Colorado

– ***Development of High Strength Radiation Damage-Tolerant Boron Nitride Cement Composite***
Sakineh Ebrahimpourmoghaddam, Vahid Hejazi, Joseph Carazzone, Joseph Miller, Di Chen, Lin Shao, Kenton Whitmire, Rouzbeh Shahsavari

– ***The influence of specific surface area of inert fillers on rheological behavior of filler-water suspensions***
Bruno Daminelli, John Vanderley, Rafael Pileggi

– ***Environmentally friendly mortars with coal fly ashes as cementitious binder***
Gang Xu, Xianming Shi

– ***Impact of the mineralogy and local atomic structure of neat slags on the phase formation in alkali-activated slag pastes***
Kai Gong, Claire White

– ***Impact of Curing Time and Activator Chemistry on the Intrinsic Permeability of Alkali-Activated Pastes***
Catherine Eiben, Anna Blyth, George Scherer, Claire White

– ***Characterization and Treatment of Low-Quality Fly Ash for the Synthesis of Geopolymer Cements***
Juan Pablo Gevaudan, Wil Srubar

– ***Observations on the rheological response of cement pastes subjected to different mixing methods***
Raissa Douglas Ferron, Dongyeop Han

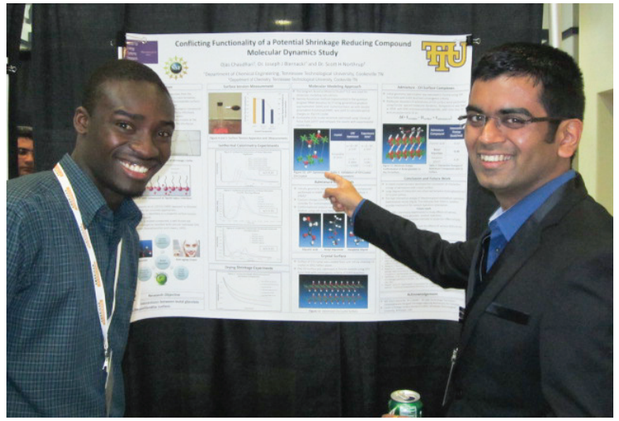
– ***Simulated irreversible desiccation shrinkage associated with cement grain dissolution***
Xiaodan LI, Zachary Grasley, Jeffrey Bullard

– ***Creep and relaxation of concrete caused by ice melting in the pore network***
Xiaodan LI, Zachary Grasley, Syeda Rahman

– ***Effects of polyvinyl alcohol microfibers and carbon nanofibers on restrained shrinkage cracking in mortars***
Joshua Hogancamp, Zachary Grasley

– ***Effect of Decalcification on Permeability in Concrete***
Jeffryd Rose, Zachary Grasley

– ***Compatibility of chemical admixtures with limestone metakaolin ternary blended cement***
Behnaz Zaribaf, Kimberly Kurtis



– ***Direct Comparisons of Experimental and Large-Scale Computational Measurements of Hydrating C3S Particles***
Jeffrey Bullard, Tyler Ley, Ginang Hu, John Hagedorn, Romain Desaymons, Judith Terrill

– ***Ultrasonic Scattering Measurement of Air Voids Distribution in Early-Stage and Hardened Concrete Samples***
Guo Shuaicheng, Xiao Sun, Qingli Dai

– ***A comparison between phase ratios and strength development in OPC produced using alternative fuels***
Sorour Semsari Parapari, Pozhhan Mokhtari, Mehmet Ali Gülgün Melih Papila

– ***Carbonation evaluation of alkali-activated slag concrete***
Sara Ghahramani, Aleksandra Radlinska

– ***Measuring and predicting humidity and temperature profile distribution inside concrete crossties***
Daniel Castaneda, Kyle A. Riding, David A. Lange

– ***Reactivity and reaction products of pure calcium silicates for hydration and carbonation reactions***
Warda Ashraf, Jan Olek

– ***Study of Sulfate Resistance of Carbonated Calcium Silicate Systems***
Raikhan Tokpatayeva, Jan Olek, Vahit Atakan

– ***Physical and Chemical Interaction of Air-Entraining Agents with Paste and Ash***
Lori Tunstall, George Scherer

