

# The University of Kansas

Lawrence, KS 66045

Jie Han, Ph.D., PE

Professor

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## EDUCATION

Ph.D., Civil Engineering, the Georgia Institute of Technology, 1997

MS, Civil Engineering, the Georgia Institute of Technology, 1995

Certificate, Composites Engineering, the Georgia Institute of Technology, 1995

MS, Geotechnical Engineering, Tongji University, P.R. China, 1989

BS, Geotechnical Engineering, Tongji University, P.R. China, 1986

## PROFESSIONAL REGISTRATION

Licensed P.E. in Civil Engineering in Georgia since 1998 (License No. 024539)

## TEACHING EXPERIENCE

Professor, Department of Civil, Environmental, and Architectural Engineering, THE UNIVERSITY OF KANSAS, August 2010 – present; Associate Professor, August 2004 – August 2010 (tenured in August 2008)

### *Courses Taught*

- Materials for Transportation Facilities (undergraduate course, Spring 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013)
- Foundation Engineering (undergraduate course, Spring 2005)
- Geotechnical Engineering Testing (graduate course, Fall 2004, Spring 2007, Fall 2008, Fall 2010, Fall 2012)
- Designing with Geosynthetics (graduate course, Spring 2005, Fall 2009, Spring 2012)
- Ground Improvement (graduate course, Fall 2005, Spring 2008, Spring 2011)
- Advanced Foundation Engineering (graduate course, Spring 2006, Fall 2007, Spring 2010, Spring 2013)
- Principles of Pavement Design (graduate course, Fall 2006, Spring 2009, Fall 2011, Fall 2013)

### *Advising*

- 10 Ph.D. students (2004 – present), 5 graduated
- 11 MS students (2005 – present), 9 graduated
- 14 visiting professors/scholars and 6 visiting Ph.D. students (2004 – present)
- More than 200 undergraduate students (2004 – present)

### *Graduate advisory committee*

- 6 Ph.D. students (2004 – present)
- 8 MS students (2004 – present)

Assistant Professor, Department of Civil Engineering, WIDENER UNIVERSITY, August 2001 – August 2004 (promoted to Associate Professor)

*Courses Taught*

- Soil Mechanics (undergraduate course, Fall 2001, Spring & Fall 2002, Spring 2003, Fall 2003; Spring 2004)
- Foundation Engineering (undergraduate course, Spring 2002, Spring 2003, Spring 2004, Summer 2004)
- Geosynthetics (graduate course, Summer 2002)
- Performance Evaluation of Constructed Facilities (graduate course, Fall 2002)
- Material Engineering (undergraduate course, Summer 2003)
- Senior Project (Fall 2002, Spring 2003, Fall 2003, Spring 2004)
- Railway Systems Design for Operations, Short Course (May 21-23, 2003)
- Sophomore Undergraduate Research (Fall 2002)
- Junior Undergraduate Research (Fall 2002, Fall 2003, Spring 2004)

*Advising*

- 15 Undergraduate students (2001- 2004)
- 2 MS graduate student (2002 – 2004)

Instructor, GEORGIA INSTITUTE OF TECHNOLOGY, USA, 1994 - 1997

*Courses Taught*

- Soil Lab Testing (graduate course, Winter 1997)
- Construction Materials (undergraduate course, Fall and Winter 1994; Spring and Summer 1995)

Lecturer, TONGJI UNIVERSITY, CHINA, 1989 - 1993

*Courses Taught*

- Soil Improvement (undergraduate course, Fall 1989, Spring 1991)
- In-Situ Testing (undergraduate course, Summer 1993)
- Underpinning (undergraduate course, Spring 1992, Spring 1993)
- Geology Field Trip (undergraduate course, Summer 1990)

*Advising*

- 2 MS graduate students (1989-1993)
- 50 undergraduate students (1989-1991)

**WORK / RESEARCH EXPERIENCE**

Professor, Department of Civil, Environmental, and Architectural Engineering, THE UNIVERSITY OF KANSAS, August 2010 – present; Associate Professor, August 2004 – August 2010

*Research Topics*

- Calibration of Mechanistic-empirical Design Guide
- Load rating of bridge culverts
- Behavior of steel-reinforced HDPE plastic pipes
- Capacity of bridge pile foundations under scour conditions

- Behavior of geocell-reinforced bases
- Laterally loaded drilled shafts in MSE walls
- Properties of recycled asphalt pavements
- Micromechanical analyses of geotechnical problems
- LRFD analysis for drilled shafts based on O-cell tests
- Reinforcement-drainage geosynthetics in embankment/wall construction with marginal backfill
- Geosynthetic-reinforced pile-supported embankments
- Numerical and limit equilibrium methods for reinforced earth structures
- Tolerable strains of asphalt overlays
- Moisture sensitivity of HMA (Superpave) mixtures
- Geomechanical model for recovery of coalbed methane

Affiliated Faculty, Center for Global and International Studies, THE UNIVERSITY OF KANSAS, August 2009 - present

Courtesy Faculty, Environmental Studies, THE UNIVERSITY OF KANSAS, August 2005 - present

Professor, Center for East Asian Studies, THE UNIVERSITY OF KANSAS, August 2010 – present;  
Associate Professor, October 2004 – August 2010

Assistant Professor, Department of Civil Engineering, WIDENER UNIVERSITY, August 2001 – August 2004 (promoted to Associate Professor)

#### *Research Topics*

- Geosynthetic-reinforced pile-supported embankments
- Analysis and design of multi-tier mechanically stabilized earth wall systems
- Geosynthetically reinforced embankments on deep mixed columns
- Design of geosynthetic reinforced earth walls in limited space
- Tensile stiffness effects on performance geosynthetic-reinforced slopes
- Consolidation characteristics of soil-cement column foundations
- Load transfer mechanisms in underpinned foundations using micropiles
- Design of geosynthetic-reinforced unpaved roads
- Influence of curing conditions on soil-cement strength
- Permeability of floor concrete
- Development of a geotechnical testing box

Visiting Associate Professor, Lowland Institute, SAGA UNIVERSITY, JAPAN, August 2002 – September 2002

#### *Research Topics*

- Embankments over deep mixed columns
- Influence of deep mixing on properties of surrounding soil

Manager and Senior Engineer - Research & Technology Development, TENSAR EARTH TECHNOLOGIES, INC., April 1997 – August 2001

#### *Responsibilities*

- Management of research and technology development projects

- Development of design methodologies and software for geosynthetics related applications: reinforced foundations, geosynthetic reinforced/piled embankments, subgrade improvement and base reinforcement, surficial slope stability, and service state design methods of MSE walls
- Principal contact to governmental agencies (NSF, FHWA, State DOTs, etc.), professional organizations (ASCE, NCMA, NAGS, etc.), and university professors for research collaborations and technical support
- Technical support or training for design engineers, salespersons, and clients
- Technical presentations to graduate and undergraduate students at universities, engineers at governmental agencies including State DOTs, and consulting firms

Research Assistant, GEORGIA INSTITUTE OF TECHNOLOGY, September 1993 - March 1997

*Research Topics*

- A study of fiber reinforced polymeric piles and pile-sand interactions (NSF CMS 9457549)
- The influence of geomembrane surface roughness on interface strength
- Optimum design of Stone Matrix Asphalt Mixes (GDOT Research project No. 9217)
- Membrane penetration in triaxial tests

Lecturer, TONGJI UNIVERSITY, P. R. OF CHINA, March 1989 - September 1993

*Research Topics*

- Soil-structure interactions of underpinned foundations using micropiles
- Selection of soil improvement techniques in Shanghai
- Experimental and theoretical studies of composite grounds
- Soil improvement for soft clays using stone columns and deep soil mixing columns
- Quality control in the construction using the dynamic compaction method
- A feasibility study of subgrade improvement for an airfield
- Controlling of displacements induced by pile driving in the construction of a 38-story building
- The Shanghai soil improvement design and construction code
- Prevention grouting for protecting existing buildings during the excavation and sheetpiles pulled out
- Properties of cement-treated soils

## **RESEARCH INTERESTS**

- Geosynthetic reinforced earth structures (walls, slopes, embankments, foundations, pavements, etc.)
- Ground improvement (stone columns, deep mixed columns, micropiles, etc.)
- Buried structures
- Soil-structure interactions
- Pile foundations
- Geomechanics
- Geomaterials
- Asphalt technology and pavement design
- Numerical analysis
- Load Resistance Factor Design (LRFD) in geotechnical engineering

## **TEACHING INTERESTS**

- Basic and advanced soil mechanics
- Shallow and deep foundations

- Materials for transportation facilities
- Geosynthetics
- Ground improvement
- Earth retaining structures and slope stability
- In-situ testing and instrumentation
- Pavement design

