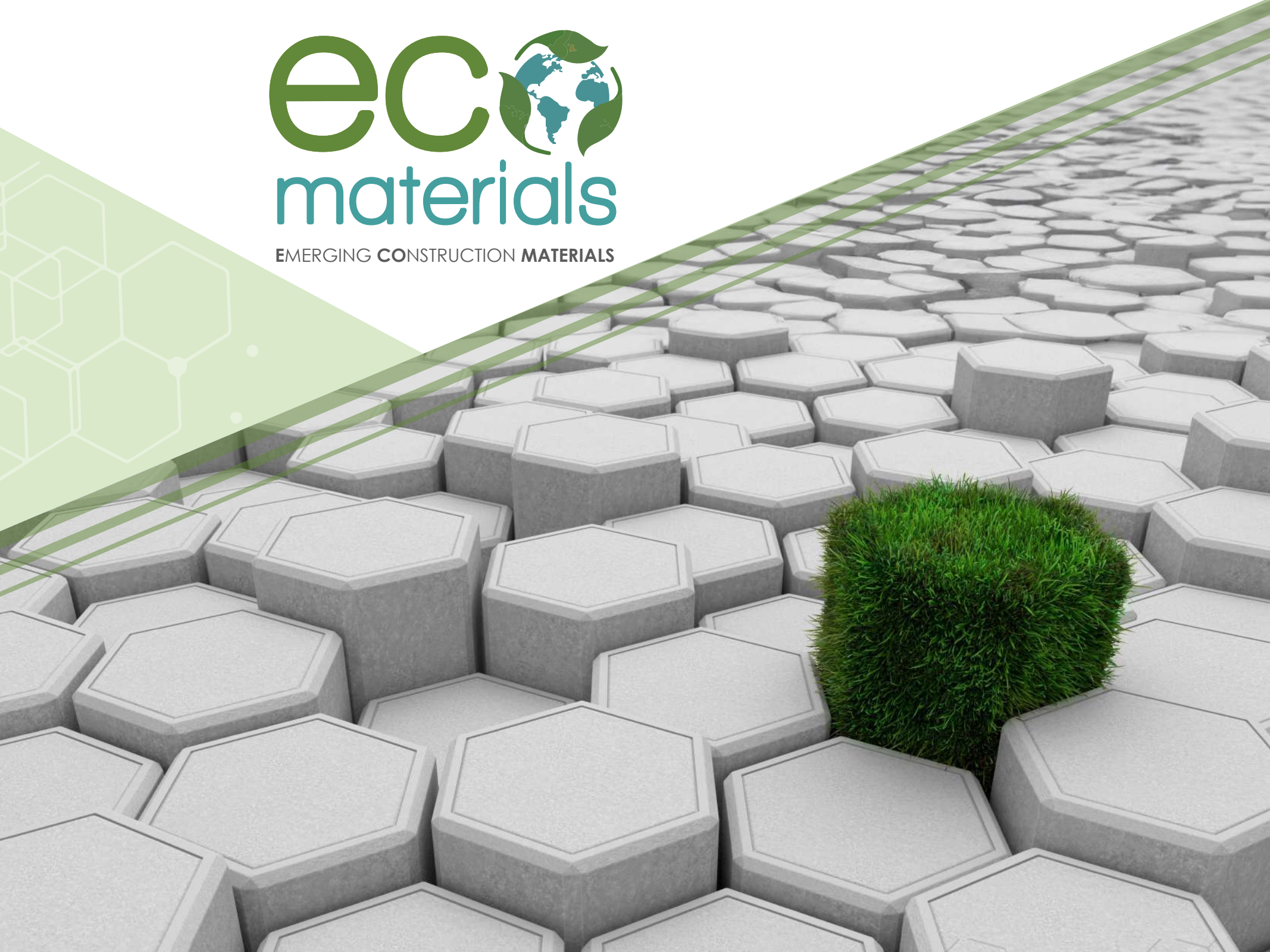


eco materials

EMERGING CONSTRUCTION MATERIALS



EMERGING CONSTRUCTION MATERIALS

TOWARDS SUSTAINABLE AND RESILIENT CITIES

NEW YORK UNIVERSITY ABU DHABI | FEBRUARY 1-2, 2024

جامعة نيويورك أبوظبي



NYU ABU DHABI

The cement industry alone accounts for about 8% of global anthropogenic CO₂ emissions, mainly attributed to the production of ordinary Portland cement (OPC). Alternative low-carbon binders to OPC are currently being researched, with some already in use today. Despite the countless opportunities presented by the use of these binders, their widespread adoption faces challenges, including market resistance, lack of established standards and guidelines, and various technical obstacles, all contributing to a measured pace in their integration. This conference explores these emerging low-carbon cementitious materials, their opportunities, challenges, and the way forward to their implementation to help build more sustainable, environmentally friendly, and resilient cities and infrastructure.