– ***Multi-scale Characterization of organo-cements using Microscopic Scratch Tests and Statistical Nano-Indentation***
Ange Akono, Kevin Anderson, Leslie Struble

– ***A novel approach to measure the chemical shrinkage of hydrating well cement under elevated temperature and pressure***
Yige Zhang, Catherine Bouillon, Jeffrey Chen

– ***Effects of Aluminum on Synthesized Tobermorite***
Xiaolu Guo, Fanjie Meng, Huisheng Shi, Leslie Struble, William Hunnicutt, Paramita Mondal

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6TH ADVANCES IN CEMENT-BASED MATERIALS

July 20 – 22, 2015

Kansas State University
Manhattan, Kan., USA

final program

Organized by:
The Cements Division of
The American Ceramic Society
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6TH ADVANCES IN CEMENT-BASED MATERIALS July 20 – 22, 2015

Kansas State University Manhattan, Kan., USA

MONDAY, JULY 20, 2015

11:00 am - 5:30 pm	**Registration**
Noon - 4:00 pm	**Tutorial: Service Life Modeling,** Fiedler Auditorium Jacques Marchand, Gianluca Cusatis, Nick Santero
4:00 - 4:30 pm	**Poster Set-up,** Fiedler Atrium
4:30 - 6:30 pm	**Poster Session,** Fiedler Atrium
6:00 - 7:00 pm	**Cements Division Executive Meeting,** Durland Hall, Rm. 1044
7:00 - 8:00 pm	**Student Reception,** Bluemont Hotel

TUESDAY, JULY 21, 2015

Session 1 | CEMENT CHEMISTRY/ HYDRATION | 8:30 – 10:05 am
Fiedler Auditorium

8:30 – 8:35 am	**Open Program / Welcome**, Fiedler Auditorium
8:35 – 8:50 am	***Influence of C-S-H growth morphology on the early-age hydration of C3S,*** Joshua Arnold, Jeffrey Bullard
8:50 – 9:05 am	***Hydrogen tunnelling in Portlandite [Ca(OH)2] under pressure,*** Romain Dupuis, Jorge Dolado, Jose Surga, Andrés Ayuela
9:05 – 9:20 am	***Effect of Induced Stresses on Cement Paste Compositions,*** Christopher Galitz, Zachary Grasley
9:20 – 9:35 am	***Development of Green cement, based on partial replacement of Clinker with limestone powder,*** Yaniv Knop
9:35 – 9:50 am	***Direct three dimensional observations of the microstructure and chemistry of the hydration of C3S,*** Qinang Hu, Tyler Ley, Mohammed Aboustait, Robert Winarski, Volker Rose
9:50 – 10:30 am	**BREAK,** Fiedler Atrium

Session 2 | MODELING | 10:30 – 11:45 am
Fiedler Auditorium

10:30 – 10:45 am	***A mesoscale investigation of the alkali-activation reaction using coarse-grained Monte Carlo simulations,*** Kengran Yang, Claire White
10:45 – 11:00 am	***Creep and relaxation of cement paste associated with stress-induced dissolution of hydrates,*** Xiaodan Li, Zachary Grasley
11:00 – 11:15 am	***Diffusion and simultaneous chemical reaction modeling of sulfate attack in cement paste,*** Pan Feng, Jeffrey Bullard
11:15 – 11:30 am	***Modeling Hydration of C3S with SimBNG,*** George Scherer
11:30 am – 11:45	***Compositional Variability of C-S-H in Cement Hydration Modeling,*** Jeffrey Bullard, George Scherer, Joshua Arnold
Noon – 12:30 pm	**CEMENTS DIVISION MEETING**
12:30 – 1:45 pm	**LUNCH,** (provided) Fiedler Atrium

Session 3 | NANO/ MICROSCALE MATERIAL CHARACTERIZATION
10:30 am – Noon | 2144 Fiedler Hall