## **HONORS / AWARDS**

- Lecturer of the Seventh Sun Jun Lecture, China, October 25, 2012
- Miller Scholar Award, FY2011-2012, School of Engineering, the University of Kansas
- Recipient, 2011 Shamsheer Prakash Annual Prize for Excellence in the Practice of Geotechnical Engineering
- Miller Scholar Award, FY2010-2011, School of Engineering, the University of Kansas
- Recognition Award for Establishing GeoShanghai International Conference, 2010 GeoShanghai Organizing Committee, June 3, 2010
- Bellows Scholar Award, FY2008-2009, School of Engineering, the University of Kansas
- Guest Professor, Wenzhou University, China, 2009 -
- Campus Life Enrichment Committee (CLEC) Lecture “Geosynthetic Reinforcement and Recent Developments”, invited, Georgia Southern University, Statesboro, GA, Nov. 21, 2008
- Miller Scholar Award, FY2007-2008, School of Engineering, the University of Kansas
- Best Paper Award, Soil Mechanics Section, Transportation Research Board, 2008
- Guest Professor, Huazhong University of Science and Technology, China, 2008 -
- 2007 Miller Professional Development Award for Distinguished Service to the Engineering Profession, the University of Kansas
- Graduate Recruiting Award, Department of Civil, Environmental, and Architectural Engineering, the University of Kansas, 2007
- Big 12 Faculty Fellowship, the University of Kansas, 2007
- Bellows Scholar Award, FY2005-2006, School of Engineering, the University of Kansas
- Recognition Honor for Outstanding Contributions to the Organization of GeoShanghai International Conference 2006, Department of Geotechnical Engineering, Tongji University, China, June 2006
- Guest Professor, Southeast University, China, 2006 -
- Hua Ying Fellow, Southeast University, China, 2005
- Widener Provost’s Faculty Development Option Award, awarded on March 3, 2003
- The Japan Society for the Promotion of Science (JSPS) Short-Term Invitation Fellowship for Research in Japan, awarded by the Japan Society for the Promotion of Science and recommended by U.S. National Science Foundation, 2002.
- Invited Top Name Speaker, “Geosynthetic-Reinforced and Pile Supported Embankments”, ASCE/Pa DOT Geotechnical Seminar, Hershey, PA, April 14-16, 1999
- “Whatever It Takes” - Software Development Award, Tensar Earth Technologies, Inc., 1998
- Distinguished Future Leader in Geosynthetics, presented by the North American Geosynthetic Society and the Industrial Fabrics Association International, 1997.
- Finalist Paper for the General Award Competition at the Conference of Geosynthetics’97
- Finalist Paper for the Student Paper Award Competition at the Conference of Geosynthetics’97
- Co-author of the 2<sup>nd</sup> Best Book “Soil Improvement and Underpinning”, awarded by Ministry of Construction, the People’s Republic of China, December 1996
- Outstanding Young Faculty Award in Tongji University, 1992
- Outstanding Young Faculty Award in Shanghai, 1992

## CONFERENCE CHAIR/COMMITTEE

- Member of Steering Committee, Organizing Committee, and Technical Committee, GeoShanghai International Conference 2014, Shanghai, May 26 to 28, 2014
- Member of Planning Committee, 56th Annual Asphalt Paving Conference, Lawrence, Kansas, 5 December, 2013
- Conference Chair, the 45<sup>th</sup> Geotechnical Engineering Conference, Lawrence, Kansas, 14 November, 2013
- Co-organizer, Organizing Committee, International Symposium on Design and Practice of Geosynthetic-Reinforced Soil Structures (Bologna 2013), 14-16 October, 2013
- Member, Organizing Committee, the 1st International Symposium on Transportation Soil Engineering in Cold Regions, Xining, China, 10-11 October, 2013
- Session co-chair, Design and analysis of reinforced slopes, GeoCongress 2013, San Diego, CA, March 3 to 6, 2013
- Conference Chair, the 44<sup>th</sup> Geotechnical Engineering Conference, Lawrence, Kansas, 8 November, 2012
- Session co-chair, Sustainable Geotechniques, International Conference for Sustainable Design, Engineering, & Construction 2012, Fort Worth, TX, November 7 to 9, 2012
- Member, International Advisory Committee, International Conference on Ground Improvement and Ground Control, Wollongong, Australia, 30 October to 2 November 2012
- Member, Academic Committee, International Symposium on Geotechnical Engineering for High-speed Transportation Infrastructure, Hangzhou, 26 to 28 October 2012
- Member, International Advisory Committee, International Symposium on Coastal Engineering Geology (IS-Shanghai 2012), 20-21 September 2012
- Member, Scientific and Organizing Committees, the 2<sup>nd</sup> International Conference on Railway Engineering, 20 to 21 July 2012
- Member, Technical Committee, ICTPA 25th Annual Conference & The 9th Asia Pacific Transportation Development Conference, Chongqing, China, 29 June to 2 July, 2012
- Member, Technical Advisory Committee, the 4<sup>th</sup> International Conference on Grouting and Deep Mixing, New Orleans, Louisiana, USA, 15-18 February, 2012
- Conference Chair, the 43<sup>rd</sup> Geotechnical Engineering Conference, Lawrence, Kansas, 17 November, 2011
- Member, Technical Committee, the 24<sup>th</sup> ICTPA Annual Conference & NACGEA International Symposium on Geo-Trans, Los Angeles, USA, 27 to 29 May 2011
- Member, International Advisory Committee, the 3<sup>rd</sup> International Conference on Geotechnical Engineering for Disaster Mitigation and Rehabilitation 2011 (GEDMAR 2011), Semarang, Central Java, Indonesia, 17-20 May, 2011
- Technical and Proceedings Co-chair, ASCE Geo-Institute Annual Conference – GeoFrontiers 2011, Dallas, Texas, USA, March 13 to 16, 2011
- Conference Chair, the 42<sup>nd</sup> Geotechnical Engineering Conference, Lawrence, Kansas, November 17, 2010
- Member, International Academic Committee, International Symposium on Geomechanics and Geotechnics: From Micro to Macro, Tongji University, China, October 10 to 12, 2010
- Member, Organizing and Technical Committees, the Second GeoShanghai International Conference, Shanghai, China, June 3 to 5, 2010
- Chair, Planning Committee, 41<sup>st</sup> Kansas University Geotechnical Engineering Conference, Lawrence, Kansas, November 20, 2009

- Member of Technical Organizing Committee, GeoHunan International Conference on Challenges and Recent Advances in Pavement Technologies and Transportation Geotechnics, Hunan, China, August 3-6, 2009
- Chair of Session “New Technologies”, International Symposium on Deep Mixing & Admixture Stabilization, Okinawa, Japan, May 19-21, 2009
- Co-Chair and Editor-in-Chief of proceedings, the US-China Workshop on Ground Improvement Technologies, Orlando, Florida, March 14, 2009
- Member of International Advisory Committee, International Symposium on Lowland Technology, Busan, Korea, September 24 to 26, 2008
- Session Chair for Keynote Lectures, the 4<sup>th</sup> Asian Regional Conference on Geosynthetics, Shanghai, June 17 to 20, 2008
- Member of International Advisory Committee, Session Chair for Keynote Lectures, Invited Speaker, the 2nd International Conference on Geotechnical Engineering for Disaster Mitigation and Rehabilitation (GEDMAR08), Nanjing, China, May 28 to June 2, 2008
- Session Chair, *GeoCongress 2008: Geosustainability and Geohazard Mitigation*, ASCE, New Orleans, March 9 to 12, 2008
- Session Co-chair, the 5<sup>th</sup> International Symposium on Earth Reinforcement (IS Kyushu’07), Fukuoka, Japan, November 14-16, 2007
- Member of Technical Committee, the 1<sup>st</sup> International Symposium on Geotechnical Safety and Risk, Shanghai, China, October 18-19, 2007
- Member, International Advisory Committee, International Workshop on Constitutive Modelling – Development, Implementation, Evaluation, and Application, Hong Kong, China, January 12 to 13, 2007
- Session Co-Chair, the 8<sup>th</sup> International Geosynthetics Conference, 18-22 September, 2006, Yokohama, Japan.
- Member of International Advisory Committee and Invited Lecture/Session Chair, International Symposium on Lowland Technology, Saga, Japan, September 14 to 16, 2006
- Member of Organizing Committee and Co-Chair of Technical Committee, Secretary General, GeoShanghai International Conference, Shanghai, China, June 6-8, 2006
- Member of Advisory Committee, 50<sup>th</sup> Annual Asphalt Paving Conference, 2006
- Member of Organizing Committee, the 2<sup>nd</sup> World Forum of Chinese Scholars in Geotechnical Engineering, Hohai University, Nanjing, P.R. China, August 20-21, 2005
- Moderator, the 49<sup>th</sup> Annual Kansas Asphalt Paving Conference, Nov. 3, 2005
- Member of Organizing Committee and Session Chair, the 1<sup>st</sup> World Forum of Chinese Scholars in Geotechnical Engineering, Tongji University, Shanghai, P.R. China, August 21-23, 2003
- Chair of Sessions “Use of Wastes in Construction” and “Landfill Covers and Liners”, the 18<sup>th</sup> International Conference on Solid Waste Technology and Management, Philadelphia, USA, March 23-26, 2003
- Chair of Session “Advances in Land Disposal and Remediation”, the Seventeenth International Conference on Solid Waste Technology and Management, Philadelphia, October 21-24, 2001
- Member, Local Organizing Committee, International Conference on Site Characterization, Atlanta, March 1998
- Soft Soil Session Chair, First Young Asian Geotechnical Engineers Conference, AIT, Bangkok, Thailand, January 7 – January 11, 1991

## **PROFESSIONAL COMMITTEE/EDITORIAL BOARD**

- Associate Editor, the Editorial Board of Journal of Materials in Civil Engineering, ASCE, 2014 -

