

## CURRICULUM VITA

### Jiong Hu

Associate Professor  
Geotechnical and Materials Engineering  
Department of Civil Engineering  
College of Engineering  
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### BIOGRAPHICAL SKETCH

Dr. Jiong Hu received his BSc in Construction Materials in 1996 and MSc in Materials in 1999 from Southeast University, China, and his PhD in Geotechnical and Materials Engineering from Iowa State University in 2005. Dr. Hu is an experienced and energetic researcher and educator. He has had over fifteen years of experience in the professional practice of civil engineering, and material science and engineering, particularly in the cementitious materials area. Dr. Hu has served as a principal investigator (PI) or Co-PI nearly twenty projects, with a total amount of over one and a half million dollars funded. He has published nearly fifty peer-reviewed papers and technical reports, and is currently serving as an editor and reviewer for more than twenty different international and national journals. Dr. Hu is an active member of American Concrete Institute (ACI), Transportation Research Board (TRB), and Precast/Prestressed Concrete Institute (PCI). He is currently serving as chairman of ACI Committee 238 (Workability of Fresh Concrete) and secretary of ACI Committee 555 (Concrete with Recycled Materials). His research interests include eco-concrete, self-consolidation concrete (SCC), fresh concrete properties and rheology of concrete, ultra-high performance concrete (UHPC), concrete with recycled materials, and concrete pavement.

### EDUCATION

12/2005, *Ph.D.*, Geotechnical and Materials Engineering, Department of Civil, Construction, and Environmental Engineering, Iowa State University  
05/1999, *M.E.*, Materials, Department of Materials Science and Engineering, Southeast University, Nanjing, China  
06/1996, *B.E.*, Construction Materials, Department of Materials Science and Engineering, Southeast University, Nanjing, China

### ACADEMIC EXPERIENCE

08/2015-present, *Associate Professor*, University of Nebraska-Lincoln, Omaha, NE  
09/2014-08/2015, *Associate Professor*, Texas State University, San Marcos, TX  
07/2008-08/2014, *Assistant Professor*, Texas State University, San Marcos, TX  
12/2005-07/2008, *Postdoctoral Research Associate*, Iowa State University, Ames, IA

08/2002-12/2005, *Research/Teaching Assistant*, Iowa State University, Ames, IA

### **ACADEMIC AFFILIATIONS**

03/2016-present, Nebraska Center for Materials and Nanoscience, University of Nebraska-Lincoln, Lincoln, NE

### **COURSES TAUGHT**

University of Nebraska-Lincoln

CIVE 378 ..... Materials of Construction

CIVE 489/898 Advanced Materials of Construction

Texas State University

CSM 2342 Construction Materials and Processes

CSM 3363 Heavy, Civil, and Highway Construction System

CIM 3420 Fundamentals of Concrete: Properties and Testing

CIM 3330 Concrete Construction Methods

CIM 4330 Management of Concrete Products – Ordering and Scheduling

CIM 4340 Concrete Problems: Diagnosis, Prevention and Dispute Solutions

TECH 4390 Internship

TECH 5384 Problems in Technology

### **AWARDS AND HONORS**

College Achievement Awards for Excellence in Service, College of Science and Engineering, Texas State University (2015)

Presidential Distinction Awards for Excellence in Scholarly/Creative Activities, Texas State University (2014)

College Achievement Awards for Excellence in Teaching, College of Science and Engineering, Texas State University (2014)

College Achievement Awards for Excellence in Scholarly/Creative Activities, College of Science and Engineering, Texas State University (2011)

ACI Excellent University Award (Faculty Advisor, ACI Texas State University Student Chapter) (2012, 2013, 2014)

First Place – ACI Mortar Workability Student Competition (Faculty Advisor) (2014)

“Graduating Student Recognition of Campus Support Program”. Named by alumni from the School as one of the faculties that contributed significantly to their success and development: Tyrell Dillon (2013), Luzelva Estrada (2012), Braden Wallace (2012), Texas State University

“Student Veteran Appreciation of Campus Support Program”. Named by one veteran from the School as one of the faculties that contributed significantly to their success and development: Paul Skogen (2013), Texas State University

### **PROFESSIONAL ORGANIZATIONS**

Transportation Research Board (TRB) Committee Member

AFN20 Properties of Concrete

AFN40 Concrete Materials and Placement Techniques  
American Concrete Institute (ACI) Committee Member  
130 Sustainability of Concrete  
237 Self-Consolidating Concrete (Voting Member)  
238 Workability of Fresh Concrete (Chair)  
239 Ultra-High Performance Concrete  
555 Concrete with Recycled Materials (Secretary)  
S801 Student Activities (Voting Member)  
S803 Faculty Network  
Precast/Prestressed Concrete Institute (PCI) Member  
Concrete Materials Technology Committee (Voting Member)  
PCI Journal Advisory Committee (Consulting Member)

