## Conference Program

### Nanotechnology in Cementitious Materials

**Discussion Leader:** Surendra Shah (Northwestern University, USA)

**Keynote Speaker:**
- Florence Sanchez (Vanderbilt University, USA)
- L. Singh (Central Building Research Institute, India)

### Recycling Concrete

**Discussion Leader:** Chi-sun Poon (Hong Kong Polytechnic University, Hong Kong SAR China)

**Keynote Speaker:**
- Vanderley John (University of Sao Paulo, Brazil)
- Takafumi Noguchi (University of Tokyo, Japan)
- Fernando Martirena (University of Las Villas, Cuba)

### Performance Testing for Concrete

**Discussion Leader:** Carmen Andrada (Polytechnic University of Catalonia, Spain)

**Keynote Speaker:**
- Hans Beushausen (University of Cape Town, South Africa)
- Kimberly Kurtis (Georgia Institute of Technology, USA)

### Hydration and Microstructure of Cementitious Materials

**Discussion Leader:** Paulo Monteiro (University of California, Berkeley, USA)

**Keynote Speaker:**
- John Provis (University of Sheffield, United Kingdom)
- Patrick Juillard (Sika Technology AG, Switzerland)
- Delphine Marchon (University of California, Berkeley, USA)
- Guoqing Geng (Paul Scherrer Institute, Switzerland)

### Digital Construction and Rheology of Concrete

**Discussion Leader:** Nicolas Roussel (IFSTTAR, France)

**Keynote Speaker:**
- Robert Flatt (ETH Zurich, Switzerland)
- Viktor Mechtcherine (TU Dresden, Germany)

### Sustainable Binders

**Discussion Leader:** Karen Scrivener (École Polytechnique Fédérale de Lausanne, Switzerland)

**Keynote Speaker:**
- Shashank Bishnoi (Indian Institute of Technology Delhi, India)
- Unluer Cise (Nanyang Technological University, Singapore)
- Caijun Shi (Hunan University, China)
- Zuhua Zhang (University of Southern Queensland, Australia)

### Ultra High Performance Concrete

**Discussion Leader:** David Lange (University of Illinois at Urbana-Champaign, USA)

**Keynote Speaker:**
- Sébastien Bernardi (LafargeHolcim, France)
- Jiaping Liu (Southeast University, China)

### Mechanical Properties of Concrete

**Discussion Leader:** Zongjin Li (University of Macau, Macau SAR China)

**Keynote Speaker:**
- Christopher Leung (HKUST, Hong Kong SAR China)
- Sarah Billington (Stanford University, USA)
- Bernhard Pichler (Vienna University of Technology, Austria)
- Mateusz Wyrzykowski (EMPA, Switzerland)

### Service Life Prediction of Concrete

**Discussion Leader:** Mark Alexander (University of Cape Town, South Africa)

**Keynote Speaker:**
- Jacques Marchand (SIMCO Technologies, Canada)
- Kefei Li (Tsinghua University, China)
- Andrés Torres-Acosta (Mexico Transport Research Institute, Mexico)

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### Conference Description

The energy consumption of buildings is about 25 to 40% of the total energy consumption of the whole society. Hence, it is important to make buildings energy efficient to achieve the sustainability of the world. The energy efficiency of buildings depends largely on the material employed. With sustainable materials, the ability of future generations to meet their needs will not be compromised by the construction and operation of buildings.

Cement is the largest manufactured product on Earth by mass. Combined with water and mineral aggregates it forms cement-based materials. This conference will focus on the information exchange on these new developments in the sustainable cementitious material as well as the close collaboration among the conference participants in the future. The topics of the conference will cover both basic research and practical application of sustainable cementitious materials for sustainable energy effective buildings.

### Registration

Applications for this meeting must be submitted by July 8, 2018. Please apply early, as some meetings become oversubscribed (full) before this deadline.

Application via the Conference Web Site:

Advanced Materials for Sustainable Infrastructure Development
Gordon Research Conference

Green and Low Carbon Cementitious Materials for Sustainability
August 5 - 10, 2018

The Hong Kong University of Science and Technology
Clear Water Bay, Kowloon
Hong Kong, CN

Chairs: Changwen Miao and Pedro Castro-Borges
Vice Chairs: Kamal H. Khayat and R. Doug Hooton

Conference Program

Nanotechnology in Cementitious Materials
Discussion Leader: Surendra Shah (Northwestern University, USA)
Florence Sanchez (Vanderbilt University, USA)
L. Singh (Central Building Research Institute, India)
Performance and Durability of Nano-Engineered Concrete

Recycling Concrete
Discussion Leader: Chi-sun Poole (Hong Kong Polytechnic University, Hong Kong SAR China)
Vanderley John (University of Sao Paulo, Brazil)
Takafumi Nguchi (University of Tokyo, Japan)
Concrete Recycling with Environmental Impact Minimization Toward Sustainable Use of Concrete

Mechanical Properties of Concrete
Discussion Leader: Zengxin Li (University of Macau, Macau SAR China)
Christopher Leung (Hong Kong University of Science and Technology, Hong Kong SAR China)
Sarah Billington (Stanford University, USA)
Strain Hardening Cementitious Composites for Sustainable Structures

Performance Testing for Concrete
Discussion Leader: Carmen Andrade (Polytechnical University of Catalonina, Spain)
Hans Beusenhausen (University of Cape Town, South Africa)
Kimberly Kurtis (Georgia Institute of Technology, USA)
Development and Implementation of Performance-Based Specifications for Concrete Durability

Hydration and Microstructure of Cementitious Materials
Discussion Leader: Paulo Monteiro (University of California, Berkeley, USA)
John Provis (University of Sheffield, United Kingdom)
Patrick Juilland (Sika Technology AG, Switzerland)
Impact of Solution Composition on Alite’s Dissolution

Digital Construction and Rheology of Concrete
Discussion Leader: Nicolas Roussel (IFSTTAR, France)
Robert Flett (ETH Zurich, Switzerland)
Viktor Mechtcherine (TU Dresden, Germany)
Digital Concrete: Opportunities and Challenges

Sustainable Binders
Discussion Leader: Karen Scrivener (Ecole Polytechnique Federale de Lausanne, Switzerland)
Shashank Bishnoi (Indian Institute of Technology Delhi, India)
Udaiw Clew (Nanyang Technological University, Singapore)
Modelling the Chemistry and Performance of Low Clinker Cements: Challenges and Opportunities

Service Life Prediction of Concrete
Discussion Leader: Mark Alexander (University of Cape Town, South Africa)
Jacques Marchand (SIMCO Technologies, Canada)
Kefei Li (Tsinghua University, China)
Andres Torres-Acosta (Mexican Transport Research Institute, Mexico)
Recent Developments in the Modeling of the Service Life of Concrete Structures Exposed to Aggressive Environments
Service Life Based on Durability Indicators: From Theory to Quality Control
Remaining life of concrete structures: Load capacity loss of structural elements due to corrosion of the embedded steel

Ultra High Performance Concrete
Discussion Leader: David Lange (University of Illinois at Urbana-Champaign, USA)
Sebastien Bernardi (LafargeHolcim, France)
Zuhua Zhang (University of Southern Queensland, Australia)
Durability Concern of Sustainable AAC Binders

Mechanical Properties of Concrete
Discussion Leader: Zengxin Li (University of Macau, Macau SAR China)
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