We are delighted to extend an invitation for your active involvement in two entire days of dynamic conversations among representatives from academia, industry, and government entities. This engaging event will take place in a city renowned for its warm hospitality and cultural diversity. We eagerly anticipate your participation in ECO Materials 2024.

Join us in commemorating the legacy of the late **Professor Povindar Kumar (PK) Mehta**, a pioneer in the science and technology of concrete. In his honor, we are hosting a special reception on Day 1 (Feb 1) of the conference. Moreover, we are privileged to have **Professor Surendra P. Shah**, a prominent figure in the realms of engineering mechanics and material science, gracing our event as the opening keynote speaker. Renowned for groundbreaking research, Professor Shah has made profound contributions to the understanding and definition of properties in cement-based materials. Additionally, we are thrilled to announce that the distinguished **Professor Paulo J.M. Monteiro**, a luminary in the field of cement and concrete research with a wealth of award-winning research, will deliver the **Inaugural Monteiro Lecture** on Day 2 (Feb 2) of the conference.

Explore the program, register now, and be a part of this unique opportunity to celebrate the contributions of these eminent professionals to the world of sustainable construction materials. Don't miss the chance to attend the introduction of the first-ever Monteiro Lecture during ECO Materials 2024!

Chairman of ECO Materials 2024

Kemal Celik, Assistant Professor of Civil and Urban Engineering, NYUAD

Director of NYUAD AMBER Lab



IN MEMORIAM: Professor Povindar Kumar Mehta

Roy W. Carlson Distinguished Professor of Civil and Environmental Engineering, Emeritus. UC Berkeley 1930-2019. Join us as we pay tribute to the extraordinary Professor P. Kumar Mehta, whose groundbreaking work in the science of concrete continues to shape the industry. In a special reception, we will honor his contributions, reflect on his impactful legacy, and celebrate the indelible mark he left on the field of sustainable construction materials.



OPENING KEYNOTE: Professor Surendra P. Shah

We are delighted to have Professor Surendra P. Shah kickstart ECO Materials 2024 with an enlightening keynote address that promises to set the tone for an inspiring exploration of sustainable construction materials. Professor Shah stands at the intersection of engineering mechanics and material science, with a distinguished career marked by seminal research and groundbreaking contributions. He has left a lasting mark on the field, particularly in advancing our understanding of cement-based materials. His unique and remarkable research includes the development of high performance concrete, fibre reinforced concrete, self-consolidating concrete, shrinkage reducing admixtures, carbon nano-tube reinforced cement based composites and extrusion processing of concrete. Join us as Professor Shah shares insights into his transformative research, which has not only shaped the present but also laid the foundation for the sustainable future of cement-based materials.



INAUGURAL MONTEIRO LECTURE by Professor Paulo J.M. Monteiro

We are honored to have Professor Paulo J.M. Monteiro, a distinguished figure in the field of cement and concrete, as our speaker for the first-ever Monteiro lecture. This special lecture series, bearing the name of the esteemed professor Monteiro, is set to become a recurring highlight in future conferences. With numerous awards recognizing his exceptional research, Professor Monteiro will share insights into the latest advancements and future prospects in sustainable materials for construction. Don't miss this opportunity to engage with one of the leading minds in the field.

Join us in celebrating the inauguration of the Monteiro Lecture.

Register now to secure your spot at this unique event and be part of the enlightening keynote address by Professor Monteiro.