## RESEARCH GRANTS

Co-PI: C. Sim and J. Hu, "Standard Design for Nebraska County Bridges", Project Sponsor: Nebraska Department of Roads (NDOR), Amount: \$156,098, 07/2016-12/2017  
PI: J. Hu and Y. Kim, "Feasibility Study of Using Micro- and Nano- Clay as Additives in Concrete", Texas State University Research Enhance Program (REP), Amount \$8,160, 01/2015 – 12/2015.  
Co-PI: S. Lee, E. Humphries, J. Hu, and Y. Kim, "Improved Crack Sealant Application Methods", Project Sponsor: Texas Department of Transportation (TxDOT) (RTI 0-6832), Amount: \$229,640, 09/2014 – 08/2017.  
Co-PI: Z. Ge and J. Hu, "Rheology and Shrinkage Study of SCC with Recycled Fine Aggregate as Internal Curing Agent", Project Sponsor(s): National Science Foundation of China, Amount: \$133,546, 01/2015 – 12/2018.  
Co-PI: B. You, Y. Kim, I. Song, and J. Hu, "Assembly Tolerance Analysis for the Development of a Gas Turbine Rotor Stacking Software", Project Sponsor(s): KEPCO Plant Service & Engineering (KEPCO-KPS), Amount: \$72,726, 03/2013 - 09/2014.  
Co-PI: S. Lee, J. Hu, Y. Kim, "Development of Low-Carbon Low-Cost Asphalt Pavement: Evaluation of New Additive for Crumb Rubber Modified Asphalt Binders", Project Sponsor: Korea Institute of Construction Technology (KICT), Amount: \$19,355, 02/2013 – 11/2013.  
Co-PI: Y. Kim, and J. Hu, "Development of Sustainable Concrete with Recycled Carpet Fiber Reinforcement and Recycled Concrete", Project Sponsor(s): Texas State University Research Enhance Program (REP), Funded December 2012, Amount: \$16,000, 01/2013 – 12/2013.  
PI: J. Hu, D. Fowler, S. Lee, Y. Kim, and D. Whitney, "Feasibility Study of Two-Lift Concrete Paving", Project Sponsor: Texas Department of Transportation (TxDOT) (RTI 0-6749), Amount: \$136,947, 09/2012-08/2013.  
Co-PI: Y. Kim, J. Hu, S. Lee, C. Gaedicke, "Synthesis on Geosynthetic-Reinforced Steep Slopes", Project Sponsor: TxDOT (RTI 0-6792), Amount: \$49,984, 09/2012-08/2013.  
Co-PI: Y. Lu, D. Tamir, J. Hu, and H. Shi, "Automated Crack Documentation Using Digital Images-Scoping Study", Project Sponsor: TxDOT (RTI 0-6789), Amount: \$94,376, 09/2012-08/2013.

Co-PI: Y. Kim, J. Hu, and S. Lee, "Review of Quality System Manual (QSM) for Precast/Prestressed Concrete: PCI Level II", Project Sponsor: Pittsburgh Flexicore, Amount \$6,000, 09/2011-03/2012.

Co-PI: M. C. Won, S. Senadheera S., D. Fowler, and J. Hu, "Optimizing Concrete pavement Type Selection Based on Aggregate Availability", Project Sponsor: TxDOT (RTI 0-6681), Amount \$170,000, 09/2011-08/2012.

PI: J. Hu, Y. Kim and S. Lee, "Synthesis on Cost Effectiveness of Extradosed Bridges", Project Sponsor: TxDOT (RTI 0-6729), Amount \$49,984, 09/2011-08/2012.

Co-PI: S. Lee, J. Hu, and Y. Kim, "Costs Associated with Conversion of Surfaced Roads to Unsurfaced Roads", Project Sponsor: TxDOT (RTI 0-6677), Amount \$118,112, 09/2011-08/2012.

Co-PI: S. Lee, J. Hu, C. Gaedicke and Y. Kim, "Synthesis of Microsurfacing Successes and Failures", Project Sponsor: TxDOT (RTI 0-6668), Amount \$49,931, 11/2010 – 08/2011.

Co-PI: F. Bektas, and J. Hu, "Use of Waste Clay Brick as Cement Additive in Concrete: Feasibility Study in the State of Texas", Project Sponsor: Texas State University Research Enhance Program (REP), Amount: \$16,000, 01/2010 – 12/2010.

PI: J Hu, D. Hahn, W. Rudzinski, C. Powell, N. Guven, S. Lee, and G. Beall, "Evaluation, Presentation and Repair of Microbial Acid-Produced Attack of Concrete", Project Sponsor(s): TxDOT (RTI 0-6137), Amount \$252,557, 09/2009 – 08/2011.

PI: J. Hu, "Self-compacting concrete using recycled concrete aggregate", Project Sponsor: Texas State University Research Enhance Program (REP), Amount \$8,000, 01/2009 – 12/2009.

Research Associate: "Impact of Low Shrinkage Mixes on Late-age Random Cracking in Pavements with Use of Early Entry Sawing", Project Sponsor: Iowa highway research board (IHRB), TR-587, 04/2008-7/2008.

Co-PI: K. Wang, J. Hu, and J. Gaunt, "Sequestering Lead in Paint by Utilizing Deconstructed Masonry Materials as Recycled Aggregate in Concrete", Project Sponsor: Strategic Environmental Research and Development Program (SREDP) from the Department of Defense's (DoD) corporate environmental R&D program, Amount \$99,985, 01/2007-12/2007.

Research Associate: "Simple and Rapid Test for Monitoring the Heat Evolution of Concrete Mixtures for Laboratory and Field Applications", Project Sponsor: Federal Highway Administration (FHWA), 07/2007-07/2008.

Research Associate: "Investigation into Freezing-Thawing Durability of Low Permeability Concrete with and without Air Entraining Agent", Project Sponsor: Iowa Department of Transportation (DOT), 06/2007-08/2007.

Research Associate: "Material Thermal Input for Iowa Materials for MEPDG", Project Sponsor: Iowa DOT, 06/2006-06/2007.