- Associate Editor/Member, the Editorial Board of Journal of Geotechnical and Geoenvironmental Engineering, ASCE, 2002 –
- Editorial Board Member, Geotechnical Research, Institution of Civil Engineers (ICE), 2013 -
- Editorial Board Member, Ground Improvement, Institution of Civil Engineers (ICE), 2013 -
- Editorial Board Member, Transportation Infrastructure Geotechnology, Springer, 2013 -
- Editorial Board Member, Transportation Geotechnics, Elsevier, 2013 -
- Editorial Board Member, Geosynthetics International, Institution of Civil Engineers (ICE), 2013 -
- Member of Public Relations Committee, International Society of Soil Mechanics and Geotechnical Engineering, 2012 -
- Vice President, International Association of Chinese Infrastructure Professionals, October 2010 –
- Co-Editor, Geotechnical Engineering Journal, Southeast Asia Geotechnical Society, 2010
- Editorial Board Member, Journal of GeoEngineering, Taiwan Geotechnical Society, 2012 -
- Advisory Committee Member, North American Geotechnical Engineers Association, 2010 –
- Editorial Board Member, Frontiers of Structural and Civil Engineering, Springer, 2009 -
- Member, the 10<sup>th</sup> Editorial Board of Chinese Journal of Geotechnical Engineering, 2008 –
- Member, NCHRP Project Panel E24-31, AASHTO LRFD Design-Construction Specifications of Shallow Foundations for Highway and Bridge Structures, 2006 - 2009
- Panel member, NSF CMS (Civil and Mechanical Systems) Major Research Instrumentation (MRI) Review Panel, 2006
- Member, Editorial Board, Geomechanics and Geoengineering: An International Journal, 2005 -
- Member, TRB A2K07 Committee on Geosynthetics, 2003 – 2012
- Member, ASCE Geo-Institute Geosynthetic Committee, 2004 –
- Member, ASCE Geo-Institute Ground Improvement Committee, 2004 –
- Associate Editor/Member, the Editorial Board of Journal of Geotechnical and Geoenvironmental Engineering, ASCE, 2002 –
- Member, Advisory Board/Editorial Panel, International Journal of Geomechanics, ASCE, 2000-
- Executive Member, Segmental Retaining Wall (SRW) Standards Committee, the National Concrete Masonry Association (NCMA), 2001 – 2004
- Member, Advisory Board, Center for Geotechnical Composite Systems, Virginia Tech, 2001
- Member, Soil Improvement Committee, the Chinese Society of Soil Mechanics and Foundation Eng., 1990-1993
- Member, Editorial Board of Chinese Journal of Soil Improvement, 1990-1993

## GRANTS

- Field monitoring of MSE walls To investigate secondary reinforcement effects, PI, funded by Kansas Department of Transportation, 2013-2015
- Establishing a design procedure for buried steel-reinforced HDPE plastic pipes – A field study (Phase II), PI, funded by Kansas Department of Transportation, 2013-2015
- Pullout resistance of mse wall strip reinforcement in uniform aggregate, PI, funded by Kansas Department of Transportation, 2013-2015
- Pavement Deterioration Due to Horizontal Fracturing and Wind Farm Development in Kansas, Co-PI, funded by Kansas Department of Transportation, 2013-2014
- Calibrating Mechanistic-empirical Pavement Design Guide for Kansas, PI, funded by Kansas Department of Transportation, 2012-2014
- Resilient Behavior of TriAX Geogrid-reinforced Working Platforms over Weak Subgrade, PI, funded by Tensar International, 2012-2013
- Development of Resistance Factors for Piles from PDA Data, Co-PI, funded by Kansas Department of Transportation, 2012-2013



- Vertical Reinforcement Spacing for MSEW and RSS Structures, Co-PI, funded by Maccaferri, 2012 to 2013
- Protection of underground pipes and utility lines using geosynthetics, PI, funded by the University of Kansas, 2011-2012
- Improved Load Rating Factors for Low-fill Box Structures, PI, funded by Kansas Department of Transportation, 2011-2012
- Onsite use of Recycled Asphalt Pavement Materials with Geocells to Reconstruct Damaged Pavements by Heavy Trucks, PI, funded by Mid-America Transportation Research Center, 2010-2011
- Establishing a Design Procedure for Buried Steel-Reinforced HDPE Plastic Pipes, PI, funded by Kansas Department of Transportation, 2010-2012
- Geotechnical Solutions for Soil Improvement, Rapid Embankment Construction, and Stabilization of the Pavement Working Platform, funded by Strategic Highway Research Program (SHRP 2 Project R02), Phase II, Co-PI, 2008-2011
- Experimental and Micromechanical Studies on Soil Arching under Static Loading, PI, funded by KU GRF, 2009 to 2010
- Capacity of Scour Damaged Bridges (Part II), Co-PI, funded by Kansas Department of Transportation, 2009-2010
- Substituting Geosynthetics For Shotcrete Facing on Soil Nailed Walls, Co-PI, funded by Kansas Department of Transportation, 2009 to 2010
- Experimental Study of Innovative Geogrid Products for Subgrade Improvement, PI, funded by Tensar International, 2009
- Numerical Analyses of Rammed Pier Systems, PI, funded by Geopier Foundations, 2008-2009
- Development of a Mechanistic Response Model for Geocell-reinforced Aggregate Bases, PI, funded by Geosynthetics Research Institute, 2008-2009
- Slope Reinforcement using Helical Anchors, Co-PI, funded by Earth Contact Products, 2008
- Feasibility Study for Reducing Flowability of Vacuum Tower Bottoms using Aggregate, PI, funded by Frontier El Dorado Refining Company, Kansas, 2008
- Laboratory Study of Characteristics of Recycled Asphalt Pavements (RAP) in Kansas, PI, funded by Kansas Department of Transportation, 2008-2010
- Lateral Load Capacity of Drilled Shaft Short Rock Sockets, Co-PI, funded by Kansas Department of Transportation, 2008-2009
- Tolerable Strains for HMA Overlays over Concrete Pavements, PI, funded by Kansas Department of Transportation, 2007-2009
- Evaluation of Data for MSE Walls with Drilled Shafts, Co-PI, funded by Kansas Department of Transportation, 2007-2009
- Capacity of Pile-Founded Bridges Under Scoured Conditions, Co-PI, funded by Kansas Department of Transportation, 2007-2009
- Evaluation of Performance of Geocell-Reinforced Bases, PI, Kansas Department of Transportation and Kansas University Transportation Research Institute, 2007-2008
- REU Supplement: U.S.-Japan Cooperative Science: Use of Reinforcement-Drainage Geosynthetics in Embankment/Wall Construction with Marginal Backfill, PI, funded by National Science Foundation, Award No. 0442159, 2006-2007
- Development of Recommended Skin Friction Design Values Design Values for Drilled Shafts in Intermediate Geomaterials based on O-cell Tests, PI, funded by Kansas Department of Transportation, 2006 – 2008
- Development of a Rapid Test to Determine Moisture Sensitivity of HMA (SuperPave) Mixtures, PI, funded by Kansas Department of Transportation, 2006 – 2008.
- Development of Design Guidelines for Laterally Loaded Drilled Shafts in MSE Walls, Co-PI, funded by Kansas Department of Transportation, 2006 – 2008.

- U.S.-Japan Cooperative Science: Use of Reinforcement-Drainage Geosynthetics in Embankment/Wall Construction with Marginal Backfill, PI, funded by National Science Foundation, Award No.: 0355430, 2004 – 2007.
- Numerical Analysis of Column-Supported Embankments, PI, funded by the Collin Group, 2005-2007.
- Investigation of Geosynthetic-Soil Confinement using Asphalt Pavement Analyzer, PI, funded by Tensar Earth Technologies, Inc., 2006-2008
- Mechanistic Analysis of Geocell-Reinforced Pavement Foundations, PI, funded by KU Transportation Research Institute, 2006-2008
- Numerical Study of Geosynthetic-Aggregate Interaction under Wheel Loading, PI, funded by KU Transportation Research Institute, 2006-2008
- Development of A Predictive Geomechanical Model for Recovery of Coalbed Methane, PI, funded by KU Energy Research Center, 2005-2006.
- Experimental and Numerical Studies of Reinforcement-Drainage Geosynthetics in Embankment/Wall Construction with Marginal Backfill, PI, funded by KU General Research Fund, 2005-2006.
- Geosynthetic-Reinforced Pile Supported Embankments, Co-PI, funded by FHWA, 2003-2004.
- Laboratory Study on Consolidation Characteristics of Deep Soil Mixing Foundations, PI, the Provost's Grant, Widener University, 2004-2005.
- Widener Faculty Development Option Award, PI, Fall, 2003.
- Acquisition of A Load Actuator System for Enhancing Civil Engineering Research and Research Training in An Undergraduate Institute (MRI), PI, funded by National Science Foundation, Award No. CMS-0216149, 2002-2004.
- Development of Design Charts for Geosynthetically Reinforced Embankments on Deep Mixed Columns, Principal Investigator, funded by the FHWA National Deep Mixing Program, 2002-2004.
- Analyses and Design of Multi-Tier Mechanically Stabilized Wall Systems, Co-PI, funded by Delaware Transportation Institute, 2002-2003.
- Testing of Additives for Waterproofing Concrete, Co-PI, funded by Concure Products, 2002.
- Widener University Provost Grant, PI, 2002 – 2003.
- Widener University Faculty Development Option Grant, PI, 2002.

