

Zhihui Sun, Ph.D.

100 W.S. Speed Hall, Civil & Environmental Engineering Department
University of Louisville, Louisville, KY 40292

Tel: 502-852-4583, Fax: 502-852-8851, E-mail: z.sun@louisville.edu

Education:

Ph.D., Civil Engineering, Northwestern University, IL, USA, 2005
M.Eng., Civil Engineering, National University of Singapore, Singapore, 2001
B.S., Structural Engineering, Tongji University, Shanghai, China, 1999

Professional Experience:

Department chair, 2018-present
Acting department chair, 2017-2018
Professor, 2017-present
Associate Professor, 2011-2017
Assistant Professor, 2005-2011
Civil and Environmental Engineering Department, University of Louisville
Quantity Surveyor, Apr, 2001-July, 2001
WOH HUP Pte. Ltd., Singapore

Professional Associations:

American Concrete Institute (ACI)
American Society of Civil Engineers (ASCE)
American Society of Engineering Education (ASEE)
Portland Cement Association (PCA)

Awards:

1. Student Champion, Office of the Executive Vice President and University Provost, University of Louisville, 2022
2. Student Champion, Office of the Executive Vice President and University Provost, University of Louisville, 2021
3. Panel Fellow, Game Changer Academies for Advancing Research Innovation, NSF CMMI, 2021
4. Outstanding Contribution to Education, KSPE Louisville Chapter, 2020
5. Outstanding Faculty Mentor of PhD Students, University of Louisville, 2019
6. Adjunct Professor, Fuzhou University, China, 2015-2020
7. Kwang-Hua Scholar, Tongji University, China, 2011
8. PCA Education Foundation Fellowship, Portland Cement Association, 2007
9. ASCE Exceed Fellowship, 2006
10. Faculty Favorite (nominated by Civil Engineering Students), University of Louisville, 2006
11. Walter P. Murphy Fellowship, Northwestern University, 2001-2004

12. University Fellowship, National University of Singapore, 1999-2001
13. People's Fellowship, Tongji University, 1995-1999

FUNDED RESEARCH PROJECTS:

External Funding

1. Environmentally Responsible Transportation Center for Communities of Concern (ERTC³), a Tier 1 University Transportation Center
Funded by USDOT (subcontract through University of Missouri Kansas City)
PI: Zhihui Sun, co-PI: Omid Ghasemi-Fare, David Tyler Mahoney
\$2,204,375 (USDOT), \$1,102,188 (UofL), March, 2023-February, 2028
2. Using Lightweight Aggregates as the Internal Curing Agent for Concrete Pavement
Funded by KY NSF EPSCoR
PI: Zhihui Sun
\$14,927, January 01, 2023-June 30, 2023
3. REU Site: Engaging Undergraduate Students in Converting Waste to Sustainable Construction Materials
Funded by the National Science Foundation
PI: Zhihui Sun, co-PI: Noppadon Sathitsuksanoh
\$398,283, September, 2022-August, 2025
4. Developing LCMS-based Pavement Prediction for an Extended Set of VES Distress Indices
Funded by the Kentucky Transportation Cabinet
PI: Lihui Bai, co-PI: Zhihui Sun, Xiaoyu Chen
\$80,000, July 2022-June 2023
5. Using E5 Internal Cure in Concrete Bridge Decks in Kentucky
Funded by the Kentucky Transportation Cabinet
PI: Zhihui Sun
\$153,230, January 2022-June 2024
6. CEE Research and Development Work Program with Kentucky Transportation Cabinet (a master contract)
Funded by the Kentucky Transportation Cabinet
PI: Zhihui Sun (subprojects under this master contract has individual PIs)
\$1,000,000, July 2022-June 2024
7. Machine Learning Algorithms for Developing LCMS based Pavement Composite Index
Funded by the Kentucky Transportation Cabinet
PI: Lihui Bai, co-PI: Zhihui Sun
\$82,377, July 2021-June 2022
8. Improvement and Calibration for Mapping Tools from LCMS to VES for KY Interstate Parkway and non-Interstate Roadways
Funded by the Kentucky Transportation Cabinet
PI: Lihui Bai, co-PI: Zhihui Sun
\$81,621, July 2020-June 2021

9. Studies of LCMS for Interstate Parkway Pavement Raveling Conditions and Non-Interstate Parkway in KY Roadways
Funded by the Kentucky Transportation Cabinet
PI: Lihui Bai, co-PI: Zhihui Sun, Xuwen Zhu
\$85,674, July 2019-June 2020
10. Mapping LCMS to Visual Evaluations and Modeling Pavement Deterioration using LCMS data for Kentucky Roadway Systems
Funded by the Kentucky Transportation Cabinet
PI: Lihui Bai, co-PI: Zhihui Sun, Xuwen Zhu
\$78,720, July 2018-June 2019
11. Automatic Heated Bridge Decks Using Active Geothermal Energy
Funded by the Kentucky Transportation Cabinet
PI: Omid Ghasemi-Fare, co-PI: Zhihui Sun
\$263,473, April 2018-June 2022
12. Application of highly thermal conductive material to improve the thermal performance of concrete pavement
Funded by KY NSF EPSCoR
PI: Omid Ghasemi-Fare, co-PI: Zhihui Sun
\$13,926, April 2018-July 2018
13. Developing A Foamcrete for Trench Construction
Funded by the National Science Foundation, I-Corp program
PI: Zhihui Sun, co-PI: Tom Rockaway
\$2,500, February 2017-January 2018
14. A Comprehensive Study of Mapping LCMS to Visual Evaluations for Asphalt Pavements on Kentucky Interstate Parkways
Funded by the Kentucky Transportation Cabinet
PI: Lihui Bai; co-PI: Zhihui Sun
\$97,793, July 2017-June 2018
15. Modeling Pavement Conditions and Deterioration with Laser Cracking Measuring System Date on Kentucky Interstate and Parkways
Funded by the Kentucky Transportation Cabinet
PI: Lihui Bai; co-PI: Zhihui Sun
\$80,779, July 2016-June 2017
16. Study on LED Light Reflectiveness of Concrete Pavement
Funded by the National Ready Mixed Concrete Association
PI: Young Hoon Kim, co-PI: Zhihui Sun, J.P. Mohsen
\$50,000, January 2016-January, 2017
17. An Analysis of the Kentucky Roadway Pavement Laser Crack Measurement System
Funded by the Kentucky Transportation Cabinet
PI: Lihui Bai, co-PI: Zhihui Sun
\$26,861, Jan 2016-June 2016
18. Improve the Stability of Oilwell Cementing via Rheological Methods
Funded by the Kentucky Science and Engineering Foundation