Research Associate: "Testing Iowa Portland Cement Concrete Mixtures for the Mechanistic-Empirical Pavement Design Guide (MEPDG)", Project Sponsor: Iowa DOT, 06/2006-03/2007.

Research Assistant/Research Associate: "Self-Compacting Concrete (SCC) Applications for Slip Form Paving", Project Sponsor(s): Federal Highway Administration (FHWA), Iowa DOT, Kansas DOT, Nebraska Department of Roads, New York State DOT, Washington State DOT, Active Minerals, W R Grace, (Transportation pooled fund program), 08/2004-12/2006.

Research Assistant: "Testing Program for the Evaluation of Fly Ash Produced at Ottumwa Generating Station", Project Sponsor: Charition Valley RC&D, 05/2004-08/2004.

Research Assistant: "Material and Construction Optimization for Prevention of Premature Pavement Distress in PCC Pavements", Project Sponsor: FHWA, 07/2003-07/2004.

Research Assistant: Materials and Mix Optimization Procedures for PCC Pavements, Project Sponsor: Iowa Highway Research Board (IHRB), 08/2002-12/2004.

## REFEREED JOURNAL PAPERS

- J. Hu, I. Levi Souza, and F. Cortês Genarini, Engineering and Environmental Performance of Eco-Efficient Self Consolidating Concrete (Eco-SCC) with Low Powder Content and Recycled Concrete Aggregate, *Journal of Sustainable Cement-Based Materials*, Accepted 8/21/2016, DOI: 10.1080/21650373.2016.1230901.
- A. Torres, and J. Hu, "An Alternate Test Method for the Void Content of Pervious Concrete", *Advances in Civil Engineering Materials*, Vol. 5, No. 1, pp. 24-45, 2016.
- A. Torres, J. Hu, and A. Ramos, "The Effect of the Cementitious Paste Thickness on the Performance of Pervious Concrete", *Construction and Building Materials*, Vol. 95, pp. 850-859, 2015.
- H. Kim, E. Humphries, J. Hu, S. Lee, and M. Lee, "Tight Budgets and Roadway Maintenance: The Need for Further Study of the Conversion/Reconversion Scenario for Low-Volume Roadways", *International Journal of Highway Engineering*, Vol.17, No.3, pp.1-12, 2015.
- A. Kotwal, Y. Kim, J. Hu, and V. Sriraman, "Characterization and Early Age Physical Properties of Ambient Cured Geopolymer Mortar Based on Class C Fly Ash", *International Journal of Concrete Structures and Materials*, August 2014.
- J. Hu, K. Wang, and F. Bektas, "Monitoring of Joint Cracking Development in Concrete Pavement with Concrete Embedment Strain Gages", *ASCE Geotechnical Special Publications on Sustainable Civil Infrastructures: Innovative Technologies and Materials*, GSP 246, July 2014.
- J. Hu, S. Lee, Y. Kim and M. Mahgoub, "Inspection and Nondestructive Evaluation of Concrete Bridge with Environmental Deterioration", *ASCE Geotechnical Special Publications on Climatic Effects on Pavement and Geotechnical Infrastructure*, pp. 193-203, March 2014.
- J. Hu, Z. Ge, and K. Wang, "Influence of Cement Fineness and Water-to-Cement Ratio on Mortar Early-Age Heat of Hydration and Set Times", *Journal of Construction and Building Materials*, Vol. 50, No. 1, pp. 657-663, 2014.
- J. Hu, Z. Wang and Y. Kim, "Feasibility Study of using Fine Recycled Concrete Aggregate in Producing Self-Consolidation Concrete", *Journal of Sustainable Cement-Based Materials*, Vol. 2, No. 1, pp. 20-34, 2013.
- J. Hu, K. Wang, and J. A. Gaunt, "Behavior and Mix Design Development of Concrete Made with Recycled Aggregate from Deconstructed Lead-Contaminated Masonry Materials", *Construction and Building Materials*, Vol.40, pp. 1184-1192, 2013.
- J. Hu, K. Wang and Z. Ge, "Study of Concrete Thermal Properties for Sustainable Pavement Design", *Journal of Sustainable Cement-Based Materials*, Vol. 1, No. 3, pp. 126-137, 2012.
- Y. Kim, T.G. Harmon, J. Hu and S. Lee, "Mechanical Properties of Aerated Lightweight Aggregate Concrete", *Magazine of Concrete Research*, Vol. 64, No. 3, pp. 189-199, 2012.
- V. Sriraman, and J. Hu, "Preparing the Next Generation Concrete Construction Professionals – the Concrete Industry Management Degree", *World Transactions on Engineering and Technology Education*, Vol. 10, No. 1, pp. 53-58, 2012.