## **SUPERVISED STUDENTS AND VISITING SCHOLARS**

### Ph.D. Students

Jie Huang, graduated in December 2007, dissertation “Coupled Mechanical and Hydraulic Modeling of Geosynthetic-reinforced Column-supported Embankments”

Anil Bhandari, graduated in May 2010, dissertation “Micromechanical Analysis of Geosynthetic-soil Interaction under Cyclic Loading”

Xiaoming Yang, graduated in August 2010, dissertation “Numerical Analyses of Geocell-reinforced Granular Soils under Static and Repeated Loads”

Sanat Pokharel, graduated in October 2010, dissertation “Experimental Study on Geocell-reinforced Bases under Static and Dynamic Loading”

Cheng Lin, graduated in May 2012, dissertation “Evaluation of Lateral Behavior of Pile-supported Bridges under Scoured Conditions”

Jitendra K. Thakur, graduated in May 2013, dissertation topic “Geocell-reinforced Unpaved and Paved Roads with Recycled Asphalt Pavement (RAP) Bases: Experimental Study and Damage Model Development”

Ryan Corey, expected to graduate in May 2014, dissertation topic “Protection of Underground Pipelines using Geosynthetics”

Luke Schuler, expected to graduate in December 2014, dissertation topic “Behavior of Drilled Shafts and Augered Cast Piles”

Deep Khatri, expected to graduate in 2014, thesis “Design Procedure for Steel-reinforced High-density Polyethylene Plastic Pipes in Ground”

Xiaohui Sun, expected to graduate in 2016

Yan Jiang, expected to graduate in 2016

Jamal Ismail Kakrasul, expected to graduate in 2017

#### M.S. Students

Yuze Zhang, graduated in August 2007, thesis “Investigation of Geosynthetic-soil Confinement Using Asphalt Pavement Analyzer”

Harihar Shiwakoti, graduated in December 2007, thesis “Development of A Rapid Test to Determine Moisture Sensitivity of HMA (SuperPave) Mixtures”

Ashwani Gautam, graduated in May 2009, thesis “Tolerable Strains for HMA Overlays over Concrete Pavements”

Yu Qian, graduated in December 2009, thesis “Experimental Study on Triangular Aperture Geogrid-reinforced Bases over Weak Subgrade under Cyclic Loading”

Subhash Thakur, graduated in May 2010, thesis “Laboratory Evaluation of Physical Characteristics of Recycled Asphalt Pavement (RAP) in Kansas”

Jitendra Thakur, graduated in January 2011, thesis “Experimental Study of Geocell-reinforced Recycled Asphalt Pavement (RAP) Bases under Static and Cyclic Loads”

Bhagaban Acharya, graduated in December 2011, thesis “Experimental Study of Geocell-reinforced Flexible Pavements with Recycled Asphalt Pavement (RAP) Bases under Cyclic Loads”

Deep Khatri, graduated in May 2012, thesis “Experimental Evaluation of the Behavior of Steel-Reinforced High Density Polyethylene (SRHDPE) Pipes”

Raju Acharya, graduated in December 2012, thesis “Improved Load Distribution for Load Rating of Low-fill Box Structures”

Jun Guo, expected to graduate in December 2013

Omar Ismael, expected to graduate in May 2014

### Visiting Scholars

Dr. Sadik Oztoprak, Istanbul University, Turkey, July 2006 to March 2007

Dr. Jungjo Yuu, KGI, South Korea, August 2006 to July 2007

Dr. Jianfeng Chen, Tongji University, China, August 2007 to February 2008

Dr. Fayun Liang, Tongji University, China, October 2007 to October 2008

Prof. Xianzhi Huang, Engineering College of Shanxi University, China, February 2009 to February 2010

Lei Chen, Ph.D. student, Southeast University, China, September 2007 to August 2008

Fei Wang, Ph.D. student, Southeast University, China, September 2007 to August 2008

Yong Li, Ph.D. student, Shandong University, China, October 2007 to October 2008

Yanli Dong, Ph.D. student, Taiyuan University of Technology, China, August 2008 to March 2010

Dr. Fen Li, Wuhan University of Technology, China, August 2009 to August 2010

Yan Jiang, Ph.D. student, Tianjin University, China, October 2009 to October 2010

Dr. Shanhong Liu, Chongqing Jiaotong University, China, February 2010 to February 2011

Dr. Gang Jiang, Nanjing University of Technology, China, March 2010 to March 2011

Dr. Chengzhi Xiao, Hebei University of Technology, China, August 2010 to August 2011

Prof. Wei Shi, Qingdao Technological University, China, September 2010 to March 2011

Prof. Songyu Liu, Southeast University, China, December 2010 to January 2011

Dr. Walid El Kamash, Jazan University, Kingdom of Saudi Arabia, June to July 2011

Zhen Zhang, Ph.D. student, Tongji University, China, August 2011 to September 2013

Dr. Jingshan Jiang, Jiangsu Transportation Research Institute, China, October 2011 to February 2013

Dr. Xiaoming Liu, Hunan University, China, August 2012 to August 2013

Dr. Zhigang Cao, Zhejiang University, China, September 2012 to September 2013

Weihua Li, Deputy General Manager, Hebei Research Institute of Construction & Geotechnical Investigation Co., LTD, China, November 2012 to November 2013

Hongguang Jiang, Ph.D. student, Zhejiang University, China, December 2012 to present

Dr. Huayang Lei, Tianjin University, China, February 2013 to February 2014

Prof. Wuyu Zhang, Qinghai University, China, August 2013 to February 2014

Dr. Chunyong Luo, Shanghai Jiaotong University, August 2013 to August 2014

Mustapha Rahmaninezhad, Iran University of Science and Technology, September 2013 to March 2014

#### **INVITED M.S. AND PH.D. THESIS EXAMINER/EXTERNAL MEMBER**

- National University of Singapore, Singapore
- Nanyang Technological University, Singapore
- University of New South Wales, Australia
- India Institute of Technology - Madras, India
- National Institute of Technology Karnataka, India
- Hong Kong Polytechnic University, China
- University of Delaware, USA
- Suranaree University of Technology, Thailand

#### **PUBLICATIONS**

##### Peer-Reviewed Journal Papers

1. Zhang, Z., Han, J., and Ye, G. (2014). "Numerical Investigation on factors for deep-seated slope stability of stone column-supported embankments over soft clay." *Engineering Geology*, 168C, 104-113.
2. Lin, C., Zhu, W., and Han, J. (2014). "Permeability and leachability of solidified sewage sludge." *Environmental Geotechnics*, 1(1), 33-39.
3. Jiang, Y., Han, J., and Zheng, G. (2014). "Influence of column yielding on degree of consolidation of soft foundations improved by deep mixed columns." *Geomechanics and Engineering*, 6(2), 179-194.
4. Huang, J., Bin-Shafique, S., Han, J., and Rahman, M.S. (2014). "Modeling of laterally loaded drilled shaft group in MSE wall." *ICE Geotechnical Engineering Journal*, accepted.
5. Cao, Z., Cai, Y., and Han, J. (2014). "Mitigation of ground vibration generated by high-speed trains on saturated poroelastic ground with under-sleeper-pads." *ASCE Journal of Transportation Engineering*, accepted.
6. Jiang, Y., Han, J., and Zheng, G. (2014). "Numerical analysis of pile-slab supported railway embankments." *Acta Geotechnica*, published online.
7. Han, J. and Thakur, J.K. (2014). "Sustainable roadway construction using recycled aggregates with geosynthetics." *Sustainable Cities and Society*, published online.
8. Bhandari, A., Han, J., and Parsons, R.L. (2014). "Two-dimensional DEM analysis of geogrid-reinforced bases under a cyclic vertical load." *Acta Geotechnica*, accepted.
9. Corey, R., Han, J., Khatri, D.K., and Parsons, R.L. (2014). "Geosynthetic protection of buried steel-reinforced HDPE pipes from static loading." *ASCE Journal of Geotechnical and Geoenvironmental Engineering*, accepted.
10. Lin, C., Han, J., Bennett, C.R., and Parsons, R.L. (2014). "Analysis of laterally-loaded piles in sand considering scour hole dimensions." *ASCE Journal of Geotechnical and Geoenvironmental Engineering*, accepted.
11. Lin, C., Han, J., Bennett, C.R., and Parsons, R.L. (2014). "Behavior of laterally-loaded piles under scour conditions considering stress history of undrained soft clay." Technical note, *ASCE Journal of Geotechnical and Geoenvironmental Engineering*, accepted.