- PI: Zhihui Sun
\$30,000, July 2015-December 2016
19. Deterioration Prediction Modeling of Kentucky's Roadways (Phase II)
Funded by the Kentucky Transportation Cabinet
PI: Lihui Bai, co-PI: Zhihui Sun
\$90,299, July 2015-June 2016
 20. Acquisition of a Pressure Rheometer with Structural Analysis Accessories for Oil Well Cement and Other Materials Characterization
Funded by the National Science Foundation
PI: Zhihui Sun
\$200,625, August 2014-July 2018
 21. Deterioration Prediction Modeling of Kentucky's Asphalt and Asphalt-Overlaid Concrete Pavement Roadways (Phase I)
Funded by the Kentucky Transportation Cabinet
PI: Lihui Bai, co-PI: Zhihui Sun
\$90,464, July 2014-June 2015
 22. Characterizing Paste Microstructure during Setting with Combined Raman Spectroscopy and Confocal Microscopy
Funded by the National Science Foundation
PI: Zhihui Sun
\$200,000, Aug 2013-July 2017
 23. Pavement Deterioration Modeling for Kentucky Roadways
Funded by the Kentucky Transportation Cabinet
PI: Lihui Bai, co-PI: Zhihui Sun
\$35,001, July 2013-June 2014
 24. University Transportation Center (National, Tier I)
Funded by the Research and Innovative Technology Administration, Department of Transportation, subcontracted through Marshall University
PI: J.P. Mohsen; co-PIs: Zhihui Sun, Lihui Bai, Sunderesh Heragu
\$721,042, Jan 2012-Jan 2016
 25. Microscopic Evaluation of ITZs in Recycled Aggregate Concrete
Funded by the Kwang-Hua Foundation, Tongji University, China
PI: Zhihui Sun
\$3,250 (CNY ¥ 20,000), Sept 2011-Aug 2012
 26. High value/hazardous Materials Highway Shipments
Funded by the Federal Highway Administration, subcontracted through Kentucky Transportation Center
PI: Zhihui Sun, co-PI: Lihui Bai
\$62,027, July 2011-Jan 2012
 27. Collaborative Research: Measuring, Monitoring, and Modeling the Setting Properties of Concrete
Funded by the National Science Foundation

PI: Zhihui Sun
\$150,372, May 2007-Apr 2011

28. Evaluation of Maintaining Adequate Air Void System for Portland Cement Concrete
Funded by the Kentucky Transportation Cabinet

PI: Zhihui Sun, co-PI: J.P. Mohsen
\$109,617, Oct 2007-May 2010

29. Measuring and Modeling the Setting Behavior of Cement Pastes
Funded by the Portland Cement Association

PI: Zhihui Sun
\$20,000, Apr 2007-July, 2010

30. ACBM Faculty Network

Funded by the Center for Advanced Cement-Based Materials, Northwestern University

PI: Zhihui Sun
\$4,000, Sept 2007-Aug 2008

31. ACBM Faculty Network

Funded by the Center for Advanced Cement-Based Materials, Northwestern University

PI: Zhihui Sun
\$4,000, Sept 2006-Aug 2007

Internal Funding

1. Studying Cement Particle Dispersion during Setting with Chemical Mapping
Funded by Commission of Diversity and Racial Equality, PI: Zhihui Sun
\$1,000, June 2013-May 2014
2. In-situ Observation of Cement Paste Micro-structure with a Novel SEM Technology
Funded by University of Louisville, IRIG, PI: Zhihui Sun
\$5,000, Jan 2007-Dec 2007
3. Monitoring Pavement Properties with an Ultrasonic Wave Reflection Method
Funded by University of Louisville, IRIG, PI: Zhihui Sun
\$5,000, Jan 2007-Dec 2007

PUBLICATIONS

Book Chapter

Advanced Testing of Cement Based Materials during Setting and Hardening

Chapter 8 Simulation and Modeling (by Klaas van Breugel, Eddy Koenders, Surendra P. Shah, Zhihui Sun, Guang Ye, Thomas Voigt) pp. 311-335, ISBN: 2-912143-81-0

Advances in Bioenergy, Volume 6, Chapter 6 Biofuels and Bioproducts from Industrial Hemp (by Sarttrawut Tulaphol, Zhihui Sun, and Noppadon Sathitsuksanoh) pp. 301-338, ISBN: 978-0-12-824028-1

Refereed Journal Publications

Paper under review

1. Hasanzadeh, B. and Sun, Z. (2023) Measurements of breakdown and buildup of thixotropy in cement pastes containing diatomaceous earth, *Journal of Civil Engineering and Construction*, submitted
2. Offei, I., Guo, A., Sun, Z., Qi, C. and Sathitsuksanoh, N. (2023) Mitigating ASR-induced deteriorations with hydrophobic aggregates-a feasibility study, *Cement and Concrete Composites*, submitted
3. Li, W. and Sun, Z. (2022) Research advances in multifunctional automation concrete for smart pavement and transport, *Automation in Construction*, submitted

