

Advanced Materials for Sustainable Infrastructure Development 2020

Ventura Beach Marriott
2055 Harbor Boulevard, Ventura, CA, USA



Gordon Research Conference
Cutting-Edge Developments and Characterization of Cement-Based Materials

February 23rd 16:00 – February 28th 9:00
Chairs: Kamal H. Khayat and R. Doug Hooton



Gordon Research Seminar
Concrete Solutions Towards Carbon Neutral Construction by 2050

February 22nd 15:30 – February 23rd 14:30
Chairs: William Wilson and Nima Farzadnia



GRC Description

The objective of this Gordon Research Conference (GRC) is to **bring together leading experts from industry and academia to stimulate discussion** related to new approaches to improving sustainability of cement-based materials and to hear about the latest developments. The effort to improve the sustainability of infrastructure requires development and utilization of less carbon intensive materials as well as extending the service life of infrastructure through design for durability and resilience.

Potential new sustainable material compositions need to be characterized not only for their **physical properties**, but also for their **robustness** in variable construction environments, **compatibility** with other materials, and their **durability** in severe exposures. Due to limited materials availability, environmental conditions, and different levels of technology available in different global regions, there is no single solution to improving sustainability, and there is a need to consider a range of approaches including those that may be incremental as well as potentially disruptive. **Materials professionals, researchers and representatives from infrastructure owners** are encouraged to attend and contribute to the discussion on needs for new approaches.

GRC Application and Registration

In addition to keynote speakers listed in the GRC program, participants are encouraged to submit posters to present their work during three sessions dedicated for poster presentations. Participants can also apply to register without a poster. Registration fees for the GRC include the five-night stay at the Ventura Beach Marriott on February 23rd to 28th as well as all meals and coffee breaks during the GRC and the attendance at the GRC. The fees are \$1,415 for a single room and \$1,180 for a shared room.



GRS Description

Organized in conjunction with the GRC, this Gordon Research Seminar (GRS) aims to gather **graduate students, postdocs and young professionals** to envision and discuss the drastic shifts necessary for the cement and concrete technologies to meet ambitious and necessary sustainability goals. Concrete specialists of tomorrow are invited to present their contributions to the field, including their **vision for the future development of a carbon neutral industry**.

The **call for abstracts is open** to the different fields of cement and concrete science and technology: from novel binders with low-CO₂ footprint and CO₂ sequestering systems, to extending service life of concrete structures, including the recycling and optimal use of resources, the development of highly efficient concrete solutions for specific applications, the life-cycle assessment of these solutions, low-carbon design and construction methods and other outside-the-box carbon-neutral approaches.

Attending this GRS represents an **excellent opportunity for young researchers** not only to **share ideas about the future of concrete**, but also to attend the associated GRC (for which applications are strongly encouraged).

GRS Application and Registration

The seminar chairs will select speakers from abstracts submitted by November 22, 2019. All applications must be received by January 25, 2020. Registration fees for the GRS include the stay at the Ventura Beach Marriott on February 22nd and all meals and coffee breaks during the GRS and the attendance at the GRS. The fees are \$295 for a single room and \$250 for a shared room.

Gordon Research Conference (GRC) Program

Alternative Binders

Discussion **Caijun Shi**
Leader *Hunan University, China*
Keynote **Gaurav Sant**
Speakers *University of California, Los Angeles, USA*
Claire White
Princeton University, USA
Arezki Tagnit-Hamou
Université de Sherbrooke, Canada

Nanostructure of C-S-H and Hydration of Cementitious

Discussion **Paulo Monteiro**
Leader *University of California, Berkeley, USA*
Keynote **Karen Scrivener, Alexandra Ouzia**
Speakers *ÉPFL, Switzerland*
Barbara Lothenbach
EMPA, Switzerland
Peter McDonald
University of Surrey, United Kingdom
Ippei Maruyama
Nagoya University, Japan

Corrosion Science and Mitigation

Discussion **Carolyn Hansson**
Leader *University of Waterloo, Canada*
Keynote **Alberto Sagues**
Speakers *University of South Florida, USA*
Mette Geiker, Klaartje De Weerd, Alisa Machner
Norwegian Uni. of Science and Technology
Ueli Angst
ETH Zurich, Switzerland

Measurement and Control of Rheology

Discussion **Olafur Wallevik**
Leader *Innovation Center Iceland, Iceland*
Keynote **Nicolas Roussel**
Speakers *IFSTTAR, France*
Viktor Mechtcherine
TU Dresden, Germany
Geert De Schutter
Ghent University, Belgium

Dimitri Feys

Missouri Uni. of Science and Tech., USA

Advances in Chemical Admixtures

Discussion **Claude Bédard**
Leader *Euclid Canada, Canada*
Keynote **Robert Flatt**
Speakers *ETH Zurich, Switzerland*
David Myers
GCP Applied Technologies, USA
Jiaping Liu
Southeast University, China

Sustainability and Life Cycle Assessment

Discussion **Vanderley John**
Leader *University of São Paulo, Brazil*
Keynote **Julie Buffenbarger**
Speakers *Beton Consulting Engineers, USA*
Ravindra Gettu
Indian Inst. of Technology Madras, India
Lawrence Sutter
Michigan Technological University, USA
Sean Monkman
CarbonCure Technologies, Canada

Durability and Service Life

Discussion **Jason Weiss**
Leader *Oregon State University, USA*
Keynote **Tracy Marcotte**
Speakers *CVM Professional, USA*
Michael Thomas
University of New Brunswick, Canada
Andreas Leemann
EMPA, Switzerland

Emerging Technologies for Performance Prediction

Discussion **Kimberly Kurtis**
Leader *Georgia Institute of Technology, USA*
Keynote **Mohsen Ben Haha**
Speakers *Heidelberg Cement Tech. Center, Germany*
Nathan Tregger
GCP Applied Technologies, USA
Aditya Kumar
Missouri Uni. of Science and Tech., USA
Nemkumar Banthia
University of British Columbia, Canada

Specialty Materials

Discussion **Surendra Shah**
Leader *Northwestern University, USA*
Keynote **Konstantin Sobolev**
Speakers *University of Wisconsin-Milwaukee, USA*
Christopher Leung
Hong Kong Uni. of Science and Technology
David Lange
Uni. of Illinois at Urbana-Champaign, USA

The GRC Power Hour™

Organisers **Kimberly Kurtis**
Georgia Institute of Technology, USA
Jason Ideker
Oregon State University, USA

Complete program with titles and schedule available at:
<https://www.grc.org/advanced-materials-for-sustainable-infrastructure-development-conference/2020/>

Gordon Research Seminar (GRS) Program

Keynote **Rémi Barbarulo**
Speaker *LafargeHolcim, France*
Discussion **Sabbie Miller**
Leaders *University of California Davis, USA*
Hongyan Ma
Missouri Uni. of Science and Tech., USA
Shiho Kawashima
Columbia University, USA
Mentoring **Mourad Ben Amor**
Speaker *Université de Sherbrooke, Canada*

* Session themes and speakers will be selected from submitted abstracts.

Complete program available at:
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