12. Leshchinsky, D., Kang, B., Han, J., and Ling H. (2014). "Framework for limit state design of geosynthetic-reinforced walls and slopes." *Transportation Infrastructure Geotechnology*, accepted.
13. Han, J. (2014). "Recent research and development of column technologies to improve soft foundations." Submitted for possible publication in *Ground Improvement*.
14. Pokharel, S., Han, J., Leshchinsky, D., and Parsons, R.L. (2014). "Experimental evaluation of geocell-reinforced bases under repeated loading." Submitted for possible publication in *Geotextiles and Geomembranes*.
15. El Kamash, W. and Han, J. (2014). "Widening of column-supported embankments over soft clay considering consolidation: numerical analysis." Submitted for possible publication in *Soils and Foundations*.
16. Khatri, D.K., Han, J., Corey, R., Parsons, R.L., and Brennan, J.J. (2014). "Laboratory evaluation of installation of a steel-reinforced high-density polyethylene pipe in soil." Submitted for possible publication in *Journal of the Transportation Research Board*.
17. Lin, C., Bennett, C.R., Han, J., and Parsons, R.L. (2014). "Effect of Soil Stress History on scour evaluation of pile-supported bridges," Submitted for possible publication in *ASCE Journal of Bridge Engineering*.
18. Jiang, Y., Han, J., and Zheng, G. (2013). "Numerical analysis of consolidation of soft soils fully-penetrated by deep-mixed columns." *KSCE Journal of Civil Engineering*, 17(1), 96-105.
19. Liang, F., Yu, F. and Han, J. (2013). "A simplified analytical method for response of an axially loaded pile group subjected to lateral soil movement." *KSCE Journal of Civil Engineering*, 17(3), 368-376.
20. Yang, X., Han, J., Leshchinsky, D., and Parsons, R.L. (2013). "A three-dimensional mechanistic-empirical model for geocell-reinforced unpaved roads." *Acta Geotechnica*, 8(2), 201-213.
21. Huang, J., Han, J., Parsons, R.L., and Pierson, M. (2013). "Refined numerical modeling of a laterally-loaded drilled shaft in an MSE wall." *Geotextiles and Geomembranes*, 37, 61-73.
22. Li, F., Han, J., and Lin, C. (2013). "Effect of scour on the behavior of laterally loaded single piles in marine clay." *Journal of Marine Georesources and Geotechnology*, 31, 271-289.
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25. Xu, Y. S.; Huang, R. Q.; Han, J. and Shen, S.L. (2013). "Evaluation of allowable withdrawn volume of groundwater based on observed data." *Natural Hazards*, 67(2), 513-522.
26. Nian, T.K. and Han, J. (2013). "Analytical solution for seismic earth pressures in  $c-\phi$  soil with an infinite slope." Technical note, *ASCE Journal of Geotechnical and Geoenvironmental Engineering*, 139(9), 1611-1616.
27. Yang, X. and Han, J. (2013). "An analytical model for resilient modulus and permanent deformation of geosynthetic-reinforced unbound granular materials." *ASCE Journal of Geotechnical and Geoenvironmental Engineering*, 139(9), 1443-1453.
28. Thakur, J.K., Han, J., and Parsons, R.L. (2013). "Creep behavior of geocell-reinforced recycled asphalt pavement (RAP) bases." *ASCE Journal of Materials in Civil Engineering*, 25(10), 1533-1543.
29. Yang, X. and Han, J. (2013). "Geocell-reinforced granular fill under static and cyclic loading: A synthesis of analysis." *Journal of Geotechnical Engineering*, Southeast Asian Geotechnical Society, 44(4), December, 18-24.
30. Han, J. and Jiang, Y. (2013). "Use of geosynthetics for performance enhancement of earth structures in cold regions." *Sciences in Cold and Arid Regions*, 5(5), 517-529.

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33. Khatri, D.K., Han, J., Parsons, R.L., Young, B., Brennan, J.J., and Corey, R. (2013). "Laboratory evaluation of deformations of steel-reinforced high-density polyethylene pipes under static loads." *ASCE Journal of Materials in Civil Engineering*, 25(12), 1964-1969.
34. Lin, C., Bennett, C.R., Han, J., and Parsons, R.L. (2012). "Integrated analysis of the performance of pile-supported bridges under scoured conditions." *Engineering Structures*, 36, 27-38.
35. Ai, Z.Y., Cang, N.R., and Han, J. (2012). "Analytical layer-element solutions for a multi-layered transversely isotropic elastic medium subjected to axisymmetric loading." *Journal of Zhejiang University – Science A (Applied Physics and Engineering)*, 13(1), 9-17.
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37. Han, J., Bhandari, A., and Wang, F. (2012). "DEM analysis of stresses and deformations of geogrid-reinforced embankments over piles." *ASCE International Journal of Geomechanics*, 12(4), 340-350.
38. Thakur, J.K., Han, J., Pokharel, S.K., and Parsons, R.L. (2012). "Performance of geocell-reinforced recycled asphalt pavement (RAP) bases over weak subgrade under cyclic plate loading." *Geotextiles and Geomembranes*, 35, 14-24.
39. Zeng, L.-L., Hong, Z.-S., Cai, Y.-Q., and Han, J. (2011). "Change of hydraulic conductivity during compression of undisturbed and remolded clays." *Applied Clay Science*, 51(1-2), 86-93.
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47. Parsons, R.L., Pierson, M.C., Willems, I., Han, J., and Brennan, J.J. (2011). "Lateral capacity of short rock sockets in weak rock." *Journal of the Transportation Research Board*, No. 2212, *Soil Mechanics*, 34-41.
48. Pierson, M.C., Parsons, R.L., Han, J., and Brennan, J.J. (2011). "Laterally loaded shaft group capacities and deflections behind an MSE wall." *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, Reston, Virginia, 137(10), 882-889.

49. Han, J., Pokharel, S.K., Yang, X., Manandhar, C., Leshchinsky, D., Halahmi, I., and Parsons, R.L. (2011). "Performance of geocell-reinforced RAP bases over weak subgrade under full-scale moving wheel loads." *Journal of Materials in Civil Engineering*, ASCE, 23(11), 1525–1534.
50. Bhandari, A. and Han, J. (2010). "Investigation of geotextile-soil interaction under a cyclic wheel load using the discrete element method." *Geotextiles and Geomembranes*, 28(1), 33–43.
51. Han, J., Chen, J.F., Hong, Z.S., and Shen, S.L. (2010). "Mitigation of levee failure using deep mixed columns and geosynthetics." *GeoMechanics and GeoEngineering: International Journal*, 5(1), 49–55.
52. Yang, X.M., Han, J., Parsons, R.L., and Leshchinsky, D. (2010). "Three-dimensional numerical modeling of single geocell-reinforced sand." *Frontiers of Architecture and Civil Engineering in China*, 4(2), 233–240.
53. Ai, Z.Y., Wang, Q.S., and Han, J. (2010). "Transfer matrix solutions to axisymmetric and non-axisymmetric consolidation of multilayered soils." *Acta Mechanica*, 211(1-2), 155–172.
54. Chen, J.F., Han, J., and Yu, S.B. (2010). "Centrifugal modeling of an embankment backfilled with lime-stabilized soil on marine clay." *Marine Georesources and Geotechnology*, 28, 25–36.
55. Ai, Z.Y., Wang, Q.S., and Han, J. (2010). "Analytical solutions to consolidation of a multi-layered soil under circular loading." *Journal of Engineering Mathematics*, 66(4), 381–393.
56. Han, J. and Leshchinsky, D. (2010). "Analysis of back-to-back mechanically stabilized earth walls." *Geotextiles and Geomembranes*, 28(3), 262–267.
57. Chen, B.-G., Zheng, J.-J., and Han, J. (2010). "Experimental study and numerical simulation on concrete box culverts in trenches." *ASCE Journal of Performance of Constructed Facilities*, 24(3), 223–234.
58. Huang, J. and Han, J. (2010). "Two-dimensional coupled hydraulic and mechanical modeling of geosynthetic-reinforced column-supported embankments." *Computers and Geotechnics*, 37, 638–648.
59. Pokharel, S., Han, J., Leshchinsky, D., Parsons, R.L., and Halahmi, I. (2010). "Investigation of factors influencing behavior of single geocell-reinforced bases under static loading." *Geotextiles and Geomembranes*, 28(6), 570–578.
60. Lin, C., Bennett, C.R., Han, J., and Parsons, R.L. (2010). "Scour effects on the response of laterally loaded piles considering stress history of sand." *Computers and Geotechnics*, 37, 1008–1014.
61. Huang, J. and Han, J. (2009). "3D coupled mechanical and hydraulic modeling of a geosynthetic-reinforced deep mixed column-supported embankment." *Geotextiles and Geomembranes*, 27, 272–280.
62. Zheng, G., Liu, L., and Han, J. (2010). "Stability of embankment on soft subgrade reinforced by rigid inclusions (II) – group pile analysis." *Chinese Journal of Geotechnical Engineering*, 32(12), 1811–1820, in Chinese.
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64. Huang, J., Han, J., and Oztoprak, S. (2009). "Coupled mechanical and hydraulic modeling of geosynthetic-reinforced column-supported embankments." *ASCE Journal of Geotechnical and Geoenvironmental Engineering*, 135(8), 1011–1021.
65. Liang, F.Y., Chen, L.Z., and Han, J. (2009). "Integral equation method for analysis of piled rafts with dissimilar piles under vertical loading." *Computers and Geotechnics*, 36, 419–426.
66. Ai, Z.Y. and Han, J. (2009). "Boundary element analysis of axially loaded piles embedded in a multi-layered soil." *Computers and Geotechnics*, 36, 427–434.
67. Chen, J.F., Han, J., Oztoprak, S., and Yang, X.M. (2009). "Behavior of single rammed aggregate pier." *Computers and Geotechnics*, 36, 1191–1197.
68. Chen, J.F. and Han, J. (2009). "Numerical modeling of loading tests on a rammed aggregate pier." *Chinese Journal of Geotechnical Engineering*, 31(9), 1366–1370.
69. Wang, F., Han, J., Miao, L.C., and Bhandari, A. (2009). "Numerical analysis of geosynthetic-bridged and drilled shaft-supported embankments over large sinkhole." *Geosynthetics International Journal*, 16(6), 408–419.