Published paper

1. Guo, A., Sun, Z., Sathitsuksanoh, N., and Shang, H. (2023) Dispersion of sonicated sulfated cellulose nanocrystals and their effect on the mechanical properties of cement mortars, *ASCE Journal of Materials in Civil Engineering*, in press.
2. Bai, L., Zhang, J., Zhu, X., Alam, M. and Sun, Z. (2023) A machine learning ensemble model for predicting pavement conditions using automatic laser crack measurement data, *International Journal of Pavement Engineering*, accepted.
3. Lei, B., Xiong, Q., Zhao, H, Dong, W., Tam, V.W.Y., Sun, Z. and Li, W. (2023) Performance of asphalt mortar with recycled concrete powder under different filler-to-asphalt weight ratios, *Case Studies in Construction Materials*, Vol. 18, July, e01834.
4. Feng, H., Liang, J., Guo, A., Lv, L. and Sun, Z. (2023) Development and optimization design of ultra-high ductile magnesium phosphate cement-based composite using fly ash and silica fume, *Cement and Concrete Composites*, Vol. 137, March, 104923.
5. Guo, A., Sun, Z., Sathitsuksanoh, N., Hu, F. and Shang, H. (2023) A review on lignocellulosic biomass wastes in cementitious materials: applications, challenges, and solutions, *Sustainable Structures*, Vol. 3, No. 1, 000023.
6. Dong, W., Li, W., Guo, Y., Sun, Z., Qu, F., Liang, R. and Shah, S.P. (2022) Application of intrinsic self-sensing cement based sensor for traffic detection of human motion and vehicle speed, *Construction and Building Materials*, Vol. 355, November, 129130.
7. Ramezani, M., Kim, Y.H., Sun, Z. and Sherif, M.M. (2022) Influence of carbon nanotubes on properties of cement mortars subjected to alkali-silica reaction, *Cement and Concrete Composites*, Vol. 131, August, 104596.
8. Dong, W., Li, W., Sun, Z., Ibriham, I. and Sheng, D. (2022) Intrinsic graphene/cement-based sensors with piezoresistivity and superhydrophobicity capacities for smart concrete infrastructure, *Automation in Construction*, Vol 133, January, 103983.
9. Shang, H. and Sun, Z. (2021) Laboratory evaluation of PAHs removal by multi-functional green pervious concrete (MGPC) pavement, *Journal of Cleaner Production*, Vol. 315, September, 128032.
10. Dong, W., Guo, Y., Sun, Z., Tao, Z. and Li, W. (2021) Development of piezoresistive cement-based sensor using recycled waste glass cullets coated with carbon nanotubes, *Journal of Cleaner Production*, Vol. 314, September, 127968.

11. Li, P., Li, W., Sun, Z., Shen, L. and Sheng, D. (2021) Development of sustainable concrete incorporating seawater: A critical review on cement hydration, microstructure and mechanical strength, *Cement and Concrete Composites*, Vol. 121, August, 104100.
12. Ghanem, S.Y., Bowling, J. and Sun, Z. (2021) Mechanical properties of hybrid synthetic fiber reinforced self- consolidating concrete. *Composites Part C*, Vo. 5, July, 100154.
13. Guo, A., Sun, Z. and Satyavolu, J. (2021) Experimental and finite element analysis on flexural behavior of mortar beams with chemically modified kenaf fibers, *Construction and Building Materials*, Vol. 292, July, 123449.
14. Hossain, M.A., Rahaman, M.S., Tulaphol, S., Yelle, D., Shang, H., Sun, Z., Rennekar, S. and Sathitsuksanoh, N. (2021) Effects of polyol-based deep eutectic solvents on efficiency of rice straw enzymatic hydrolysis, *Industrial Crops & Products*, Vol. 167, September, 113480.
15. Ramezani, M., Kim, Y.H. and Sun, Z. (2021) Elastic modulus formulation of cementitious materials incorporating carbon nanotubes: probabilistic approach, *Construction and Building Materials*, Vol. 274, March, 122092.
16. Dong, W., Li, W., Vessalas, K., He, X., Sun, Z. and Sheng, D. (2021) Piezoresistivity deterioration of smart graphene nanoplate/cement-based sensors subjected to sulphuric acid attack, *Composites Communications*, Vol. 23, February, 100563.
17. Guo, A., Sun, Z., Sathitsuksanoh, N. and Hu, F. (2020) A review on the application of nanocellulose in cementitious materials, *Nanomaterials*, Vol. 10, No. 12, 2476.
18. Ramezani, M., Kim, Y.H. and Sun, Z. (2020) Probabilistic model for flexural strength of cementitious materials reinforced with carbon nanotube, *Composite Structures*, Vol. 253, December, 112748.
19. Guo, A., Sun, Z. and Satyavolu, J. (2020). Impact of modified kenaf fibers on shrinkage and cracking of cement pastes, *Construction and Building Materials*, Vol. 264, December, 120230.
20. Xue, L., Li, W., Qu, F., Sun, Z. and Shah, S.P. (2020) Self-healing efficiency and crack closure of smart cementitious composite with crystalline admixture and structural polyurethane, *Construction and Building Materials*, Vol. 260, November, 119955.
21. Shang, H., Sun, Z. and Bhaskar, N. (2020) Simulating the long-term performance of multi-functional green pervious concrete (MGPC) pavement in stormwater runoff-induced PAHs contaminant remediation, *ASCE Journal of Environmental Engineering*, Vol. 146, No. 6, 04020033.
22. Dong, W., Li, W., Shen, L., Sun, Z., and Sheng, D. (2020) Piezoresistivity of carbon nanotube (CNT) reinforced cementitious composites under integrated cyclic compression and impact, *Composite Structures*, Vol 241, June, 112106.
23. Rice, J., Kim, Y.H., Sun, Z. and Mohsen, J.P. (2020) Evaluation of Light Reflectiveness of Modern Pavement: Standard Tungsten Incandescent and LED, *ASCE Journal of Transportation Engineering, Part B: Pavements*, Vol. 146, No. 2, 04020007.
24. Guo, A., Sun, Z., Qi, C. and Sathitsuksanoh, N. (2020) Hydration of Portland cement paste containing untreated and treated hemp powders, *ASCE Journal of Materials in Civil Engineering*, Vol. 32, No. 6, 04020148.