PARTICIPANTS



USA
Cuba

Canada
Germany

Switzerland
Brazil

Singapore
India

South Korea
Turkiye

UAE

SPEAKERS



Surendra P. Shah

*Northwestern University, USA
University of Texas at Arlington, USA*



Paulo J. M. Monteiro

*University of California
Berkeley, USA*



Claudia P. Ostertag

*University of California
Berkeley, USA*



R. Douglas Hooton

*University of Toronto,
Canada*



David Lange

*University of Illinois
Urbana Champaign, USA*



Jan Olek

Purdue University, USA



John Provis

*Paul Scherrer Institute,
Switzerland*



**Fernando Martirena-
Hernandez**

*Universidad Central
de las Villas, Cuba*



Mohammad J.A. Qomi

*University of California
Irvine, USA*



Eric Bescher

*University of California
Los Angeles, USA*

SPEAKERS



Mohsen Ben Haha
Heidelberg Materials AG,
Germany



Shashank Bishnoi
Indian Institute of Technology
Delhi, India



Ana Paula Kirchheim
Universidade Federal do Rio
Grande do Sul, Brazil



Juhyuk Moon
Seoul National University,
South Korea



Cagla Meral Akgul
Middle East Technical University,
Türkiye



Craig W. Hargis
Fortera Corporation, USA



Guoqing Geng
National University of Singapore,
Singapore



Jiaqi Li
Lawrence Livermore
National Laboratory, USA



Kemal Celik
New York University
Abu Dhabi, UAE

DAILY PROGRAM | DAY 1 | FEBRUARY 1st

60 min	8:00 - 9:00 AM	REGISTRATION & REFRESHMENTS
90 min	9:00 - 9:30 AM	Introduction, Kemal Celik , NYUAD
	9:30 - 10:30 AM	Opening Remarks, Vice-Chancellor Mariët Westermann and Dean Samer Madanat Chair: David Lange Opening Keynote: Surendra P. Shah , Northwestern University & University of Texas at Arlington, USA <i>"Carbon-Negative Concrete"</i>
30 min	10:30 - 11:00 AM	BREAK & REFRESHMENTS
90 min		Session 1: <i>"Fostering Sustainable Progress in Concrete: Overcoming Barriers, Geologic Insights, and Cement's Dual Impact"</i> Chair: Jan Olek
30 min	11:00 - 11:30 AM	R. Douglas Hooton , University of Toronto, Canada <i>"Reducing Barriers to Adoption and Use of Low-Carbon Concretes"</i>
30 min	11:30 AM - 12:00 PM	Mohammad J.A. Qomi , University of California Irvine, USA <i>"Sustainable Construction Materials and Geologic Processes at the Interface"</i>
30 min	12:00 - 12:30 PM	John Provis , Paul Scherrer Institute, Switzerland <i>"Can We Focus Cements Research to Benefit Both the Environment and Human Development?"</i>
90 min	12:30 - 2:00 PM	LUNCH & CONFERENCE PHOTO SHOOTING (at Sexton Square/Central Plaza at 1:45 PM)
90 min		Session 2: <i>"Innovations in Sustainable Construction Materials and Practices, Characterization, Waste Utilization"</i> Chair: Paulo J.M. Monteiro
30 min	2:00 - 2:30 PM	Craig Hargis , Fortera Corporation, USA <i>"Green Cement Focus on Industrial Decarbonization - Production and Use of Vaterite for Cementitious Systems"</i>
30 min	2:30 - 3:00 PM	Kemal Celik , New York University Abu Dhabi, UAE <i>"Advances in Decarbonizing Cement Production and Development of Sustainable Construction Materials in the UAE"</i>
30 min	3:00 - 3:30 PM	Guoqing Geng , National University of Singapore, Singapore <i>"Sustainable Concreting with Waste and Low-grade Material"</i>
30 min	3:30 - 4:00 PM	BREAK & REFRESHMENTS
90 min		Session 3: <i>LC3 Concrete Revolution: Challenges, Performance Factors, and Innovations</i> Chair: David Ramos
30 min	4:00 - 4:30 PM	Fernando Martirena-Hernandez , Universidad Central de las Villas, Cuba <i>"LC3 Implementation at Large Scale, Main Challenges"</i>
30 min	4:30 - 5:00 PM	Mohsen Ben Haha , Heidelberg Materials AG, Germany <i>"Factors Influencing Early and Late Performance of Multi-component Cements: LC3 as an Example"</i>
30 min	5:00 - 5:30 PM	Shashank Bishnoi , Indian Institute of Technology Delhi, India <i>"Performance of Concrete Produced Using Limestone Calcined Clay Cement"</i>
15 min	5:30 - 5:45 PM	BREAK
	5:45 - 8:00 PM	P. Kumar Mehta Reception (at Torch Club)