70. Bhandari, A. and Han, J. (2009). "Evaluation of high-capacity composite spun piles." *Journal of Transportation Research Board*, 2116, 53-61.
71. Pierson, M.C., Parsons, R.L., Han, J., and Brennan, J.J. (2009). "Capacities and deflections of laterally loaded shafts behind an MSE wall." *Transportation Research Record, Journal of Transportation Research Board*, 2116, Soil Mechanics 2009, 62-69.
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73. Shen, S.L., Han, J., and Du, Y.J. (2008). "Deep mixing induced property changes in sensitive marine clays." *ASCE Journal of Geotechnical and Geoenvironmental Engineering*, 134(6), 845-854.
74. Liu, S.Y., Han, J., Zhang, D.W., and Hong, Z.S. (2008). "A new DJM-PVD combined method for soft ground improvement." *Geosynthetics International Journal*, 15(1), 43-54.
75. Chen, R.P., Chen, Y.M., Han, J., and Xu, Z.Z. (2008). "A theoretical solution for pile-supported embankments on soft soil." *Canadian Geotechnical Journal*, 45(5), 611-623.
76. Ai, Z.Y., Cheng, Z.Y., and Han, J. (2008). "State space solution to three-dimensional consolidation of multi-layered soils." *International Journal of Engineering Science*, 46, 486-498.
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80. Han, J., Oztoprak, S., Parsons, R.L., and Huang, J. (2007). "Numerical analysis of foundation columns to support widening of embankments." *Computers and Geotechnics*, 34(6), 435-448.
81. Han, J., Huang, J., and Parsons, R.L. (2007). "Influence of bedrock inclination on settlements of flexible shallow foundations." *Computers and Geotechnics*, 34(1), 53-56.
82. Han, J. and Leshchinsky, D. (2006). "General analytical framework for design of flexible reinforced earth structures." *ASCE Journal of Geotechnical and Geoenvironmental Engineering*, 132(11), 1427-1435.
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89. Shen, S.L., Han, J., and Miura, N. (2004). "Laboratory evaluation of mixing energy consumption and its influence on soil-cement strength." *Journal of Transportation Research Board*, No. 1868, 23-30.
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92. Leshchinsky, D. and Han, J. (2004). "Geosynthetic reinforced multitiered mechanically walls." *ASCE Journal of Geotechnical and Geoenvironmental Engineering*, 130(12), 1225-1235.
93. Leshchinsky, D., Hu, Y.H., and Han, J. (2004). "Limited reinforced space in segmental retaining walls." *Geotextiles and Geomembranes*, 22(6), 543-553.
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104. Han, J. and Frost, J. D. (1996). "Surficial stability of compacted clay: case study - Discussion." *Journal of Geotechnical Engineering*, ASCE, 122(3), March, 247-248.
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109. Han, J., Ye, S. L., Zhang, D. S. (1993). "Measured stresses and pore water pressures in the stone column reinforced foundation under a building loading." *Journal of Geotechnical Engineering*, 15(5), in Chinese, 40-47.
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113. Han, J. and Yang, W.D. (1992). "Settlement analysis of vertically-extended buildings" *Journal of Soils and Foundations*, 1, in Chinese.
114. Ye, S.L. and Han, J. (1992). "Recent development of underpinning techniques." *Journal of Site Investigation*, 4, in Chinese.
115. Zhou, H.T. and Han, J. (1991). "Soil-pile interaction of micropiles." *Journal of Soil Improvement*, 1(3), in Chinese.
116. Han, J. and Ye, S. L., and Zeng, Z. X. (1990). "Performance of stone column-reinforced foundations - a case study." *Journal of Geotechnical Investigation and Surveying*, 5, in Chinese, 1-6.
117. Han, J. and Ye, S.L. (1989). "Analysis of stone column reinforcing mechanisms." *Journal of Harbor Engineering*, 6, in Chinese, 6-14.

#### Peer-Reviewed or Invited Conference Papers

1. Han, J. (2014). "Recent advances in the use of geosynthetics to enhance sustainability of roadways." Invited keynote lecture, Conference on Advances in Civil Engineering for Sustainable Development, Nakhon Ratchasima, Thailand, 27-29 August.
2. Lin, C., Han, J., Bennett, C., and Parsons, R.L. (2014). "Case history analysis of bridge failures due to scour." International Symposium of Climatic Effects on Pavement and Geotechnical Infrastructure, in press.
3. Thakur, J.K., Han, J., Parsons, R.L., and Guo, J. (2014). "Sustainable stabilization of recycled asphalt pavement (RAP) bases." GeoCongress 2014, in press.
4. Sun, X., Han, J., Wayne, M.H., Parsons, R.L., and Kwon, J. (2014). "Quantifying the benefit of triaxial geogrid in stabilizing granular bases over soft subgrade under cyclic loading at different intensities." GeoCongress, 2014, in press.
5. Han, J., Thakur, J.K., Parsons, R.L., Pokharel, S.K., Leshchinsky, D., and Yang, X. (2013). "A summary of research on geocell-reinforced base courses." Ling, H.I., Gottardi, G., Cazzuffi, D., Han, J., and Tatsuoka, F. (editors) (2013). *Design and Practice of Geosynthetic-Reinforced Soil Structures*. Honoring Research Achievement of Professor Dov Leshchinsky, 14-16 October, 2013, Bologna, Italy.
6. Han, J. (2013). "Design of planar geosynthetic-improved unpaved and paved roads." *Pavement and Geotechnical Engineering for Transportation*, Geotechnical Practice Publication No. 8, Huang, B., Bowers, B.F., Mei, G.X., Luo, S.H., and Zhang, Z. (editors), 31-41.
7. Jiang, Y., Han, J., and Zheng, G. (2013). "Consolidation of column-reinforced soft foundations under embankments." *Stability and Performance of Slopes and Embankments III*, GSP231, Meehan, C.L., Pradel D., Pando, M.A., and Labuz, J.F. (editors), Proceedings of GeoCongress 2013, San Diego, CA, March 3 to 7, 1825-1828.
8. Zheng, G., Diao, Y., Li, S., and Han, J. (2013). "Stability failure modes of rigid pile-supported embankments and simplified analysis method." *Stability and Performance of Slopes and Embankments III*, GSP231, Meehan, C.L., Pradel D., Pando, M.A., and Labuz, J.F. (editors), Proceedings of GeoCongress 2013, San Diego, CA, March 3 to 7, 1821-1824.
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#### Magazine Articles

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#### Books and Chapters

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#### Technical Reports

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11. Han, J. and Huang, J. (2005). Development of Design Charts for Geosynthetically Reinforced Embankments on Deep Mixed Columns. Final Report, submitted to FHWA and the National Deep Mixing Program, May, 197p.
12. Collin, J.G., Han, J., and Huang, J. (2005). Numerical Analysis of Column-Supported Embankments. Final Report, submitted to FHWA, July.
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15. Han, J. (2003). Influence of Curing Conditions on Strengths of Soft Clay-Cement Mixtures. Research Report, Submitted to Provost of Widener University, June, 23p.
16. Han, J. (2003). Development of design Charts for Geosynthetically Reinforced Embankments on Deep Mixed Columns – Interim Report I: Literature Review, submitted to the National Deep Mixing Program, January, 234p.
17. A New Design Methods for Geosynthetic-Reinforced Unpaved Roads, Tensar Earth Technologies, Inc., Internal Report, March 2001.
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#### Developed Software

1. Design Software for Geosynthetic Reinforced Foundations - DIMENSION™.
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3. Design Software for Surficial Slope Stability – SSS.

#### Theses

1. An Experimental and Analytical Study of Fiber Reinforced Polymer Piles in Sand and Pile-Sand Interactions, Ph.D. Dissertation, the Georgia Institute of Technology, USA, 1997.
2. Experimental and Theoretical Studies of Stone Columns in Soft Clays, MS Thesis, Tongji University, China, 1989.

### **KEYNOTE AND INVITED LECTURES**

#### Keynote Lectures

1. Use of Geosynthetics for Performance Enhancement of Earth Structures in Cold Regions, the 1st International Symposium on Transportation Soil Engineering in Cold Regions, Xining, China, 10-11 October, 2013
2. Recent Advances in Column Technologies to Improve Soft Foundations, International Conference on Ground Improvement and Ground Control, Wollongong, Australia, 30 October to 2 November 2012
3. Geosynthetic Reinforcement for Railway and Highway Construction. International Symposium on Geotechnical Engineering for High-speed Transportation Infrastructure, Hangzhou, China, 26 to 28 October, 2012
4. Performance of Laterally-loaded Piles in an MSE Wall, Sun Jun Lecture, Shanghai, China, October 25, 2012
5. Giroud-Han Design Method – Development and Calibration, Tensar International Meeting, Cancun, Mexico, August 20 to 25, 2012
6. Recent Research on Triaxial Geogrid Reinforced-Unpaved Roads and Construction Platforms, Tensar International Meeting, Cancun, Mexico, August 20 to 25, 2012
7. Geocell-reinforced RAP Pavements - A New and Sustainable Solution, International Symposium on Safe, Energy-efficient, and Environmentally Friendly Transportation Infrastructure, Inner Mongolian, China, July 20-22, 2012
8. Geocell-reinforced RAP Pavements - A New and Sustainable Solution, 55<sup>th</sup> Kansas Asphalt Paving Conference, Lawrence, Kansas, December 1, 2011
9. Geosynthetic Reinforcement for Roadway Systems, PAVCO Geosynthetics Congress and Lecture Series, October 26 (at Medellin, Colombia), 27 (at Bogota), and 28 (at Cali), 2011
10. Exploring Geocell Technology for Roadway Base Reinforcement, International Symposium on Pavement and Geotechnical Engineering for Transportation, Nanchang, China, June 5, 2011
11. Design of Geosynthetic-reinforced Earth Retaining Structures and Roadways, International Workshop on Practical Solutions to Geotechnical Problems in Pavement Engineering, Shanghai, China, June 2 to 4, 2011
12. Reinforcement Innovations for Structural Pavement Design, the 1<sup>st</sup> PRS International Conference on Geocell Reinforcement, Herzliya, Israel, March 15, 2010
13. Geosynthetic Reinforcement Technologies and Recent Developments, the Tenth Chinese Symposium on Ground Improvement, Nanjing, China, November 3, 2008