25. Ramezani, M., Kim, Y.H. and Sun, Z. (2020) Mechanical Properties of Carbon Nanotube Reinforced Cementitious Materials: Database and Statistical Analysis, *Magazine of Concrete Research*, Vol. 72, No. 20, pp. 1047-1071.
26. Guo, A., Sun, Z. and Satyavolu, J. (2019) Impact of chemical treatment on the physiochemical and mechanical properties of kenaf fibers, *Industrial Crops & Products*, Vol. 141, December, 111726.
27. Ramezani, M., Kim, Y. H. and Sun, Z. (2019) Modeling the Mechanical Properties of Cementitious Materials Containing CNTs, *Cement and Concrete Composites*, Vol 104, November, 103347.
28. Lu, Z., Li, H., Li, W., Zhao, Y., Tang, Z. and Sun, Z. (2019) Shear behaviour degradation and failure pattern of reinforced concrete beam with chloride-induced corrosion stirrups, *Advances in Structural Engineering*, Vol. 22, No. 4, pp. 1998-2010.
29. Guo, A., Aamiri, O.B., Satyavolu, J. and Sun Z. (2019) Impact of thermally modified wood on mechanical properties of mortar, *Construction and Building Materials*, Vol. 208, pp. 413-420.
30. Shang, H. and Sun, Z. (2019) PAHs (naphthalene) removal from stormwater runoff by organoclay amended pervious concrete, *Construction and Building Materials*, Vol. 200, pp. 170-180.
31. Liu, R., Sun, Z., Xiang, X., Chen, P., and Zhou, R. (2018) Reaction kinetics of cassava starch graft anionic/nonionic-type polymer internal curing agents, *Journal of Building Materials and Structures*, Vol. 5, No. 2, pp. 185-196.
32. Hasanzadeh, B. and Sun, Z. (2018) Impacts of diatomaceous earth on the properties of cement pastes, *Journal of Building Materials and Structures*, Vol. 5, No. 2, pp. 197-211.
33. Lei, B., Li, W., Li, Z., Wang, G., and Sun, Z. (2018) Effect of cyclic mechanical loading deterioration on concrete durability: water absorption, freeze-thaw and carbonation, *ASCE Journal of Materials in Civil Engineering*, Vol. 30, No. 9: 04018220.
34. Lei, B., Li, W., Li, Z., Tam, V.W.Y. and Sun, Z. (2018) Durability of recycled aggregate concrete under coupling mechanical loading and freeze-thaw cycle in salt-solution, *Construction and Building Materials*, Vol. 163, pp. 840-849.
35. Li, W., Luo, Z., Long, C., Huang, L., Yu, Q. and Sun, Z. (2018). Mechanical strengths and microstructures of recycled aggregate concrete incorporating nanoparticles, *ASTM Journal of Advances in Civil Engineering Materials*, Vol. 7, No. 1, 2018, pp. 188-205
36. Li, W., Luo, Z., Sun, Z., Hu, Y. and Duan, W.H. (2018) Numerical Modelling of plastic-damage response and crack propagation in RAC under uniaxial loading. *Magazine of Concrete Research*, Vol. 70, No. 9, pp. 459-472.
37. Li, W., Sun, Z., Luo, Z. and Shah, S.P. (2017) Influence of relative mechanical strengths between new and old cement mortars on the crack propagation of recycled aggregate Concrete, *Journal of Advances in Concrete Technology*, Vol. 15, No. 3, pp. 110-125.
38. Liu, R., Sun, Z., Chen, P., and Zhou, R. (2017) Mitigation strategies for concrete plastic shrinkage based on new gel-like superabsorbent polymer, *ASCE Journal of Materials in Civil Engineering*, Vol. 29, No. 10, 04017151.

39. Sun, Z., Liu, F., Teng, T., Qi, C. and Yu, Q. (2017) Hydration of concrete containing hybrid recycled demolition powders, *ASCE Journal of Materials in Civil Engineering*, Vol. 29, No. 7, 04017037
40. Liu, F. and Sun, Z. (2016). Study the hydration process of cement paste with chemical mapping, *ACI Materials Journal*, Vol 113, No. 5, pp. 609-619.
41. Hasanzadeh, B., Liu, F., and Sun, Z. (2016). Monitoring hydration of UHPC and conventional paste by quantitative analysis on Raman patterns, *Construction and Building Materials*, Vol. 114, pp. 208-214.
42. Liu, F. and Sun, Z. (2016) Chemical mapping of cement pastes by using confocal Raman spectroscopy, *Frontiers of Structural and Civil Engineering*, Vol. 10, No. 2, pp. 168-173.
43. Zhou, Y., Gao, J., Sun, Z. and Qu, W. (2015). A fundamental study on static and dynamic moduli of concrete at early age, *Construction and Building Materials*, Vol. 98, pp.137-145.
44. Li, W., Huang, Z., Cao, F., Sun, Z. and Shah, S.P. (2015) Effects of nano-silica and nano-limestone on flowability and mechanical properties of ultra-high-performance concrete, *Construction and Building Materials*, Vol. 95, pp. 366-374.
45. Shen, L., Jovein, H.B. Sun, Z., Wang, Q., and Li, W. (2015). Testing dynamic segregation of self-consolidating concrete, *Construction and Building Materials*, Vol. 75, pp. 465-471
46. Liu, F., Sun, Z. and Qi, C. (2015). Raman spectroscopy and thermal gravimetric study on dehydration of commercial gypsums at various temperatures, *Advances in Cement Research*, Vol. 27, No. 8, pp. 434-446.
47. Liu, F., Sun, Z. and Qi, C. (2015). Raman Spectroscopic Study on the Hydration Behaviors of Portland Cement Pastes during Setting, *ASCE Journal of Materials in Civil Engineering*, Vol. 27, No. 8, 04014223.
48. Sun, Z. and Young, C. (2014). Bleeding of SCC pastes with fly ash and GGBFS replacements, *Journal of Sustainable Cement-Based Materials*, Vol. 3, No. 3-4, pp. 220-229.
49. Xiao, J., Huang, Y. and Sun, Z. (2014). Seismic behavior of recycled aggregate concrete filled steel and glass fiber reinforced plastic tube columns, *Advances in Structural Engineering*, Vol. 17, No. 5, pp. 693-707.
50. Liu, F. and Sun, Z. (2013). Feasibility study of using Raman spectroscopy to detect hydration in wet pastes, *ACI Materials Journal*, Vol. 110, No. 6, Nov/Dec, pp. 611-618.
51. Xiao, J., Li, W., Sun, Z., Lange, D. and Shah, S.P. (2013). Properties of interfacial transition zones in recycled aggregate concrete tested by nanoindentation, *Cement and Concrete Composites*, Vol. 37, pp. 276-292.
52. Venkiteela, G., Sun, Z. and Najm, H. (2013). Prediction of early age normal concrete compressive strength based on dynamic shear modulus measurements, *ASCE Journal of Materials in Civil Engineering*, Vol. 25, No. 1, pp. 30-38.
53. Li, W., Xiao, J., Sun, Z. and Shah, S.P. (2012). Failure processes of modeled recycled aggregate concrete under uniaxial compression, *Cement and Concrete Composites*, Vol. 34, No. 10, pp. 1149-1158.

