



24 HOURS OF
CONCRETE
KNOWLEDGE

Hosted by the American Concrete Institute • July 12-13, 2022

Tuesday, July 12

Welcome from ACI Global Moderators Antonio Nanni and Kari Yuers

9:00-10:00 pm Baghdad Time / 2:00-3:00 pm Detroit Time

Co-Host Organization: ACI Iraq Chapter

Local Moderator:

Dr. Ali N. Attiyah

1st Speaker:

Professor Haitham H. Muteb

Sustainable Reinforced Concrete Structures

2nd Speaker:

Dr. Saad Al-Ta'an, Professor

Reducing CO₂ Emission by Reducing Cement in Concrete

12:00-1:00 pm Hermosillo Time / 3:00-4:00 pm Detroit Time

Co-Host Organization: ACI Northwest Mexico Chapter

Local Moderator:

Arturo Gaytan, Engineer

1st Speaker:

Pedro Castro-Borge, Doctor of Engineering

Concrete Durability

2nd Speaker:

Abraham L. Lopez-Leon, Doctor in Materials Science

State of Art in Solutions in Carbon Neutral Concrete in Mexican Pavements

3:00-4:00 pm Bogota Time / 4:00-5:00 pm Detroit Time

Co-Host Organization: ACI Republic of Colombia Chapter

Local Moderator:

Gonzalo Gallo Egas, Civil Engineer

1st Speaker:

Carlos Alberto Arteta Torrents, Director/Chair, Departamento de Ingeniería Civil y Ambiental/CEE

Risk-Based Assessment of the Seismic Response of ACI 318-Compliant Moment Frames with Intermediate Detailing

2nd Speaker:

Daniela M. Martínez, MSc, PhD, Assistant Professor, Department of Civil and Environmental Engineering, Universidad del Norte

Life-Cycle Assessment as a Tool to Calculate Greenhouse Gas Emissions from Blended Cements

Tuesday, July 12

6:00-7:00 pm Sao Paulo Time / 5:00-6:00 pm Detroit Time

Co-Host Organization: IBRACON - Instituto Brasileiro do Concreto

Local Moderator:

Cesar Henrique Sato Daher, Civil Engineer, MSc

1st Speaker:

Hugo Armelin, PhD

Concrete for a Lower CO₂ Emission in Brazil

2nd Speaker:

Heloisa Fuganti Campos Marques, PhD

Mixture Design Method of Concrete for a Lower CO₂ Emission

5:00-6:00 pm Quito Time / 6:00-7:00 pm Detroit Time

Co-Host Organization: ACI Ecuador Chapter

Local Moderator:

Guillermo Loayza, PCS

1st Speakers:

Pablo Andrade, Civil Engineer, and Guillermo Loayza Sr., Civil Engineer

Concrete Knowledge: Importance of Optimizing Cement Use to Reduce Waste and Contamination

2nd Speaker:

Andres Sarzosa, Sustainability Specialist

Technical Guide of Procedures and Methodology for the Collection and Management of Data for the Cement Sector, Results of the Initiative of Climate Action Transparency-Ecuador

6:00-7:00 pm Merida Time / 7:00-8:00 pm Detroit Time

Co-Host Organization: ACI Southeast Mexico Chapter

Local Moderator:

Professor Josseph Eli Mandujano Zavala

1st Speaker:

Arturo Gaytan Covarrubias, FAcI, Innovation and Sustainability Manager, CEMEX

Race to Net Zero Carbon Concrete in Mexico

2nd Speaker:

Javier Arizmendi FAIA, Design Principal, SOM

Beyond Net Zero: Leveraging Technology Towards a Carbon-Removal Economy

6:00-7:00 pm Guatemala City Time / 8:00-9:00 pm Detroit Time

Co-Host Organization: ACI Guatemala Chapter & Instituto del Cemento y del Concreto De Guatemala (ICCG)

Local Moderator:

Plinio E. Herrera, Concrete R&D Manager, Cementos Progreso, and Chapter President, ACI Guatemala Chapter

1st Speaker:

Eduardo Lavarreda, CEO and Founder, 4PISOS Company

Optimizing the Performance of Slabs on Ground for a Distribution Center

2nd Speaker:

Ludwin Alvarez, Environmental Control and Monitoring Manager

Cement and Concrete Facing Climate Variability in Guatemala

Wednesday, July 13

1:00-2:00 pm Auckland Time / 9:00-10:00 pm Detroit Time

Co-Host Organization: Concrete New Zealand - Learned Society

Local Moderator:

Rick Henry, Associate Professor

1st Speaker:

Dr. Charlotte Toma, Lecturer, University of Auckland

Linking the Drivers for Change of Carbon Reduction and Seismic Resilience

2nd Speaker:

Ben Marsh, Manufacturing Manager, Golden Bay Cement

Golden Bay Cement's Waste End-of-Life Tyre Project

12:00-1:00 pm Sydney Time / 10:00-11:00 pm Detroit Time

Co-Host Organization: Concrete Institute of Australia

Local Moderator:

David Millar, Chief Executive Officer of the Concrete Institute of Australia

1st Speaker:

John Hilton, Group Capability Leader Bridges and Civil Structures and Design Director, Bridges, Aurecon

Concrete Bridges in the New Millennium: The Imperative for Innovation

2nd Speakers:

Professor Steven Foster, Dean of Engineering, University of NSW, and Mr. Craig Heidrich, Managing Director, HBM Group

To Carbon Neutral Concrete Construction through Technology and Standards

12:00-1:00 pm Tokyo Time / 11:00 pm-12:00 am Detroit Time

Co-Host Organization: Japan Concrete Institute (JCI)

Local Moderator:

Professor Mitsuyoshi Akiyama

1st Speaker:

Professor Masami Ishikawa, Tohoku Gakuin University, Dr. of Eng.

Performance and Demonstration of 3D FEM Initial Stress Analysis Program JCMAC3

2nd Speaker:

Professor Takafumi Noguchi, University of Tokyo, Dr. of Eng.

Sustainable Carbon Recycling with Concrete "White Carbon"

11:00-12:00 pm Bangkok Time / 12:00-1:00 am Detroit Time

Co-Host Organization: Thailand Concrete Association (TCA)

Local Moderator:

Thanakorn Pheeraphan, President, TCA

1st Speaker:

Mr. Binay Karna

Modified Andreason and Andersen Particle Packing Optimization Method to Develop Low-Cement High-Performance Concrete with Partial Cement Replacement by Fly Ash and Silica Fume

2nd Speaker:

Sakkarin Luangkamchorn, Construction Solution Technology Manager, The Concrete Products and Aggregate Co., Ltd.

Low Carbon Concrete Application in Thailand

Wednesday, July 13

2:00-3:00 pm Seoul Time / 1:00-2:00 am Detroit Time

Co-Host Organization: Korea Concrete Institute (KCI)

Local Moderator:

Cheolwoo Park, PhD, Vice President, International Affairs, KCI

1st Speaker:

Sungchul Bae, Associate Professor

Roadmap of Cement and Concrete Industry to Carbon Neutrality by 2050 in the Republic of Korea

2nd Speaker:

Jong-Han Lee, Associate Professor

Current Research for Material Development of CFRP and Expansion of Application to Structural Members in Korea

2:00-3:00 pm Singapore Time / 2:00-3:00 am Detroit Time

Co-Host Organization: ACI Singapore Chapter

Local Moderator:

Dr. Guoqing Geng, Assistant Professor, National University of Singapore

1st Speaker:

Shunzhi Qian, Associate Professor

Material Distribution in Spray-Based 3D Concrete Printing: Experimental Studies and Modelling

2nd Speaker:

Dr. Pang Sze Dai, Associate Professor

Presentation Title TBA

10:00-11:00 am Beirut Time / 3:00-4:00 am Detroit Time

Co-Host Organization: ACI Lebanon Chapter

Local Moderator:

Eng. Ziad Awad, Director, ACTS

1st Speaker:

Dr. Faten Abi Farraj

Replacing Natural Sand by Crushed Sand in Concrete: An Effective Response to Natural Sand Problems

2nd Speaker:

Mr. Marc Plançon

Carbon Neutral Concrete—Challenges & Solutions Snapshot

10:00-11:00 am Paris Time / 4:00-5:00 am Detroit Time

Co-Host Organization: ACI Paris Chapter

Local Moderator:

François Toutlemonde, PhD, General Civil Engineer, Research Director, Head of the Materials and Structures (MAST) Department of Gustave Eiffel University, France, President of the ACI Paris Chapter

1st Speaker:

Patrick Rougeau, PhD, Res. Dir., Director of Materials and Circular Economy department, CERIB, the French Technical Center of Concrete Prefabrication Industry

Evolutions in French and European Standards to Promote Lower Carbon-Footprint Concrete Solutions

2nd Speaker:

Christian Clergue, PhD, Head of the Innovation Representation and Materials Department (DIRM) at Eiffage Génie Civil France (Civil Engineering Branch for France of Eiffage Company)

The E3S Project: Design the City of Tomorrow and Built It Sustainably—or the Circular Economy Implemented on the Jobsite

Wednesday, July 13

12:00-1:00 pm Erbil Time / 5:00-6:00 am Detroit Time

Co-Host Organization: ACI Kurdistan Chapter

Local Moderator:

TBA

1st Speaker:

Dr. Ahmed Salih Mohammed, Civil Engineering Department, College of Engineering, University of Sulaimani, Kurdistan, Iraq

Computational Models to Forecast the Long-Term Compressive Strength of Normal-Strength Concrete with Waste Steel Slag as a Coarse Aggregate Replacement

2nd Speaker:

Nzar Shaker Piro, Assistant Lecturer, The University of Soran, College of Engineering, Scientific Research Center, Civil Engineering department

Multiple Analytical Models to Evaluate the Impact of Carbon Nanotubes on the Electrical Resistivity and Compressive Strength of the Cement Paste

11:00 am-12:00 pm London Time / 6:00-7:00 am Detroit Time

Co-Host Organization: The Institute of Concrete Technology (ICT)

Local Moderator:

Colin Nessfield, Vice President of the ICT

1st Speaker:

Robert Lewis, FACI, FCS, FICT, Technical Marketing Manager – Silica Fume, Ferroglobe

Practical Sustainable Concrete

2nd Speaker:

Richard Swatton, Technical Business Development Manager for Wagner's Earth Friendly Concrete (EFC)

Achieving Net Zero—Are Ternary Cements the Most Viable Low-CO₂ Alternatives for Concrete Production and What are the Potential Barriers to their Implementation?