14. US Education in Geotechnical Engineering, invited, the Second Chinese Education Symposium on Soil Mechanics, Nanjing, China, November 2, 2008
15. Geosynthetic-Reinforced Column-Supported Embankments, International Geotechnical Engineering Seminar, Tianjing University, China, June 5, 2008
16. Issues Related to Design of Geosynthetics-reinforced Unpaved Roads, the Tensar International Meeting, Lima, Peru, October 19, 2006
17. Latest Research on Geogrid Confinement for Pavement Applications, the Tensar International Meeting, Lima, Peru, October 19, 2006
18. Design Issues in Geosynthetic-Reinforced Column-Supported Embankments, Spring Seminar of the Seattle ASCE Geotechnical Group, May 20, 2006
19. Recent Development of Geosynthetic-Reinforced Column-Supported Embankments, the 23<sup>rd</sup> Annual Geotechnical Seminar – Geo-Omaha 2006, February 17, 2006
20. Design of Geosynthetic-reinforced Roads, Tensar International Conference, Cancun, Mexico, October 14, 2003
21. Design of Geosynthetic-reinforced Pile-supported Embankments, Tensar International Conference, Cancun, Mexico, October 14, 2003
22. Geosynthetics-reinforced Pile-supported Embankments, the 1st World Forum of Chinese Scholars in Geotechnical Engineering, Tongji University, August 22, 2003
23. Design and Construction of Embankments on Geosynthetic Reinforced Platforms Supported by Piles, ASCE/Pa DOT Geotechnical Seminar, Hershey, PA, April 14-16, 1999
24. Stone Column Technologies, the 3rd Chinese Soil Improvement Conference, Qengwangdao, P.R. China, 1992
25. Underpinning, co-author, the 3rd Chinese Soil Improvement Conference, Qengwangdao, P.R. China, 1992

#### Invited Lectures/Presentations

1. Mechanistic-Empirical Pavement Design Guide (MEPDG) Calibration in Kansas – Preliminary Results, 57th Annual Asphalt Paving Conference, Lawrence, Kansas, December 5, 2013
2. A Summary of Research on Geocell-Reinforced Base Courses, International Symposium on Design and Practice of Geosynthetic-Reinforced Soil Structures, October 14-16, 2013, Bologna, Italy
3. Geosynthetic Reinforcement – Research and Applications, Qinghai University, China, October 9, 2013
4. Recent developments of geosynthetic-reinforced column-supported embankments, the University of Illinois at Chicago, June 19, 2013
5. Recent developments of geosynthetic-reinforced column-supported embankments, Hebei Institute of Geotechnical Engineering, Shijiazhuang, China, May 31, 2013
6. Behavior of laterally loaded piles in an MSE wall, Beijing Jiaotong University, Beijing, China, May 29, 2013
7. Evaluation of lateral behavior of pile-supported bridges under scoured conditions, Huanan University of Technology, Guangzhou, China, May 27, 2013
8. Geocell-reinforced RAP pavements – a new and sustainable solution, Huanan University of Technology, Guangzhou, China, May 27, 2013
9. Column-supported Embankments on Soft Soils: Load Transfer, Consolidation, and Stability, Hohai University, China, May 18, 2013
10. Structural Response of a Low-Fill Box Culvert under Static and Traffic Loading, 2013 Transportation Research Board Annual Meeting, DC, January 14, 2013
11. Geosynthetic Reinforced Roadway Testing Under Cyclic Loading, Workshop “Deploying Soil and Rock Instrumentation to Solve Real Problems”, 2013 Transportation Research Board Annual Meeting, DC, January 13, 2013

12. Recent Advances of Column Technologies to Improve Soft Foundations, ASCE Kansas City Geotechnical Committee, January 11, 2013
13. Flexible pavements on geocell-reinforced RAP aggregate bases - a new and sustainable solution, Oklahoma Transportation Third Annual Summer Symposium, August 6, 2012
14. Laterally loaded piles in an MSE wall, Oklahoma Transportation Third Annual Summer Symposium, August 6, 2012
15. Evaluation of lateral behavior of pile-supported bridges under scoured conditions, Oklahoma Transportation Third Annual Summer Symposium, August 6, 2012
16. Evaluation of lateral behavior of pile-supported bridges under scoured conditions, Zhejiang University, China, July 26, 2012
17. Behavior of laterally loaded piles in an MSE wall, Central South University, China, July 17, 2012
18. Recent developments of geosynthetic-reinforced column-supported embankments, Hunan University, China, July 16, 2012
19. Evaluation of lateral behavior of pile-supported bridges under scoured conditions, Wuhan University of Technology, July 13, 2012
20. Design of MSE walls under special conditions, Wuhan University, China, July 13, 2012
21. Evaluation of lateral behavior of pile-supported bridges under scoured conditions, Huazhong University of Technology, China, July 12, 2012
22. Exploring geocell technology for roadway base reinforcement, Huazhong University of Technology, China, July 12, 2012
23. Evaluation of lateral behavior of pile-supported bridges under scoured conditions, China University of GeoScience, China, July 11, 2012
24. Evaluation of lateral behavior of pile-supported bridges under scoured conditions, Southeast University, China, July 9, 2012
25. Evaluation of lateral behavior of pile-supported bridges under scoured conditions, Shanghai Jiaotong University, China, July 6, 2012
26. Stability Analyses of Reinforced Earth Structures, ASCE Kansas City Geotechnical Committee, October 6, 2011
27. Exploring Geocell Technology for Roadway Base Reinforcement, Wenzhou University, June 24, 2011
28. Geosynthetic-reinforced MSE Walls to Support Laterally Loaded Piles, Tongji University, June 21, 2011
29. Stability Analyses of Reinforced Earth Structures, Southeast University, China, June 18, 2011
30. Exploring Geocell Technology for Roadway Base Reinforcement, Nanjing University of Technology, China, June 17, 2011
31. Laterally Loaded Piles in a Mechanically Stabilized Earth Wall, Dalian University of Science and Technology, June 15, 2011
32. Recent Development of Column-supported Embankments, Dalian University of Science and Technology, June 15, 2011
33. Geosynthetic Reinforced – Research and Applications, Qingdao Technological University, China, June 13, 2011
34. Design of Geosynthetics-Reinforced Earth Walls under Special Conditions, Shanghai Jiaotong University, China, June 4, 2011
35. Geocell for Base Reinforcement, the University of Nebraska, Dec. 17, 2010
36. Geocell-reinforced Recycled Asphalt Pavements – A Sustainable Solution, the University of Delaware and the Technion Institute Symposium, Haifa, Israel, Nov. 10, 2010
37. Recent Advances in Column Technologies to Improve Soft Soils, the Institution of Engineers, Malaysia, July 22, 2010
38. Recent Developments of Geosynthetic-reinforced Column-supported Embankments, Wollongong University, Australia, July 19, 2010
39. Geosynthetics and Ground Improvement, Griffith University, Australia, July 13 to 15, 2010



40. Geosynthetic-reinforced Earth Walls to Support Laterally Loaded Piles, Wenzhou University, China, June 17, 2010
41. Micromechanical Analysis of Geosynthetic-soil Interaction under Cyclic Loading, Hohai University, China, June 13, 2010
42. Exploring Geocell Technology for Roadway Base Reinforcement, Southeast University, China, June 11, 2010
43. Geosynthetic-reinforced Earth Walls to Support Laterally Loaded Piles, Taiyuan University of Technology, China, June 8, 2010
44. Consolidation settlement of stone column-reinforced foundations in soft soils, Symposium on New Techniques for Design and Construction on Soft Clays, Brazil, May 22, 2010
45. Exploring Geocell Technology for Roadway Base Reinforcement, the University of Illinois at Urbana-Champaign, March 18, 2010
46. Geosynthetic Reinforcement Technologies and Recent Developments, the Institution of Engineers, Malaysia, July 21, 2009
47. Ground Improvement Technologies, Southeast University, China, July 16-18, 2009
48. Geosynthetic Reinforcement Technologies and Recent Developments, Wenzhou University, China, May 26, 2009
49. Campus Life Enrichment Committee (CLEC) Lecture “Geosynthetic Reinforcement and Recent Developments”, Georgia Southern University, Statesboro, GA, Nov. 21, 2008
50. Behavior of Laterally Load Shafts Constructed Within an MSE Block Wall, Wuhan University, China, June 30, 2008
51. Behavior of Laterally Load Shafts Constructed Within an MSE Block Wall, Department of Road and Bridges at Huazhong University of Science & Technology, China, June 26, 2008
52. Behavior Experimental and Numerical Evaluation of Geocell-Reinforced Bases, Department of Geotechnical Engineering at Tongji University, China, June 24, 2008
53. Behavior Experimental and Numerical Evaluation of Geocell-Reinforced Bases, Department of Civil Engineering at Shanghai University, China, June 12, 2008
54. Behavior of Laterally Load Shafts Constructed Within an MSE Block Wall, Department of Geotechnical Engineering at Zhejiang University, China, June 10, 2008.
55. Technical Paper Writing in English – Reviewer’s Point of View, Tianjing University, China, June 6, 2008
56. Behavior of Laterally Load Shafts Constructed Within an MSE Block Wall, Department of Geotechnical Engineering at Tongji University, China, June 3, 2008
57. Geosynthetic Reinforcement for Riverside Slope Stability of Levees due to Rapid Drawdown, the 2nd International Conference on Geotechnical Engineering for Disaster Mitigation & Rehabilitation (GEDMAR08), Nanjing, China, May 30 to June 2, 2008
58. Behavior of Laterally Load Shafts Constructed Within an MSE Block Wall, Institute of Geotechnical Engineering at Southeast University, China, May 29, 2008
59. Insitu testing technologies – state of the art, presented to undergraduate class in geotechnical engineering at Tongji University, China, May 27, 2008
60. Design and Evaluation of Geosynthetic-Reinforced Roads, Geotechnical Distinguished Seminar Series, Department of Civil, Construction, and Environmental Engineering, Iowa State University, October 12, 2007
61. U.S. LRFD Design in Geotechnical Engineering, Tongji University, Shanghai, China, June 5, 2007
62. Research on Geocell-Reinforced Foundations, Southeast University, Nanjing, China, May 29, 2007
63. Coupled Mechanical and Hydraulic Modeling of Geosynthetic-Reinforced Column Supported embankments, Shanghai Jiaotong University, Shanghai, China, May 23, 2007
64. Development of China into a Modern Country – Another Great Leap Forward?, KU Center for East Asian Studies, May 2, 2007
65. LRFD Design for Deep Foundations, KU Professional Series, March 12, 2007
66. China: the World’s Largest Construction Site, KU Center for East Asian Studies, March 6, 2007