54. Li, W., Xiao, J., Sun, Z., Kawashima, S. and Shah, S.P. (2012). Interfacial transition zone in recycled aggregate concrete with different mixing approaches, *Construction and Building Materials*, Vol. 35, pp. 1045-1055.
55. Xiao, J., Li, W., Sun, Z. and Shah, S.P. (2012). Crack propagation in recycled aggregate concrete under uniaxial compressive loading, *ACI Materials Journal*, Vol. 109, No. 4, pp. 451-461.
56. Liu, Q., Xiao, J. and Sun, Z. (2011). Experimental study on the failure mechanism of recycled concrete, *Cement and Concrete Research*, Vol. 41, No. 10, pp. 1050-1057.
57. Venkateela, G. and Sun, Z. (2010). In-situ observation of cement particle growth during setting. *Cement and Concrete Composites*, Vol. 32, No. 3, pp. 211-218.
58. Venkateela, G., Gregori, A., Sun, Z. and Shah, S.P. (2010). ANN modeling of the early-age Young's modulus of normal concrete, *ACI Materials Journal*, Vol. 107, May/June, pp. 282-290.
59. Venkateela, G, Sun, Z. and Shah, S.P. (2010). Real observation of cement paste's microstructural evolution. *Transportation Research Record*, Vol. 2141, pp. 75-81.
60. Venkateela, G. and Sun, Z. (2010). Microstructural observation of cement particle growth and connectivity in cement pastes, *Journal of Chinese Ceramic Society*, Vol. 38, No. 9, pp. 16-20.
61. Kim, J.H., Shah, S.P., Sun, Z. and Kwak, H.G. (2009). Properties of early-age concrete monitored with two nondestructive testing methods, *ASCE Journal of Materials in Civil Engineering*, Vol. 21, No. 9, pp. 476-483.
62. Shah, S.P., Mondal, P., Ferron, R.P., Tregger, N., and Sun, Z. (2008). News on Nanotechnology, *Public Roads*, Vol. 72, No. 3, November/December, pp. 42-48.
63. Gregori, A., Ferron, R., Sun, Z. and Shah, S.P. (2008). Experimental simulation of SCC formwork pressure, *ACI Materials Journal*, Vol. 105, No. 1, pp. 97-104
64. Shah, S.P., Mondal, P., Ferron, R. P., Tregger, N. and Sun, Z. (2008). Next horizon in high performance concrete: self-consolidating concrete and nanotechnology, *the Indian Concrete Journal*, Vol. 82, No. 1, pp. 9-21.
65. Sun, Z., Garboczi, E.J. and Shah, S.P. (2007). Modeling the elastic properties of concrete composites: experiment, differential effective medium theory, and numerical simulation, *Cement and Concrete Composites*, Vol. 29, No. 1, pp. 22-38.
66. Sun, Z., Gregori, A., Ferron R. and Shah, S.P. (2007). Developing a falling-ball viscometer for highly flowable cement-based materials, *ACI Materials Journal*, Vol. 104, No. 2, pp. 180-186.
67. Ferron, R., Gregori, A., Sun, Z. and Shah, S.P. (2007). Rheological method to evaluate the thixotropy of cement pastes for SCC, *ACI Materials Journal*, Vol. 104, No. 3, pp. 242-250.
68. Voigt, T., Sun, Z., and Shah, S.P. (2006). Comparison of the ultrasonic wave reflection method and maturity method in evaluating the compressive strength, *Cement and Concrete Composites*, Vol. 28, No. 4, pp. 307-316.
69. Sun, Z., Voigt, T. and Shah, S.P. (2006). Rheometric and ultrasonic investigations of viscoelastic properties of fresh Portland cement pastes, *Cement and Concrete Research*, Vol. 36, No. 2, pp. 278-287.

70. Sun, Z., Voigt, T. and Shah, S.P. (2005). Temperature effects on the strength evaluation of cement-based materials with an ultrasonic wave reflection technique, *ACI Materials Journal*, Vol. 102, No. 4, pp. 272-278.
71. Sun, Z., Ye, G. and Shah, S.P. (2005). Microstructure and early age properties of Portland cement pastes—effects of the connectivity of the solid phases, *ACI Material Journal*, Vol. 102, No. 2, pp. 122-129.
72. Voigt, T., Ye, G., Sun, Z., Shah, S.P. and van Breugel, K. (2005). Early age microstructure of Portland cement mortar investigated by ultrasonic shear waves and numerical simulation, *Cement and Concrete Research*, Vol. 35, No. 5, pp. 858-866.
73. Voigt, T., Grosse, C.U., Sun, Z., Shah, S.P. and Reinhardt, H.W. (2005). Comparison of ultrasonic wave transmission and reflection measurements with P- and S-waves on early age mortar and concrete, *Materials & Structures*, Vol. 38, No. 282, pp. 729-738.
74. Haecker, C.J., Garboczi, E.J., Bullard, J.W., Bohn, R.B., Sun, Z., Shah, S.P. and Voigt, T. (2005). Modeling the linear elastic properties of Portland cement pastes, *Cement and Concrete Research*, Vol. 35, No. 10, pp. 1948-1960.

Refereed Proceedings and Conferences

75. Mohammadzadeh, A., Ghasemi Fare, O. and Sun, Z. Analyzing the feasibility of using shallow geothermal energy to prohibit pavement thermal cracking: field testing, 2023 Geo-congress, Los Angeles, CA, March 26-29, 2023
76. Offei, I. and Sun, Z. Autogenous self-healing properties of nano-silica-dosed engineered cementitious composite. The Second International Conference on Construction Materials and Structures (ICCMS-2022), India, December 14-16, 2022
77. Ghasemi Fare, O., Joshaghani, M., Mirtamizdoust, M. and Sun, Z. Feasibility study of bridge deck snow removal using geothermal energy: Field testing, 2021 Geothermal Rising Conference
78. Ramezani, M., Kim, Y.H. and Sun, Z. Probabilistic Model for Flexural Strength of Cementitious Materials Containing CNTs, International Conference on Cement-Based Materials Tailored for Sustainable Future, Istanbul, Turkey, May 27-29, 2021 (pp. 181-187).
79. Roy, A., Alam, M.M., Bai, L., Zhu, X. and Sun, Z. A machine learning approach for analyzing automatic pavement condition survey for non-interstate parkways, INFORMS, Nov. 7-13, 2020
80. Bahnick, R., Joshaghani, M., Ghasemi-Fare, O. and Sun, Z. Exploring the curing condition and age effect on thermal conductivity of concrete, 2nd International Conference on Energy Geotechnics, La Jolla, California, USA, Sept 20-23, 2020.
81. Shang, H. and Sun, Z. Multi-functional green pervious concrete (MGPC) pavement with stormwater runoff purifying functions, 2019 Annual Water Resources Conference, Salt Lake City, Utah, Nov 3-7, 2019.
82. Zhang, J., Bai, L., Zhu, X., and Sun, Z. Models for mapping from an automatic pavement condition survey to a legacy manual survey, *Proceedings of the 2018 IISE Annual Conference*, 2018