4:30-5:30 pm Mumbai Time / 7:00-8:00 am Detroit Time

Co-Host Organization: ACI India Chapter

Local Moderator:

Sunny Surlaker, Director of Institute for International Talent Development

1st Speaker:

Dr. Sivakumar Kandasami, Deputy General Manager (Civil), Larsen & Toubro Limited

C&D Waste for Sustainable Concrete Construction

2nd Speaker:

Dr. Manu Santhanam, Professor, Department of Civil Engineering, IIT Madras

Use of Limestone Calcined Clay Combination as Supplementary Cementing Material to Reduce CO₂ Footprint of Concrete

2:00-3:00 pm Rome Time / 8:00-9:00 am Detroit Time

Co-Host Organization: ACI Italy Chapter

Local Moderator:

Gennaro Magliulo, Associate Professor

1st Speaker:

Professor Liberato Ferrara

The Sustainability of the Concrete Construction Industry: Contributions by the Italian Value Chain

2nd Speaker:

Luigi Coppola, Professor – Department of Engineering and Applied Sciences – University of Bergamo

Perspective Pathways for Zero Carbon Footprint Concrete

Wednesday, July 13

3:00-4:00 pm Lausanne Time / 9:00-10:00 am Detroit Time

Co-Host Organization: Fédération internationale du béton (fib)

Local Moderator:

Agnieszka Bigaj, Senior Scientist, TNO Unit Buildings, Infrastructure & Maritime

1st Speaker:

Joost Walraven, Em. Prof. Delft University of Technology, The Netherlands

Assessment of Existing Structures Experiencing Deterioration

2nd Speaker:

Jean-Michel Torrenti, Researcher at Université Gustave Eiffel, Professor at Ecole des ponts et chaussées

Low Carbon Concrete is not only Low Carbon Cement

4:00–5:00 pm Warsaw Time / 10:00-11:00 am Detroit Time

Co-Host Organization: Committee of Civil Engineering of the Polish Academy of Sciences (CCE PAS)

Local Moderator:

Professor Maria Kaszynska

1st Speaker:

Lech Czarnecki, Professor, PhD, DSc

Sustainable Building Construction; in Search of the Promethean Transformation

2nd Speaker:

Dr. Maciej Zajac, Sc. Eng.

CO₂ Mineralization in Cement and Concrete Industry

5:00-6:00 pm Oslo Time / 11:00 am-12:00 pm Detroit Time

Co-Host Organization: Norwegian Concrete Association (NCA)

Local Moderator:

Cecilie Hagby, Managing Director of the NCA

1st Speakers:

Krzysztof Wojslaw, Sweco Norway and Ulvestad Oystein, Sweco Norway

A Construction Site without Paper Drawings—How to Use Parametric Design and 3D Modelling to Optimize Constructions: A Case Study from Randselva Bridge in Norway

2nd Speaker:

Truls Krossøy, MSc, Concrete Technologist

How to Minimize Carbon Footprint by Using EPD, LCA and Ultra Low Carbon Concrete: A Case Study

6:00-7:00 pm Madrid Time / 12:00-1:00 pm Detroit Time

Co-Host Organization: Asociación Española de Ingeniería Estructural (ACHE)

Local Moderator:

Antonio Martínez-Cutillas, President, ACHE

1st Speakers:

Luis Amorín, Global Head of Open Innovation, Ferrovial; Luis Martín-Tereso, Bridge Design Manager at Engineering Services, Ferrovial; and Alfredo Rodriguez, Head of Quality & Environment Department, Ferrovial

Sustainable Actions in Concrete Structures

2nd Speaker:

Carlos Thomas, Associate Professor, PhD

Siderurgical Aggregates as Alternative for Structural and High-Performance Concrete

Wednesday, July 13

1:00-2:00 pm Santiago Time / 1:00-2:00 pm Detroit Time

Co-Host Organization: ICH - Instituto del Cemento y del Hormigón de Chile

Local Moderator:

Fernando Yanez, PhD, Civil Engineer, Director of Idiem at Universidad de Chile and Past President of the Chilean Structural Engineers Association

1st Speaker:

Professor Leonardo Massone, PhD, Civil Engineering Department, University of Chile

Structuring Shear Wall Buildings Based on Artificial Neural Networks

2nd Speaker:

Professor Viviana Letelier, PhD, Civil Engineering Department, Universidad de la Frontera

Use of Recycled Aggregates in Concrete

Closing remarks from ACI Global Moderators Antonio Nanni and Kari Yuers