10:30 – 10:45 am	***Powers' model and the early-age shrinkage of portland limestone cements,*** Elizabeth Nadelman, Kimberly Kurtis
10:45 – 11:00 am	***Vibration of Fresh Concrete – A New Approach to an Old Concern,*** David A. Lange, Jeremy Koch, Daniel Castenada
11:00 – 11:15 am	***Structure and pozzolanic reactivity of calcined clays in Portland cement blends from solid-state NMR spectroscopy,*** Jørgen Skibsted, Nishant Garg, Zhuo Dai, Kasper Enemark-Rasmussen
11:15 – 11:30 am	***MWCNT reinforced mortars for enhanced durability, strength, and toughness,*** Surendra Shah, Maria Konsta-Gdoutos
11:30 – 11:45 am	***Path dependent failure analysis of cementitious materials using granular micromechanics,*** Payam Poorsolhjouy, Anil Misra
Noon – 12:30 pm	**CEMENTS DIVISION MEETING**
12:30 – 1:45 pm	**LUNCH,** (provided) Fiedler Atrium

Session 4 | DURABILITY | 1:45 – 3:30 pm
Fiedler Auditorium

1:45 – 2:00 pm	***Effect of Curing on Sulfate Resistance Test Results,*** Diana Gagatek, R. Doug Hooton
2:00 – 2:15 pm	***Fundamental Structure-Property Relationships of Superabsorbent Polymers in Ionic Solutions and their Implications for Internal Curing of Concrete,*** Matthew Krafcik, Kendra Erk
2:15 – 2:30 pm	***Thermally Resistant Cement Designs for Geothermal Wellbore Applications,*** Ruixuan Guo, Kolawole Bello, Mileva Radonjic
2:30 – 2:45 pm	***Composition-Rheology Relationships of ASR Gels and Their Effects on the Extent of ASR Damage,*** Asghar Gholizadeh Vayghan, Farshad Rajabipour
2:45 – 3:00 pm	***Advanced Characterization of Alkali-Silica Reaction (ASR) Gel Development in Specially-Prepared Mortar Specimens with Recycled Glass Particles,*** Xiao Sun, Guo Shuaicheng, Qingli Dai
3:00 – 3:15 pm	***Modifications to the Accelerated Mortar Bar Test,*** Farideh Golmakani, R. Doug Hooton
3:15 – 3:30 pm	***Towards an Ideal ASR Performance Test,*** Stephen Salwocki, Farshad Rajabipour
3:30 – 4:00 pm	**BREAK,** Fiedler Atrium

Session 5 | SMART MATERIALS | 1:45 – 3:30 pm
2144 Fiedler Hall

1:45 – 2:00 pm	***Perspective on peptide-inorganic interfaces using ab initio approach,*** Lokendra Poudel, Candan Tamerler, Chamila Dharamawardhana, Anil Misra, Wai-Yim Ching
2:00 – 2:15 pm	***Microstructure-Controlled Synthesis of Novel Cement-Based Membranes,*** Vahid Hejazi, Sakineh Ebrahimpourmoghaddam, Joseph Miller, Rouzbeh Shahsavari
2:15 – 2:30 pm	***Effect of roadside weathering on removal of nitrogen oxides by photocatalytic concrete coatings,*** Clement Cros, Alexandra Terpeluk, Neil Crain, Maria Juenger
2:30 – 2:45 pm	***Dissolution kinetics, solubility, and stability of biogenic calcium carbonate used to enhance properties of porous infrastructure materials,*** Raissa Douglas Ferron, Sarah L. Williams, Mary Jo Kirisits
2:45 – 3:00 pm	***Structure and Properties of Hydrogrossular Series,*** Puja Adhikari, Chamila Dharmawardhana, Wai-Yim Ching
3:00 – 3:15 pm	***Self sensing carbon nanofiber reinforced concrete,*** Maria Konsta-Gdoutos, Emmanuel Gdoutos
3:15 – 3:30 pm	***Quantum Mechanical Metric for Internal Cohesion in Cement Crystals,*** Chamila Dharmawardhana, Anil Misra, Wai-Yim Ching
3:30 – 4:00 pm	**BREAK,** Fiedler Atrium

DELLA ROY LECTURE: **4:00 – 5:00 pm** Fiedler Auditorium
Review of Hamlin Jennings' Contributions to Cements

DELLA ROY RECEPTION & CONFERENCE DINNER (Sponsored by Elsevier) **6:00 – 9:00 pm** Bluemont Hotel

