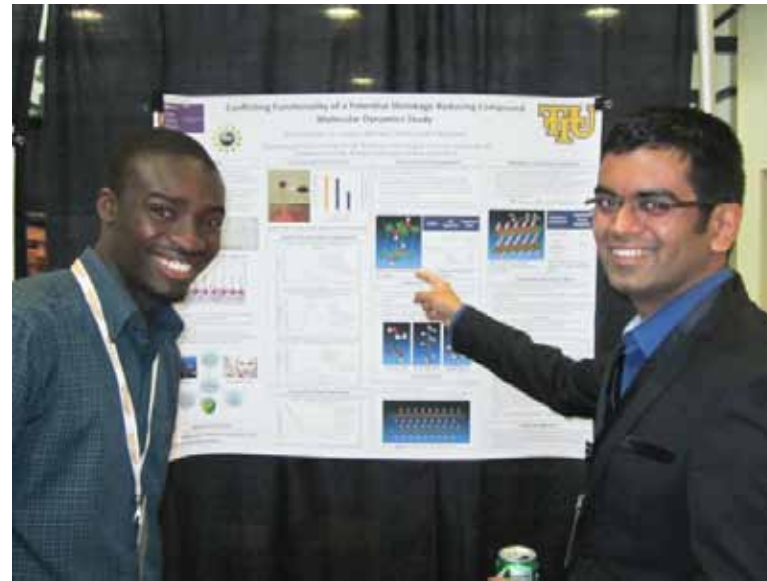


POSTER SESSION

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
- **Building and refractory's cements based on synthesized additives from wastes of industry**
Nickolay Iliukha, Valentina Timofeeva
- **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

advance program

Organized by:
The Cements Division of



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6TH ADVANCES IN CEMENT-BASED MATERIALS July 20 – 22, 2015

Kansas State University Manhattan, Kan., USA

MONDAY, JULY 20, 2015

Noon - 7:00 pm	Registration
Noon - 4:00 pm	Tutorial: Service Life Modeling , Fiedler Auditorium Jacques Marchand, Gianluca Cusatis, Nick Santero
5:00 - 7:00 pm	Poster Session , Fiedler Atrium
7:00 - 8:00 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	Effect of lightweight aggregate properties on its efficiency as internal curing agent , Semion Zhutovsky, Konstantin Kovler
11:30 – 11:45 am	MWCNT reinforced mortars for enhanced durability, strength, and toughness , Surendra Shah, Maria Konsta-Gdoutos
11:45 – Noon	Path dependent failure analysis of cementitious materials using granular micromechanics , Payam Poorsolhjoui, 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 Dharamawardhana, 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 Dharamawardhana, Anil Misra, Wai-Yim Ching
3:30 – 4:00 pm	BREAK , Fiedler Atrium

DELLA ROY LECTURE:	4:00 – 5:00 pm Fiedler Auditorium <i>Review of Hamlin Jennings' Contributions to Cements</i>
DELLA ROY RECEPTION (Sponsored by Elsevier) & CONFERENCE DINNER	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