- Y. Kim, J. Hu, S. Lee, B. J. Broughton, "Prediction of Compressive Strength of Aerated Lightweight Aggregate Concrete by Artificial Neural Network", *Applied Mechanics and Materials*, Vol. 84-85, pp. 177-182, 2011.
- J. Hu, K. Wang, J. A. Gaunt, "Sequestering Lead by Utilizing Lead-Based Paint (LBP) – Contaminated Masonry Materials as Recycled Aggregate in Portland Cement Concrete", *Journal of Solid Waste Technology and Management*, Vol. 37, No.4, pp. 260-272, 2011.
- J. Hu, and K. Wang, "Effect of Coarse Aggregate Characteristics on Concrete Rheology", *Journal of Construction and Building Materials*, vol. 25, No. 3, pp. 1196-1204, 2011.
- S. Lee, J. Hu, H. Kim, S. N. Amirkhanian, and K. Jeong, "Aging Analysis of Rubberized Asphalt Binders and Mixes Using Gel Permeation Chromatography", *Journal of Construction and Building Materials*, Vol. 25, No. 3, pp. 1485-1490, 2011.
- Y. Kim, J. Hu, S. Lee, B. J. Broughton, "Prediction of Compressive Strength of Aerated Lightweight Aggregate Concrete by Artificial Neural Network", *Applied Mechanics and Materials*, Vol. 84-85, pp. 177-182, Green Power, Materials and Manufacturing Technology and Applications (GPMMTA), 2011.
- Q. Xu, M. Ruiz, J. Hu, K. Wang, and R. Rasmussen, "Modeling Hydration Properties and Temperature Developments of Early-Age Concrete Pavement Using Calorimetry Tests", *Thermochimica Acta*, Vol. 512, No. 1-2, pp. 76-85, 2011.
- Y. Kim, J. Hu, S. Lee, and B. You, "Mechanical Properties of Fiber Reinforced Lightweight Concrete Containing Surfactant" *Advances in Civil Engineering*, Vol. 2010, pp. 1-8, 2010.
- J. Hu, K. Wang, and J. A. Gaunt, "Recycling Lead-Based Paint Contaminated Deconstructed Masonry Materials as Aggregate for Portland Cement Concrete – A Cost Effective and Environmental Friendly Approach", *Resources, Conservation and Recycling*, Vol. 54, No. 12, pp. 1453-1460, 2010.
- J. Hu, K. Wang, and Z. Ge, "Study of the Mechanical Properties of Iowa Concrete Pavement for use in the Mechanistic-Empirical Pavement Design Guide (MEPDG)", *Geotechnical Special Publication on Paving Materials and Pavement Analysis*, No. 203 GSP, pp. 169-175, 2010.
- Q. Xu, J. Hu, J. M. Ruiz, K. Wang, and Z. Ge, "Isothermal Calorimetry Tests and Modeling of Cement Hydration Parameters", *Thermochimica Acta*, Vol. 499, No. 1-2, pp. 91-99, 2010.
- J. Hu and K. Wang, "Effects of Size and Uncompacted Voids of Aggregate on Mortar Flow Ability," *Journal of Advanced Concrete Technology*, Vol. 5, No. 1, pp. 75-85, 2007.
- K. Wang and J. Hu, "Use of a Moisture Sensor for Monitoring the Effect of Mixing Procedure on Uniformity of Concrete Mixtures," *Journal of Advanced Concrete Technology*, Vol. 3, No. 3, pp. 371-384, 2005.
- K. Wang, S. M. Schlorholtz, J. Hu and S. Zhang, "Investigation into Flow Property Measurements of Low-Slump Concrete Using Vibrating Slope Apparatus (VSA)", *ASTM International Journal*, Vol. 2, No. 5, pp. 187-204, 2005.

#### **REFEREED CONFERENCE PAPERS**

- J. Hu, B. Ledsinger, and Y. Kim, "Development of Eco-Efficient Self Consolidating Concrete (Eco-SCC) with Recycled Concrete Aggregate", 8th International RILEM Symposium on Self-Compacting Concrete and 6th North American Conference on Design and Use of Self-Consolidating Concrete, Washington, DC, May 15-18, 2016.

- J. Hu, E. Humphries, and A. Kotwal, "Optimizing Concrete Pavement Type Selection Based on Life Cycle Cost Analysis", International Concrete Sustainability Conference, Miami, FL, May 11-13, 2015.
- J. Ellis, J. Hu and V. Sriraman, "Modeling the Life-Cycle Impact (LCI) of Concrete through Comparative Life Cycle Analysis (LCA)", International Concrete Sustainability Conference, Miami, FL, May 11-13, 2015.
- D. Holt, M. Londa, M. Snead, M. Mullen, P. Bateman, J. Hu and R. Pierson, "Evaluation of the Effect of Recycled Tire Rubber as Fine Aggregate Replacement on Concrete Properties", International Concrete Sustainability Conference, Miami, FL, May 11-13, 2015.
- A. Torres, J. Hu, and A. Ramos, "The Effect of the Cementitious Paste Thickness on the Performance of Pervious Concrete", Engineering Mechanics Institute Conference, Hamilton, Ontario, Canada, August 5-8, 2014.
- J. Hu, S. Siddiqui, D. Fowler, and D. Whitney, "Experiences and Perceptions of Two-Lift Concrete Paving", Geohubei 2014, Yichang, China, July 2014.
- J. Hu, A. Ortiz, and V. Sriraman, "Implementing PBL in a Concrete Construction Course", ASEE Annual Convention, Indianapolis, IN, June 2014.
- J. Hu, S. Siddiqui, D. Fowler, and D. Whitney, "Two-Lift Concrete Paving – Case Studies and Reviews from Sustainability, Cost Effectiveness and Construction Perspectives", 93rd Annual Transportation Research Board Meeting, Washington D.C., January 12-16, 2014.
- P. Rose, B. Aaron, D.E. Tamir, L. Lu, J. Hu, and H. Shi, "Supervised Computer-vision Based Sensing of Concrete Bridges for Crack Detection and Assessment", 93rd Annual Transportation Research Board Meeting, Washington D.C., January 12-16, 2014.
- J. Hu, Y. Kim and S. Lee, "Behavior of Self-Consolidation Concrete with Recycled Concrete Aggregate", Fifth North American Conference on the Design and Use of Self-Consolidating Concrete (SCC2013), Chicago, IL, May 2013.
- J. Hu, V. Sriraman and Y. Wang, "Challenges and Experiences in Teaching a Concrete Problems Diagnosis and Repair Course", ASEE Annual Convention, San Antonio, TX, June 2012.
- J. Hu, D. Hahn, W. Rudzinski, Z. Wang and L. Estrada, "Inspection of Texas Concrete Bridge Pillars with Suspected Microbial-Induced Deterioration", 91st Transportation Research Board (TRB) Annual Meeting, Washington, DC, January, 2012.
- J. Hu, Z. Wang, and Y. Kim, "Feasibility Study of Using Recycled-Concrete Fine Aggregate in Self Consolidation Concrete", 2011 Concrete Sustainability Conference, Boston, MA, August 9-11, 2011.
- V. Sriraman, and J. Hu, "A New Construction Related Degree at Texas State University-San Marcos", 2011 Conference for Industry & Education Collaboration (CIEC), San Antonio, February 2-4, 2011.
- J. Hu, K. Wang, J. A. Gaunt, "Design Concrete with Recycled Lead-Contaminated Deconstructed Masonry Materials as Aggregate", International Conference on Sustainable Urbanization (ICSU 2010), Hong Kong, China, 15-17 December, 2010.
- J. Hu, K. Wang, and Z. Ge, "Study of Iowa PCC Thermal Properties for Mechanistic-Empirical Pavement Design", Proceedings of the 2009 Mid-Continent Transportation Research Symposium, Ames, Iowa, August 2009.