83. Liu, R., Sun, Z., Xiang, X., Chen, P., and Zhou, R. Reaction kinetics of cassava starch graft anionic/nonionic-type polymer internal curing agents, *International Conference on Materials, Machinery and Information Technology Applications*, Beijing, China, Jan 15-16, 2017.
84. Khadgi, P., Bai, L. and Sun, Z. Mapping automated pavement data to windshield visual survey data: a statistical approach, *TRB 96th Annual Meeting*, Washington D.C., January 8-12, 2017.
85. Sun, Z. and Hasanzadeh, B. Improving thixotropy of cement-based materials to facilitate 3-D printing, *Engineering Mechanics Institute Conference 2016, Vanderbilt University*, TN, May 22-24, 2016.
86. Ramezani, M., Kim, Y.H., Hasanzadeh, B. and Sun, Z. Influence of carbon nanotube on flowability of SCC paste, *6th North American Conference on Design and Use of Self-consolidating Concrete*, Washington D.C., May 15-18, 2016.
87. Sun, Z. and Li, W. Characterizing properties and crack initiation in the interfacial transition zones in recycled concrete, *Engineering Mechanics Institute Conference 2015, Stanford University*, CA, June 16-19, 2015.
88. Li, W., Sun, Z., Huang, Z. and Shah, S.P. Influences of nano-silica and nano-limestone on flowability and strengths of ultra-high-performance concrete (UHPC), *Symposium on Ultra-High Performance Concrete (UHPC)*, University of Connecticut, Connecticut, November 19-22, 2015.
89. Xu, G., Bai, L., Sun, Z., Nowaczyk, T., Shive, C., and Wilcoxson, J. Pavement projects Selection Using Decision Analysis and Deterioration Prediction Models, *9th International Conference on Managing Pavement Assets*, Washington D.C., May 18-22, 2015.
90. Sun, Z. and Liu, F. Chemical mapping of cement pastes by using Raman spectroscopy combined with confocal microscopy, *5th International Symposium on Nanotechnology in Construction*, Chicago, IL May 24-26, 2015.
91. Liu, F. and Sun, Z. Using Raman Spectroscopy to characterize hydration process in different types of cement pastes, *Fifth Advances in Cement-based Materials: Characterization, Processing, Modeling and Sensing*, Cookeville, TN, July 7-9, 2014.
92. Xu, G., Bai, L. and Sun, Z. Pavement Deterioration modeling and prediction for Kentucky interstate and highways, *IIE Annual Conference and Expo 2014*, Montreal, Canada, May 30-June 4, 2014.
93. Liu, F. and Sun, Z. Using Raman spectroscopy to characterize the early-age behaviors of cement paste, *Engineering Mechanics Institute Conference 2013*, Evanston, IL, August 4-7, 2013.
94. Sun, Z. and Young, C. Bleeding of SCC pastes with fly ash and GGBS replacements, *5th North American Conference on Design and Use of Self-consolidating Concrete*, Chicago, May 12-15, 2013.
95. Li, W., Shah, S.P., Xiao, J. and Sun, Z. Nanoindentation study on interfacial transition zones in recycled aggregate concrete, *Research in Progress, ACI Spring Convention*, Dallas, TX, Mar 18-22, 2012.
96. Lasisi, A.A., Bai, L. and Sun, Z. An empirical study on risk mitigation in transporting hazardous material, *Annual IE Conference & Expo*, Orlando, FL, May 19-23, 2012.

97. Venkateela, G. and Sun, Z. Microstructural observation of cement particle growth and connectivity in cement pastes, *The 7th International Symposium on Cement & Concrete*, Jinan, China, May 9-12, 2010.
98. Venkateela, G. and Sun, Z. Studying cement paste setting at microstructural level, *ACI Spring Convention*, Chicago, IL, March 23-26, 2010
99. Venkateela, G, Sun, Z. and Shah, S.P. Real observation of cement paste's microstructural evolution. *First International Conference in North America on Nanotechnology in Cement and Concrete*, Irvine, California, May 5-8, 2010.
100. Venkateela, G. and Sun, Z. Early-Age Microstructure Evolution of Cement Pastes, *International Summit on Cement Hydration Kinetics*, Quebec, Canada, June 27-29, 2009.
101. Shah, S.P., Sun, Z. and Venkateela, G. Monitoring and modeling early-age properties of cement-based materials, *International Conference on Microstructure Related Durability of Cementitious Composites*, Nanjing, China, Oct 13-15, 2008, pp. 1321-1332.
102. Shah, S.P., Voigt, T., and Sun, Z. The Application of high-frequency shear waves in echographic mode for nondestructive testing of cement-based materials at early ages, Keynote paper, *Conference on Damage in Composite Materials 2006*, Stuttgart, Germany, September 18-19, 2006.
103. Bullard, J.W., D'Ambrosia, M., Grasley, Z., Hansen, W., Kidner, N., Lange, D., Lura, P., Mason, T.O., Moon, J., Rajabipour, F., Sant, G., Shah, S. P., Sun, Z., Voigt, T., Wansom, S., Weiss, J., and Woo, L. A comparison of test methods for early-age behavior of cementitious materials, *RILEM Symposium on Advances in Concrete*, Quebec City, Canada, September 11-13, 2006.
104. Ferron, R., Gregori, A., Sun, Z., and Shah, S.P. The effect of superplasticizers on the thixotropy of cementitious materials, *Eight CANMET/ACI International Conference on Superplasticizers and Other Chemical Admixtures in Concrete*, Sorrento, Italy, October, 2006
105. Sun, Z. and Shah, S.P. Investigation of the Viscoelastic Properties of Fresh Portland Cement Pastes with an Ultrasonic Wave Reflection Method, *Measuring, Monitoring and Modeling Concrete Properties: In Honor of Surendra P. Shah*, Greece, July, 2006
106. Douglas, R., Gregori, A., Sun, Z., Bonen, D. and Shah, S.P. The effect of ingredients and shear history on the thixotropic rate of rebuilding of SCC, *the 2nd North American Conference and the 4th RILEM International Conference on SCC*, Evanston, USA, October, 2005
107. Gregori, A., Sun, Z., Douglas, R., Bonen, D. And Shah, S.P. The evaluation of viscosity by using a novel viscometer for SCC, *the 2nd North American Conference and the 4th RILEM International Conference on SCC*, Evanston, USA, October, 2005
108. Douglas, R., Gregori, A., Sun, Z. and Shah, S.P. Investigations of the properties of SCC: A method for measuring thixotropy and viscosity, *Proceedings of the Knud Hojgaard Conference on Advanced Cement-Based Materials: Research and Testing*, Denmark, June, 2005
109. Voigt, T., Sun, Z. and Shah, S.P. Monitoring cementitious materials during setting and hardening with an ultrasonic shear wave reflection method, *International Conference on Concrete Repair, Rehabilitation, and Retrofitting*, Cape Town, South Africa, November, 2005