67. Geotechnical Options for Lowering Petroleum Costs, the 50<sup>th</sup> Annual Kansas Asphalt Paving Conference, Lawrence, KS, December, 7, 2006
68. Stresses and deformations induced by widening of existing embankments, the International Symposium of Lowland Technology, Saga University, Japan, September 14-16, 2006
69. Stability Analysis of Reinforced Earth Structures, the University of Missouri – Rolla, November 8, 2005
70. Stability Analysis of Reinforced Earth Structures using Numerical Methods, Saga University, Japan, September 8, 2005
71. Geosynthetic Reinforcement and Applications, Tongji University, China, July 28, 2005
72. Design of Geosynthetic-reinforced Roadways and Embankments, School of Transportation Engineering, Tongji University, China, July 26, 2005
73. Design of Pile-supported Embankments, Zhejiang University, China, July 21, 2005
74. Technical Paper Writing for Geotechnical Publications – Reviewer’s Point of View, Southeast University, China, July 14, 2005
75. Geotechnical education in U.S, Southeast University, China, July 14, 2005
76. Design of Geosynthetic-reinforced Roadways, Southeast University, China, July 13, 2005
77. Stability Analysis of Reinforced Earth Structures, Southeast University, China, July 13, 2005
78. Designing Geosynthetics for Highway Applications, Southeast University, China, July 12, 2005
79. Stability Analyses of Reinforced Earth Structures using Numerical Methods, Geotechnical & Geoenvironmental Engineering Seminar, the University of Missouri – Columbia, October 15, 2004
80. Geosynthetic-Reinforced Pile-Supported Embankments, Kansas City – ASCE/AEG/UMKC-Geotechnical Group, October 7, 2004
81. Geosynthetic-soil particle interaction, Micro-Geomechanics Workshop at Cambridge University in Cambridge, England, March 20 to 23, 2005, sponsored by the U.S. National Science Foundation (NSF)/ U.K. Engineering and Physical Sciences Research Council (EPSRC)
82. Geosynthetics-Reinforced Pile-Supported Embankments, Department of Civil and Environmental Engineering, University of Delaware, November 10, 2003
83. Geosynthetic-reinforced Pile-supported Embankments, Department of Civil, Architectural, and Environmental Engineering, Drexel University, October 28, 2003
84. Geotechnical Research at Widener University, the 4<sup>th</sup> USUCGER Workshop, Atlanta, GA, October 3, 2003, supported by NSF
85. Design of Geosynthetic-reinforced Pile-supported Embankments, Panama Geotechnical Community, Fall, 2002
86. Geosynthetic-Reinforced and Pile-Supported Foundation Systems”, Department of Civil Engineering, Saga University, Japan, September 3, 2002
87. Geosynthetic-Reinforced Pile-Supported Foundation Systems, NSF Geotechnical Composite System Workshop, Virginia Tech, July 28 and 29, 2002, supported by NSF
88. Design of Geosynthetic Reinforced Slopes and Walls, School of Civil and Environmental Engineering, the Georgia Institute of Technology, February & March 2001
89. Geogrid-Reinforced and Pile-Supported Earth Structures on Weak Foundation Soils, the Bridge Department at NCDOT, November 2000
90. An Experimental and Analytical Study of The Behavior of Fiber Reinforced Polymer Piles, Department of Civil and Environmental Engineering, Louisiana State University, May 2000
91. Numerical Study of Geosynthetic Reinforced and Pile Supported Fill Platforms over Soft Soil, Department of Civil and Environmental Engineering, Louisiana State University, February 2000
92. Lecture “Analysis of Geosynthetic Reinforced and Pile Supported Fill Platforms over Soft Soil”, invited, presented to the faculty and students at Department of Civil and Environmental Engineering, University of Utah, January 2000
93. Design of Mechanically Stabilized Retaining Walls, School of Civil and Environmental Engineering, the Georgia Institute of Technology, October 1999

94. Geosynthetic Reinforced and Piled Embankments over Soft Soil, Department of Civil and Environmental Engineering, University of Texas at Arlington, May 1999
95. The Use of Geosynthetics in Civil Engineering, School of Civil and Environmental Engineering, the Georgia Institute of Technology, November 1998
96. Geogrid Reinforced Soil Foundations, Froehling & Roberston 21<sup>st</sup> Annual Technical Seminar, January 1998
97. An Experimental and Analytical Study of Fiber Reinforced Polymer Piles in Sand and Pile-Sand Interactions, Department of Civil and Environmental Engineering, University of Delaware, March 1997

#### Short Courses

1. Design of Geosynthetic-reinforced Unpaved and Paved Roads, Long Beach, California, April 5, 2013
2. Geosynthetics for Stream Crossings and Channel Stabilization, A pre-conference session to the 2012 joint APWA/KCHA Spring conference, Newton, May 9, 2012
3. Recent Trends in Ground Improvement, the GeoFrontiers 2011, Dallas, Texas, March 13, 2011
4. Principles and Practice of Ground Improvement, the Association of Geotechnical Societies in Southeast Asia, Malaysia, July 22-23, 2010
5. Design of Geosynthetic-Reinforced Earth Structures, the Association of Geotechnical Societies in Southeast Asia, Malaysia, July 20 to 21, 2009
6. Geosynthetics Reinforcement in Embankment Foundations and Roads, Monash University, Australia, October 10, 2008
7. Geotextile Applications, Griffith University, Australia, September 29 to October 3, 2008.

#### **TECHNICAL/PROPOSAL/AWARD REVIEWER**

- Research Proposal Review for National Science Foundation
- Research Proposal Review for Czech Science Foundation
- Changjiang Scholars Review for Ministry of Education of P.R. China
- Research Proposal Review for NCHRP
- Research Project Review for Federal Highway Administration
- Research Proposal Review for Research Grant Council (RGC) of Hong Kong
- Acta Geotechnica
- Journal of Engineering Mechanics, ASCE
- Journal of Geotechnical and Geoenvironmental Engineering, ASCE
- Geotechnique
- Canadian Geotechnical Journal
- Transportation Research Board, Annual Meeting
- ASTM Geotechnical Testing Journal
- Geosynthetic International Journal
- International Journal of Geomechanics
- Geomechanics and Geoengineering: An International Journal
- Soils and Foundations
- Geotextiles and Geomembranes
- Computers and Geotechnics
- Environmental Geology
- Journal of Materials in Civil Engineering, ASCE
- Journal of Bridge Engineering, ASCE

- International Journal of Pavement Engineering
- Construction and Building Materials Journal
- Lowland Technology International Journal
- Journal of Zhejiang University Science
- ASCE GeoCongress, San Diego, CA, 2012
- ASCE GeoFrontiers, Dallas, TX, 2011
- ASCE GeoCongress, Oakland, CA, 2010
- International Foundation Congress & Equipment Expo 2009 - IFCEE '09
- ASCE Geo-Institute Conference: GeoCongress 2008
- GeoAmericas International Conference, Cancun, Mexico, March 2008
- ISGSR2007 First International Symposium on Geotechnical Safety and Risk, Shanghai, China, October, 2007
- ASCE Geo-Institute Conference: Geo-Denver 2007
- The 5th International Symposium on Earth Reinforcement, Fukuoka, Japan, 14-16th November, 2007
- The 8th International Geosynthetic Conference, 2006
- GeoShanghai International Conference, Shanghai, China, 2006
- ASCE GeoFrontiers, Austin, Texas, 2005
- ASCE Geo-Trans Conference, Los Angeles, 2004
- ASCE GeoSupport Conference, Orlando, 2004
- ASCE Geo-Institute Conference: Geo-Denver, Denver 2000
- ASCE Geo-Institute Conf. on Performance Verification of Constructed Geotechnical Facilities, 2000
- ASCE Geo-Institute Specialty Conference on Underground Facilities, 1999
- The Sixth International Geosynthetic Conference, 1998