- Q. Xu, M. Ruiz, K. Wang, J. Hu, S. I. Garber, and R. O. Rasmussen, Evaluating Hydration Characteristics and HIPERPAV Prediction of Temperature Development in Early-Age Concrete Pavement, 88th Annual TRB Meeting, Washington D.C., January 2009.
- J. Hu and K. Wang, "Effects of Aggregate on Flow Properties of Mortar," Mid-Continent Transportation Research Symposium, Ames, Iowa, August 2005.
- J. Hu, J. Fu, J. Herman and J. Ma, "Concrete Electromagnetic Properties Study Using Open-ended Coaxial Probe Method," Progress in Electromagnetics Research Symposium (PIERS), Osaka, Japan, July 2001.

## PROJECT REPORTS

- J. Hu, Y. Kim, and S. Lee, "Synthesis on Cost-Effectiveness of Extradosed Bridges: Technical Report", FHWA/TX-12/0-6729-1, 2016, <http://tti.tamu.edu/documents/0-6729-1.pdf>.
- Y. Kim, J. Hu, S. Lee, A. R. Kotwal, and J. W. Dickey, "Geosynthetic Reinforced Steep Slopes", FHWA/TX-14/0-6792-1, 2016, <http://tti.tamu.edu/documents/0-6792-1.pdf>.
- J. Hu, D. Fowler, M. S. Siddiqui, and D. Whitney, "Feasibility Study of Two-Lift Concrete Paving: Technical Report", FHWA/TX-14/0-6749-1, 2014, <http://tti.tamu.edu/documents/0-6749-1.pdf>.
- S. Ryu, P. Choi, W. Zhou, S. Saraf, S. Senadheera, J. Hu, S. Siggiqui, D. Fowler, M. C. Won, "Optimizing Concrete Pavement Type Selection Based on Aggregate Availability", FHWA/TX-13-0-6681-1, <http://www.depts.ttu.edu/techmrtweb/Reports/Complete Reports/0-6681-1 Final.pdf>
- J. Hu, D. Hahn, W. Rudzinski, Z. Wang, and L. Estrada, "Evaluation, Presentation and Repair of Microbial Acid-Produced Attack of Concrete", FHWA/TX-11/0-6137-1, 2011, <http://tti.tamu.edu/documents/0-6137-1.pdf>.
- K. Wang, J. Hu, F. Bektas, P. Taylor, and H. Ceylan, "Impact of Low Shrinkage Mixes on Late-age Random Cracking in Pavements with Use of Early Entry Sawing", IHRB, February 2009, <http://www.intrans.iastate.edu/reports/sawing.pdf>.
- K. Wang, J. M. Ruiz, J. Hu, Z. Ge, Q. Xu, J. Grove, R. Rasmussen, and T. Ferragut, "Developing a Simple and Rapid Test for Monitoring the Heat Evolution of Concrete Mixtures for both Laboratory and Field Applications-Phase III", FHWA DTFH-61-06-H-00011, <http://www.intrans.iastate.edu/research/documents/research-reports/CalorimeterReportPhaseIII.pdf>.
- K. Wang, J. Gaunt, and J. Hu, "Sequestering Lead in Paint by Utilizing Deconstructed Masonry Materials as Recycled Aggregate in Concrete", Strategic Environmental Research and Development Program (SERDP), Department of Defense's (DoD) corporate environmental research and development (R&D) program, Project SI 1548, May 2008, <http://www.serdp.org/Research/upload/SI-1548-FR.pdf>.
- K. Wang, J. Hu, and Z. Ge, "Task 4: Testing Iowa Portland Cement Concrete Mixtures for the AASHTO Mechanistic-Empirical Pavement Design Procedure", Iowa Department of Transportation, (CTRE Project 06-270), May 2008, [http://www.ctre.iastate.edu/reports/mepdg\\_testing.pdf](http://www.ctre.iastate.edu/reports/mepdg_testing.pdf).
- K. Wang, J. Hu, and Z. Ge, Task 6: Material Thermal Input for Iowa Materials for the AASHTO Mechanistic-Empirical Pavement Design Procedure, May 2008, Iowa Department of



Transportation (CTRE Project 06-272),  
<http://www.ctre.iastate.edu/reports/mepdg-task6.pdf>.