110. Voigt, T., Sun, Z. and Shah, S.P. Health monitoring of early age concrete, Keynote paper, *4th International Conference on Concrete under Severe Conditions: Environment and Loading*, Seoul, Korea, June, 2004
111. Sun, Z., Ye, G., Voigt, T., Shah, S.P. and van Breugel, K. Microstructural aspects of cement hydration—ultrasonic waves and numerical simulations, *Proceedings of the 5th International PhD Symposium in Civil Engineering*, Delft, The Netherlands, June, 2004
112. Sun, Z., Ye, G., Voigt, T., Shah, S.P. and van Breugel, K. Early age properties of Portland cement pastes investigated with ultrasonic shear waves and numerical simulation, *Proceedings of the RILEM International Symposium of Advances in Concrete through Science and Engineering*, Evanston, USA, March, 2004
113. Ye, G., Sun, Z., Voigt, T., van Breugel, K. And Shah, S.P. A micromechanical model for characterization of cement paste at early age validated with experiments, *Proceedings of the RILEM International Symposium of Advances in Concrete through Science and Engineering*, Evanston, USA, March, 2004
114. Alwis, W.A.M and Sun, Z. Long-term structural behavior of axially loaded RC columns, *Proceeding of 6th International Conference on Structural Failure, Durability and Retrofitting*, Singapore, September, 2000

Technical Reports

1. Bonen D., Sun Z., Shen L., Birch B., Deshpande Y., Gregori A., Ferron R., Shah S., Struble L., Lange D., Khayat K., Olek J., Self Consolidating Concrete, a research report to the Portland Cement Association, 2007.
2. Shah, S.P., Sun, Z. Voigt, T. Ultrasonic Technique for the In-Situ Monitoring of the Setting, Hardening, and Strength Gain of Concrete: Part 1: Monitoring the Early-Age Properties of Cementitious Materials with Ultrasonic Wave Reflection Method at Macro and Micro-Structural Levels; Part 2: The Application of an Ultrasonic Shear Wave Reflection Method for Nondestructive Testing of Cement-Based Materials at Early Ages, a final research report to the Transportation Research Board, 2009.
3. Sun, Z., Bai, L. and Lasisi, A.A. Hazardous Material Highway Shipment Survey, a research report to the Kentucky Transportation Center, 39 pages, Dec 2011.
4. Bai, L, Sun, Z. and Lasisi, A.A. Inland Waterway Shipment Survey, a research report to the Kentucky Transportation Center, 36 pages, Jan 2012.
5. Bai, L and Sun, Z. Pavement Deterioration Modeling and Prediction for Kentucky Interstate Highways and Parkways, a research report to the Kentucky Transportation Cabinet, 51 pages, June 2014.
6. Bai, L and Sun, Z. Deterioration Prediction Modeling of Kentucky's Asphalt and Asphalt-Overlaid Concrete Pavement Roadways, a research report to the Kentucky Transportation Cabinet, 53 pages, June 2015.
7. Bai, L. and Sun, Z. Deterioration Prediction Modeling of Asphalt Pavement on Kentucky Non-interstate Highways and Parkways, 59 pages, September 2016.

Thesis and Dissertation Directed

Advising and Chairing

- Scott, Payton, 2023-2024 (expected), M. Eng. Thesis: “Internal Curing of Concrete Using Lightweight Aggregates.”
- Offei, Isaac, 2021-2025 (expected), Ph.D. Dissertation: “Improve Concrete Durability with Functional Nano-silica.”
- Shang, Hong, 2015-2021, Ph.D. Dissertation: “Develop a Multi-Functional Green Pervious Concrete (MGPC) Pavement with Polycyclic Aromatic Hydrocarbons (PAHs) Removal Function.”
- Guo, Aofei, 2016-2020, Ph.D. Dissertation: “Hydration, Shrinkage, Cracking, and Mechanical Properties of Cementitious Materials with Lignocellulosic Biomass Wastes.”
- Rice, Jeremy, 2016-2017, M. Eng. Thesis: “Study the Light Reflectiveness of Concrete Pavement.” (co-chair with Dr. Young Hoon Kim).
- Wong, James, 2015-2016, M. Eng. Thesis: “Investigating Influences of Internal Curing Agent on Rheological Properties of Paste.”
- Ramezani, Mahyar, 2014-2019, Ph.D. Dissertation: “Design and Predicting Performance of Carbon Nanotube Reinforced Cementitious Materials Mechanical Properties and Dispersion Characteristics”, (co-chair with Dr. Young Hoon Kim).
- Hasanzadeh, Bashir, 2013-2018, Ph.D. Dissertation: “Testing and Modeling of The Thixotropic Behavior of Cementitious Materials.”
- Liu, Fengjuan, 2011- 2014, Ph.D. Dissertation: “Studying Early-Age Hydration of Portland Cement Paste with Raman Spectroscopy and Confocal Microscopy.”
- Young, Coty, 2011-2012, M. Eng. Thesis: “Studying Bleeding Characteristics and Other Properties of Self-Consolidating Concrete Paste with Supplementary Cementitious Materials.”
- Venkateela, Giri, 2006-2010, Ph.D. Dissertation: “Studying the Microstructure and Modeling the Early-Age Mechanical Properties of Cement-Based Materials.”
- Kessinger, David, 2008-2010, M. Eng. Thesis: “Evaluation of the Application of the Air Void Analyzer in Quality Control.”
- Ng, Lokman, 2009-2010, M. Eng. Thesis: “Studying Air Properties in Hardened Portland Cement Concrete with Linear Traverse Method.”