WEDNESDAY, JULY 22, 2015

Session 6 | GEOPOLYMERS | 8:30 – 10:05 am
Fiedler Auditorium

8:30 – 8:35 am	***Open Program / Welcome***
8:35 – 9:05 am	**KEYNOTE:** ***Elucidating the kinetics and thermodynamics of alkali-activated materials using high-energy X-ray and neutron scattering,*** Claire White
9:05 – 9:20 am	***Microstructural changes in alkali-activated slag due to drying and its implication for shrinkage,*** Hailong Ye, Aleksandra Radlinska, Farshad Rajabipour
9:20 – 9:35 am	***Fly-ash based geopolymers: understanding the precursor-to-product composition relationships,*** Trevor Williamson, Maria Juenger, Gaurav Sant
9:35 – 9:50 am	***Effects of Calcium on Setting of Geopolymers,*** Xu Chen, Leslie Struble
9:50 – 10:05 am	***Effect of the Activator Solution and Slag Incorporation on Shrinkage of Alkali Activated Fly Ash/Slag Blended Binders,*** Maryam Hojati, Aleksandra Radlinska
10:05 – 10:30 am	**BREAK,** Fiedler Atrium

Session 7 | ADMIXTURES | 10:30 – 11:45 am
Fiedler Auditorium

10:30 – 10:45 am	***Impact of Diethanolisopropanolamine on Hydration of a ternary system with fly ash and limestone,*** Leslie Jardine, Josephine Cheung, Richard Sibbick, Jeff Nicolich, Joshua Detellis
10:45 – 11:00 am	***Impact of polycarboxylate superplasticizers on poly-phased clinker hydration,*** Delphine Marchon, Patrick Juilland, Lukas Frunz, Marta Palacios, Robert Flatt
11:00 – 11:15 am	***New insight on superplasticizers adsorption from the perspective of competitive adsorption,*** Delphine Marchon, Robert Flatt
11:15 – 11:30 am	***Effects of high dosages of corn starch on high w/c portland cement mortars,*** Anne Werner, Alexis Schad
11:30 – 11:45 am	***Recycling battery waste in Portland cement,*** Henry Colorado
11:45 – 1:15 pm	**LUNCH** (on your own)

Session 8 | ALTERNATIVE CEMENTITIOUS MATERIALS
10:30 – 11:45 am | 2144 Fiedler Hall

10:30 – 10:45 am	***Scanning Transmission X-ray Microscopy Study on Alkali-Activated Biomass-Derived Fly Ash,*** Christopher Shearer
10:45 – 11:00 am	***Relationship between phase assemblage in calcined clay blends and reactivity as SCMs,*** Sarah Taylor-Lange, Maria Juenger, Kyle Riding
11:00 – 11:15 am	***Drinking Water Treatment Residual as a Cement Replacement with Internal Curing Properties,*** John Kevern, Claire Nowasell
11:15 – 11:30 am	***Understanding Calcium Sulfoaluminate Cement-Admixture Interactions,*** Lisa Burris, Kimberly Kurtis
11:30 am – 11:45	***Low temperature belite binder,*** Tim Link, Horst-Michael Ludwig, Frank Bellman, Mohsen ben-Haha
11:45 – 1:15 pm	**LUNCH** (on your own)

Session 9 | MESO/MACROSCALE MATERIAL CHARACTERIZATION
1:15 – 3:00 pm | Fiedler Auditorium

1:15 – 1:45 pm	**KEYNOTE:** ***Rheology: A Powerful Tool to Predict Concrete Pumping Pressure,*** Dimitri Feys
1:45 – 2:00 pm	***Supercritical Drying of Cement,*** Zhidong Zhang, George Scherer
2:00 – 2:15 pm	***The Role of Concrete Maturity in Resistivity-Based Performance Specifications,*** Gita Charmchi, R. Doug Hooton
2:15 – 2:30 pm	***Air void analysis in concrete: State-of-the-art approaches of air measurement and future challenges***, Yu Song, Ruofei Zou, David A. Lange
2:30 – 2:45 pm	***Automated Scanning Electron Microscopy: Systematic Procedure and Application to Particulate Materials,*** Taehwan Kim, M. Tyler Ley, Mohammed Aboustait, Jeffery M. Davis, Jeffery W. Bullard, Pouya Amrollahi
2:45 – 3:00 pm	***Influence of Mix Design Parameters on Dynamic Segregation of Self-Consolidating Concrete***, Dimitri Feys, Aida Margarita Ley Hernandez