- K. Wang, S. P. Shah, D. J. White, J. Gray, T. Voigt, G. Lu, J. Hu, C. Halverson, and B. Y. Pekmezci, "Self-Consolidating Concrete - Applications for Slip Form Paving, Phase I", November 2005, FHWA Transportation Pooled Fund Study TPF-5(098), [http://www.ctre.iastate.edu/reports/scc\\_pave.pdf](http://www.ctre.iastate.edu/reports/scc_pave.pdf).
- S. Schlorholtz, K. Wang, J. Hu, S. Zhang, "Materials and Mix Optimization Procedures for PCC Pavements", IHRB Project TR-484, Iowa DOT (CTRE Project 02-116), Federal Highway Administration (Project 3), March 2006, [http://www.ctre.iastate.edu/reports/materials\\_optimization\\_web.pdf](http://www.ctre.iastate.edu/reports/materials_optimization_web.pdf).

### HOSTED WORKSHOPS

- J. Hu, and D. Fowler, "Two-Lift Concrete Paving", Austin, TX, May 23rd, 2013, <http://blogs.utexas.edu/ctr/2013/07/18/2lcp-workshop/>

### INVITED TALKS

- J. Hu, "Development of Eco-Efficient Self Consolidating Concrete (Eco-SCC) with Recycled Concrete Aggregate (RCA)", UKC 2016, Dallas, TX, August 10-13, 2016.
- J. Hu, "Behavior of Self-Consolidation Concrete with Recycled Concrete Aggregate", Hunan University, Changsha, China, July 24, 2014.
- J. Hu, "Behavior of Self-Consolidation Concrete with Recycled Concrete Aggregate", Xiamen Academy of Building Research Group Co. LTD, Xianmen, China, July 16, 2014.
- J. Hu, K. Wang, and J. Gaunt, "Recycling Lead-Based Paint Contaminated Deconstructed Masonry Materials as Aggregate for Portland Cement Concrete – A Cost Effective and Environmental Friendly Approach", 2013 ASCE CI Summit, Dallas, Texas, September 2013.
- J. Hu, 2010 TACA Environmental Seminar, Recycling Lead-Based Paint Contaminated Deconstructed Masonry Materials as Aggregate for Portland Cement Concrete – A Cost Effective and Environmental Friendly Approach, San Antonio, September, 2010
- J. Hu, "Concrete Rheology Modeling Based on Mix Design and Material Properties", Southeast University, Nanjing, China, May 2007.

### CONCRETE PRESENTATIONS

- J. Hu, B. Ledsinger, and Y. Kim, "Development of Eco-Efficient Self Consolidating Concrete (Eco-SCC) with Recycled Concrete Aggregate", 8th International RILEM Symposium on Self-Compacting Concrete and 6th North American Conference on Design and Use of Self-Consolidating Concrete, Washington, DC, May 15-18, 2016.
- J. Hu, E. Humphries, and A. Kotwal, "Optimizing Concrete Pavement Type Selection Based on Life Cycle Cost Analysis", International Concrete Sustainability Conference, Miami, FL, May 11-13, 2015.
- J. Ellis, J. Hu and V. Sriraman, "Modeling the Life-Cycle Impact (LCI) of Concrete through Comparative Life Cycle Analysis (LCA)", International Concrete Sustainability Conference, Miami, FL, May 11-13, 2015.