DAILY PROGRAM | DAY 2 | FEBRUARY 2nd

60 min	8:00 - 9:00 AM	REGISTRATION & REFRESHMENTS
45 min	9:00 - 9:45 AM	Chair: Surendra P. Shah David Lange , University of Illinois Urbana Champaign, USA <i>"Emerging Materials to Enhance Sustainability and Durability"</i>
45 min	9:45 - 10:30 AM	Jan Olek , Purdue University, USA <i>"Nontraditional Supplementary Cementitious Materials"</i>
30 min	10:30 - 11:00 AM	BREAK & REFRESHMENTS
90 min		Session 4: <i>"Advancing Sustainability in Concrete: Data-Driven Innovation, Characterization, and Waste Utilization"</i> Chair: R. Douglas Hooton
30 min	11:00 - 11:30 AM	Claudia P. Ostertag , University of California Berkeley, USA <i>"Pathways to a More Durable & Sustainable Infrastructure with Reduced Carbon Footprint"</i>
30 min	11:30 AM - 12:00 PM	Jiaqi Li , Lawrence Livermore National Laboratory, USA <i>"Electrochemical decarbonization of cement"</i>
30 min	12:00 - 12:30 PM	Ana Paula Kirchheim , Universidade Federal do Rio Grande do Sul, Brazil <i>"Tracing the Evolution and Future Perspectives of Low Carbon Cement Industry in Brazil"</i>
90 min	12:30 - 2:00 PM	LUNCH
90 min		Session 5: <i>"Revolutionizing Low-Carbon Infrastructure: Construction Speed, Innovation, and Carbon Capture Technologies"</i> Chair: Claudia P. Ostertag
30 min	2:00 - 2:30 PM	Eric Bescher , University of California Los Angeles, USA <i>"Speed of Construction as an Economic Incentive for Low-Carbon Infrastructure: The Role of BCSA in the Transition to Net-Zero."</i>
30 min	2:30 - 3:00 PM	Cagla Meral Akgul , Middle East Technical University, Türkiye <i>"Innovations in Additive Manufacturing for Construction Applications"</i>
30 min	3:00 - 3:30 PM	Juhyuk Moon , Seoul National University, South Korea <i>"Recent Global Trends in Cement-related CCUS Technologies"</i>
30 min	3:30 - 4:00 PM	BREAK & REFRESHMENTS
60 min	4:00 - 5:00 PM	Chair: Mohammad J.A. Qomi Monteiro Lecture: Paulo J.M. Monteiro <i>"Importance of Integrating Theory and Experiments in Advanced Cementitious Materials"</i>

Sessions location: A6 Building, 007 (Lecture Hall), NYUAD Campus

VENUE | NEW YORK UNIVERSITY ABU DHABI

The ECO Materials 2024 Conference is scheduled to take place at the main campus of New York University Abu Dhabi (NYUAD) on Saadiyat Island, Abu Dhabi. Established in collaboration with NYU and the Emirate of Abu Dhabi, the NYUAD campus embodies a collective commitment to addressing the pivotal roles and challenges of higher education in the 21st century. Currently, NYUAD hosts a diverse community of over 2100 undergraduate and 115 graduate students hailing from more than 125 countries, alongside a faculty comprising over 360 members from 50+ different countries.

The conference venue, the NYUAD Conference Center situated in Building A6, serves as the hub for intellectual exchange and community engagement. Home to the NYUAD Institute, this building attracts distinguished international thinkers who convene to share ideas. Featuring a 300-seat auditorium, a 180-seat lecture hall, various presentation rooms, and a spacious reception lobby, the Conference Center provides an ideal setting for the conference proceedings.

ECO Materials 2024 sessions will take place in the 180-seat **Lecture Hall A6-007**.



VENUE | SAADIYAT ISLAND

Saadiyat Island, situated to the east-north of Abu Dhabi, is the home to NYUAD. It is also home to the renowned Abu Dhabi Louvre Museum and boasts one of the most stunning beaches in Abu Dhabi, known as Saadiyat Beach.



HOTEL | BEACH ROTANA

The conference organizing committee suggests Beach Rotana in downtown Abu Dhabi that is at close distance from the conference venue.

Beach Rotana is an award-winning city 5-star resort with a prime waterside location and an enviable selection of modern leisure, dining and business facilities. This iconic five-star property, which is popular among discerning business and leisure travellers, as well as UAE residents, is an urban retreat with something for everyone. It provides direct access to the shops, services and entertainment attractions at adjacent Abu Dhabi Mall.



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We look forward to seeing you!



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