

Events

CURRENT AND UPCOMING

Burmister Lecture | Jie Han | University of Kansas

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September 30, 2025

2:00 PM - 3:00 PM



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140 Uris

Roadway Moisture Mitigation through Capillary-Driven Wicking Geotextiles

Moisture is widely recognized as a key factor in the degradation of roadway performance. It increases soil weight, induces swelling and shrinkage, accelerates freeze-thaw damage, reduces strength and stiffness, and promotes erosion. While conventional drainage and dewatering methods aim to control soil moisture, their effectiveness is

often limited in unsaturated conditions where hydraulic gradients are insufficient. Consequently, even well-drained subgrade soils and base layers above the water table can retain excess moisture, leading to ongoing deterioration of roadways.

Wicking geotextiles present an innovative approach to moisture mitigation by actively removing water through capillary action, lateral transport, and evaporation. This presentation will explain the underlying mechanisms of wicking geotextiles and present results from both laboratory testing and field monitoring. Comparative performance data will highlight the advantages of wicking geotextiles over non-wicking geotextiles, illustrating their effectiveness in reducing moisture-related roadway damage and enhancing its performance and resilience.



Jie Han

Dr Jie Han is the Roy A. Roberts University Distinguished Professor in the Department of Civil, Environmental, and Architectural Engineering at the University of Kansas. He earned his BS and MS degrees in Geotechnical Engineering from Tongji University in 1986 and 1989, respectively, and his PhD in Civil Engineering from the Georgia Institute of Technology in 1997. Han's research focuses on geosynthetics, ground improvement, pile foundations, buried structures, and roadway engineering. He is the sole author of the widely adopted textbook *Principles and Practice of Ground Improvement* and has published over 450 peer-reviewed journal and conference papers. He currently serves as Past President of the ASCE Geo-Institute, Treasurer

of the International Geosynthetics Society (IGS), and Chair of the Transportation Research Board Geomaterial Properties and Behavior Committee. Since 2021, he has also served as Specialty Chief Editor for the Geotechnical Engineering Section of the journal *Frontiers in Built Environment*.

Han has delivered more than 300 keynote and invited lectures and short courses worldwide. Notable talks include the State of the Practice Lecture at the 21st Annual George F. Sowers Symposium (2018), the 18th UK IGS Lecture in London (2018), the 2021–2023 Geosynthetic Materials Association Robert M. Koerner Award Lecture, and the 2024 Sun Jun Lecture. His contributions to the profession have been recognized through numerous awards, including the 2011 Shamsheer Prakash Prize for Excellence in Practice of Geotechnical Engineering, the 2014 International Geosynthetics Society Award, the 2017 ASCE Martin S. Kapp Foundation Engineering Award, the 2018 ASCE Kansas City Section Engineer of the Year Award, and the 2024 Irvin E. Youngberg Award from the Kansas State Higher Education System. Dr. Han was elected Fellow of ASCE in 2014.

Contact Information

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UPCOMING EVENTS

September 23, 2025

[CEEM Seminar | Paola Crippa | University of Notre Dame](#)

September 25, 2025

[CEEM Seminar | Jose E. Andrade | California Institute of Technology](#)

September 29, 2025

[CEEM Seminar | Eliot Fried | Okinawa Institute of Science and Technology](#)

October 7, 2025