- D. Holt, M. Londa, M. Snead, M. Mullen, P. Bateman, J. Hu and R. Pierson, "Evaluation of the Effect of Recycled Tire Rubber as Fine Aggregate Replacement on Concrete Properties", International Concrete Sustainability Conference, Miami, FL, May 11-13, 2015.
- B. Ledsinger, and J. Hu, "Eco-SCC with Recycled Concrete Aggregate", Undergraduate Research, ACI Spring 2015 Convention, Kansas City, MO, April, 2015.
- Torres, J. Hu, and A. Ramos, "The Effect of the Cementitious Paste Thickness on the Performance of Pervious Concrete", Engineering Mechanics Institute Conference, Hamilton, Ontario, Canada, August 5-8, 2014.
- J. Hu, S. Siddiqui, D. Fowler, and D. Whitney, "Experiences and Perceptions of Two-Lift Concrete Paving", Geohubei 2014, Yichang, China, July 2014.
- Ramos, A. Torres, and J. Hu, "Correlation of the Cementitious Paste Thickness to the Performance Properties of Pervious Concrete", Texas State University Undergraduate Research Conference, San Marcos, TX, April 25, 2014.
- J. Hu, S. Siddiqui, D. Fowler, and D. Whitney, "Two-Lift Concrete Paving – Case Studies and Reviews from Sustainability, Cost Effectiveness and Construction Perspectives", 93rd Annual Transportation Research Board Meeting, Washington D.C., January 12-16, 2014.
- P. Rose, B. Aaron, D.E. Tamir, L. Lu, J. Hu, and H. Shi, "Supervised Computer-vision Based Sensing of Concrete Bridges for Crack Detection and Assessment", 93rd Annual Transportation Research Board Meeting, Washington D.C., January 12-16, 2014.
- J. Hu, Y. Kim and S. Lee, "Behavior of Self-Consolidation Concrete with Recycled Concrete Aggregate", Fifth North American Conference on the Design and Use of Self-Consolidating Concrete (SCC2013), Chicago, IL, May 2013.
- J. Hu, Y. Kim and S. Lee, "Behavior of Self-Consolidation Concrete with Recycled Concrete Aggregate", ACI Spring Convention, Committee 555 – Concrete with Recycled Materials, Minneapolis, MN, April 2013.
- J. Hu, D. Hahn, W. Rudzinski, Z. Wang and L. Estrada, "Inspection of Texas Concrete Bridge Pillars with Suspected Microbial-Induced Deterioration", 91st Transportation Research Board (TRB) Annual Meeting, Washington, DC, January, 2012.
- J. Hu, Z. Wang, and Y. Kim, "Feasibility Study of Using Recycled-Concrete Fine Aggregate in Self Consolidation Concrete", 2011 Concrete Sustainability Conference, Boston, MA, August 9-11, 2011.
- J. Hu, K. Wang, J. A. Gaunt, "Design Concrete with Recycled Lead-Contaminated Deconstructed Masonry Materials as Aggregate", International Conference on Sustainable Urbanization (ICSU 2010), Hong Kong, China, 15-17 December, 2010.
- J. Hu, K. Wang, and Z. Ge, "Study of Iowa PCC Thermal Properties for Mechanistic-Empirical Pavement Design", Proceedings of the 2009 Mid-Continent Transportation Research Symposium, Ames, Iowa, August 2009.
- Q. Xu, M. Ruiz, K. Wang, J. Hu, S. I. Garber, and R. O. Rasmussen, Evaluating Hydration Characteristics and HIPERPAV Prediction of Temperature Development in Early-Age Concrete Pavement, 88th Annual TRB Meeting, Washington D.C., January 2009.
- K. Wang, and J. Hu, "AASHTO Mechanistic-Empirical Pavement Design Procedure", 2008 North-Central M-E PDG User Group Meeting, Ames, IA, February 2008.

- J. Hu and K. Wang, "Effects of Aggregate on Flow Properties of Mortar," Mid-Continent Transportation Research Symposium, Ames, Iowa, August 2005.
- J. Hu, J. Fu, J. Herman and J. Ma, "Concrete Electromagnetic Properties Study Using Open-ended Coaxial Probe Method," Progress in Electromagnetics Research Symposium (PIERS), Osaka, Japan, July 2001.

## PROFESSIONAL REVIEWS

### Editor

ASCE Geotechnical Special Publications on Sustainable Civil Infrastructures: Innovative Technologies and Materials

### Journal Paper Reviewer

American Concrete Institute (ACI) Material Journal  
International Journal of Physical Sciences  
Journal of ACS Applied Materials & Interfaces  
Journal of Advances in Civil Engineering Materials  
Journal of ASTM International  
Journal of Cement & Concrete Composites  
Journal of Chemical Papers  
Journal of Composite Materials  
Journal of Computational Materials Science  
Journal of Construction and Building Materials  
Journal of Construction Education and Research  
Journal of Hazard Materials  
Journal of Materials in Civil Engineering  
Journal of Physical Chemistry Chemical Physics  
Journal of Powder Technology  
Journal of Resources, Conservation & Recycling  
Journal of Sustainable Cement-Based Materials  
Journal of Testing and Evaluation  
Journal of Thermochemica Acta  
Journal of Transportation Engineering  
Journal of Transportation Research Record  
KSCE Journal of Civil Engineering

### Conference Committee:

Technical Organizing Committee, GeoChina 2016, July 25-27, 2016, Shandong, China  
Scientific Committee, SCC 2016, May 15-18, 2016, Washington DC

### Conference Paper Review:

Geohubei International Conference on Sustainable Civil Infrastructures: Innovative Technologies and Materials (Geohubei 2014)  
Transportation Research Board (TRB) Annual Meeting  
International Symposium of Climatic Effects on Pavement and Geotechnical Infrastructure (ISCEPGI)  
Fifth North American Conference on the Design and Use of Self-Consolidating Concrete

(SCC 2013)

2011 Mid-Continent Transportation Research Symposium  
GeoShanghai International Conference (GeoShanghai 2010)

Book Review:

Construction Planning, Equipment, and Methods, Peurifoy, Schexnayder, Shapira, and Schmitt, 8th edition, McGraw Hill

### **GRADUATE THESES SUPERVISION**

Reza Behzadpour, Doctor of Philosophy, (Dissertation Topic: TBD), Department of Civil Engineering, University of Nebraska-Lincoln, 08/2016-present.

Philip Moseman, Master of Science, Department of Civil Engineering, University of Nebraska-Lincoln, 02/2016-08/2016.

Harnish Sharma, Master of Science, (Thesis Topic: Life Cycle Analysis and Life Cycle Cost Analysis for Pavement Construction), Department of Engineering Technology, Texas State University, 03/2015-08/2015.

Eric Adams, Master of Science, (Thesis Topic: Evaluation of Flowability and Stability of Mortars and Grouts with Virgin and Recycled Aggregate), Department of Engineering Technology, Texas State University, 01/2014-08/2015.

Zhuo Wang, Master of Science, (Theses Topic: The Effects of Fine Recycled-Concrete Aggregates Moisture Conditions on Rheological Behaviors of Self-Consolidating Concrete and Mortar), Department of Engineering Technology, Texas State University, 06/2010-05/2012.

### **GRADUATE THESES COMMITTEES**

Committee Member: Ash Kotwal, Doctor of Philosophy, (Dissertation Topic: Alkaline Activation of Ambient Cured Geopolymer Mortar and Concrete Based on Class C Fly Ash), Materials Science, Engineering and Commercialization, Texas State University, 01/2014-08/2015

Committee Member: Kyunhwan Kim, Master of Science (Theses Topic: Performance Properties of CRM Asphalt Binders Containing Wax Additives), Department of Engineering Technology, Texas State University, 04/2014-08/2014

Committee Member: Ash Kotwal, Master of Science (Theses Topic: Alkaline Activation of Ambient Cured Geopolymer), Department of Engineering Technology, Texas State University, 03/2012-12/2012.

Committee Member: Cade Humphries, Master of Science (Theses Topic: Examination of Cost Benefits for Converting Surfaced Roads to Un-surfaced Roads in Texas), Department of Engineering Technology, Texas State University, 03/2012-12/2012.

Committee Member: Luzelva Estrada, Master of Science, (Theses Topic: Evaluation, Prevention and Repair of Microbial Acid-Produced Attack of Concrete), Department of Chemistry and Biochemistry, Texas State University, 01/2011-12/2011.

### **NONTHESES GRADUATE STUDENT RESEARCH SUPERVISION**

Jake Ellis, Life Cycle Analysis and Environmental Benefits of Using Recycled Concrete Aggregate in Concrete Construction, Department of Engineering Technology, Texas State University, 09/2014-05/2015

Ben Colvin, Life Cycle Analysis and Life Cycle Cost Analysis of Using Recycled Concrete Aggregate in Concrete Construction, Interdisciplinary Studies with a Concentration in Sustainability, Texas State University, 09/2013-12/2014

Aidil Misra, Evaluation of Rheological Behavior of Cement-Based Paste and Mortar, Department of Engineering Technology, Texas State University, 12/2013-05/2014

Fei Sun, Effect of Fine Aggregate Moisture Content on Mortar Behavior, Department of Engineering Technology, Texas State University, 09/2012-05/2013

Michael Grams, Feasibility of Two-Lift Concrete Paving, Department of Engineering Technology, Texas State University, 09/2012-04/2013

### **UNDERGRADUATE STUDENT RESEARCH SUPERVISION**

Icaro Levi Souza (05/2016-08/2016), Felipe Cortês Genarini (07/2016-08-2016), University of Nebraska-Lincoln,

Declan Ward (2014-2015), David Sittiz (2014-2015), Brian Ledsinger (2014-2015), Cole Pilgrim (2014), Alfredo Gonzalez (2012-2014), Santos Verdin (2013-2014), Eric Adams (2013), Paul Skogen (2012-2013), Nicholas Nelson (2012-2013), David Mack (2012-2013), Breena Madrid (2012), Chase David (2011-2012), Garrett McSpadden (2011-2012), Sawyer Flache (2011-2012), Daniel Calhoun (2010-2012), Michael Kibodeaux (2011), Joshua Pruitt (2010-2011), Michael Draper (2009-2010), Texas State University

### **TEACHING GRANTS**

Co-Principal Investigator (Co-PI): J. Tate, J. Hu, "Major Upgrade of the RFM 1239: Computer Integrated Manufacturing Laboratory to Offer High-Performance Computing and Visualization for Engineering and Technology Students. A Collaborative Proposal between the Ingram School of Engineering and the Department of Technology", Project Sponsor(s): Texas State University, Amount \$42,500, 04/2009 – 09/2009.

### **SERVICE GRANTS**

Faculty Advisor, "Rising Star STEM Grant for Student Organizations (Texas State University ACI Student Chapter)", Funding Agent: Texas State University LBJ Institute for Science, Technology, Engineering and Mathematics (STEM) Education & Research, (Funded through National Science Foundation Award Number 1431578: Texas State STEM Rising Stars), Amount: \$400, 04/2015 – 08/2015.

### **SERVICE**

Serving as Board Member, ACI Nebraska Chapter (01/2016-present)

Serving as Faculty Co-Advisor to University of Nebraska-Lincoln Chi Epsilon Chapter, Omaha Campus (09/2015-present)

Serving as Faculty Co-Advisor to University of Nebraska-Lincoln Concrete Canoe Competition, Omaha Campus (09/2015-present)

Serving as Lead Initiator & Head Judge - ACI Mortar Workability Competition (2012-2016)

Serving in ACI Faculty Network (2012-present)

Served as ACI Texas State University Student Chapter Faculty Advisor (2012-2015)

Served as University Graduate Faculty, Texas State University (2009-2015)

Served in College of Science and Engineering Research Enhancement Program Committee, Texas State University (2013-2014)

Served as Co-Author of Department Academic Program Review (APR) Self-Study, Department of Engineering Technology, Texas State University (2011)

Served as Liaison of ACI Central Texas Chapter and ACI San Antonio Chapter, Department of Engineering Technology, Texas State University (2009-2015)

Served as Lead Faculty Advisor of Concrete Industry Management (CIM) Program, Department of Engineering Technology, Texas State University (2009-present)

Served in Departmental Curriculum Committee, Department of Engineering Technology, Texas State University (2009-2015)

Served as Departmental and CIM Library Representative, Department of Engineering Technology, Texas State University (2010-2015)

Served as Head Designer of Texas State Concrete Lab, Department of Engineering Technology, Texas State University (2008-2009)