Co-Advising

- Luo, Chenglong, 2013-2014, Industrial Engineering Department, M. Eng. Thesis: “Pavement Deterioration Modeling and Design of A Composite Pavement Distress Index For Kentucky Interstate Highways and Parkways.”
- Lasisi, Ayodeji A. 2010-2011, Industrial Engineering Department, M. Eng. Thesis: “Hazardous Risk Management Survey and Inland Waterway Survey.”
- Li, Wengui Ph.D. Dissertation: “Multi-Scale Mechanical Behaviors of Modeled Recycled Aggregate Concrete,” Building Engineering Department, Tongji University, Shanghai, China (served as a subject expert and mentor from 2011-2013)

TEACHING EXPERIENCE

CEE627	Non-Destructive Testing
CEE694	Non-Destructive Testing
CEE620	Advanced Mechanics of Solids
CEE698	Ph.D. Seminar
CEE530	Construction Materials in Civil Engineering
CEE320	Fundamentals of Structural Analysis
CEE420	Indeterminate Structural Analysis
CEE322	Structural Analysis

Teaching Evaluations

Term	Course	Enrollment	Overall Rating
Fall 05	CEE 620-01	13	3.89
Spring 06	CEE530-01	20	3.71
Spring 06	CEE530-02	13	3.77
Summer 06	CEE320	58	3.42
Fall 06	CEE620-01	10	4.25
Fall 06	CEE694-02	6	4.71
Spring 07	CEE 530-01	20	3.96
Spring 07	CEE 530-02	18	3.78
Fall 07	CEE620-01	8	3.88
Fall 07	CEE694-02	12	4.33
Spring 08	CEE 420	39	3.55
Spring 08	CEE530-01	22	4.11
Spring 08	CEE530-02	20	4.02
Summer 08	CEE 320	40	3.70
Fall 08	CEE620-01	8	3.46
Fall 08	CEE694-02	18	4.38
Spring 09	CEE 420	40	3.88
Spring 09	CEE530-01	20	3.92
Spring 09	CEE530-02	17	4.03
Fall 09	CEE 620	13	3.94
Fall 09	CEE 694	20	4.13
Spring 10	CEE 530-01	22	3.84
Spring 10	CEE 530-02	22	3.85
Spring 10	CEE 420	40	3.62
Summer 10	CEE 320	40	3.67
Fall 10	CEE 620	11	4.17
Fall 10	CEE 694	14	4.04
Spring 11	CEE 420	40	3.91
Spring 11	CEE 530-01	16	3.72
Spring 11	CEE 530-02	15	4.00

Summer 11	CEE 320	45	3.94
Fall 11	CEE 620	12	4.38
Fall 11	CEE 627	12	4.58
Spring 12	CEE 420	40	4.60
Spring 12	CEE 530-01	20	3.59
Spring 12	CEE 530-02	18	3.96
Summer 12	CEE 320	33	3.38
Fall 12	CEE 620	11	4.00
Fall 12	CEE 627	10	4.65
Spring 13	CEE 420	32	3.54
Spring 13	CEE 530-01	21	3.75
Spring 13	CEE 530-02	22	4.50
Fall 13	CEE 620	8	4.21
Fall 13	CEE 627	10	4.17
Spring 14	CEE 420	44	4.10
Spring 14	CEE 530-01	20	4.15
Spring 14	CEE 530-02	10	4.50
Summer 14	CEE 320	30	4.00
Fall 2014	CEE 620	11	4.00
Fall 2014	CEE 627	8	4.19
Spring 15	CEE 420	30	4.35
Spring 15	CEE 530-01	22	4.20
Spring 15	CEE 530-02	21	3.78
Summer 15	CEE 322	38	3.71
Fall 15	CEE 620	13	4.00
Spring 16	CEE 420	2	4.50
Spring 16	CEE 530-01	20	3.33
Spring 16	CEE 530-02	14	2.75
Summer 16	CEE 322-01	36	4.40
Fall 16	CEE 620	7	4.45
Fall 16	CEE 698	2	5.00
Spring 17	CEE 530-01	20	4.53
Spring 17	CEE 530-02	16	4.00
Spring 17	CEE 698	3	4.50
Fall 17	CEE 620	6	4.00
Fall 17	ME 620	18	3.80
Spring 18	CEE 698	6	4.65
Fall 18	CEE 620	10	4.43
Fall 18	CEE 698	2	4.50
Fall 19	CEE 620	9	5.00
Fall 19	CEE 698	2	4.50
Fall 20	CEE 620	17	4.57
Fall 20	CEE 698	3	5.00
Fall 21	CEE 620	8	4.45
Fall 21	CEE 698	6	-

Fall 22	CEE 620	8	5.00
Fall 22	CEE 698	2	4.50

*1-Ineffective, 2-Low, 3-Average, 4-High, 5-Extremely Effective

SERVICE

Thesis and Dissertation Reading Committees Served:

Chowdhury, Nilufar, Ph.D. Civil and Environmental Eng. Department (Geotech), 2024
 Tabares Tamayo, Juan, Ph.D. Civil and Environmental Eng. Department (Structural), 2024
 Haghani, Mohamadreza, Ph.D., Civil and Environmental Eng. Department (Transportation), 2023
 Algomaiah, Abdulmaged, Ph.D., Civil and Environmental Eng. Dept. (Transportation), 2022
 Hosseinzadeh, Aryan, Ph.D., Civil and Environmental Eng. Department (Transportation), 2022
 Ma, Muting, Ph.D., Civil and Environmental Engineering Department (Transportation), 2022
 Wang, Song, Ph.D., Civil and Environmental Engineering Department (Transportation), 2020
 Ebrahimi, Milad, Ph.D., Civil and Environmental Engineering Department (Geotech), 2016
 Zhang, Yibo, Ph.D., Civil and Environmental Engineering Department (Structural), 2016
 Yang, Li, Ph.D., Civil and Environmental Engineering Department (Structural), 2016
 Li, Shanshan, Ph.D., Civil and Environmental Engineering Department (Geotech), 2015
 Chen, Jubin, Ph.D., Mechanical Engineering Department, 2015
 Luo, Chenglong, M. Eng., Industrial Engineering Department, 2014
 Radfar, Ata, Ph.D., Civil and Environmental Engineering Department (Geotech), 2014
 Abdollahian, Sam, Ph.D., Civil and Environmental Engineering Department (Geotech), 2013
 Zhang, Ying, Ph.D., Civil and Environmental Engineering Department (Transportation), 2012
 Meuris, Bred, M. Sc., Mechanical Engineering, 2011
 Lasisi, Ayodeji A., M. Eng., Industrial Engineering, 2011
 Desai, Niranjana, Ph.D. Civil and Environmental Engineering Department (Structural), 2011
 Stalls, Stanley, M.Sc. Civil and Environmental Engineering Department (Structural), 2009
 Chung, Chul-woo, Ph.D. Civil and Environmental Engineering Department (Material), University of Illinois-Urbana Champaign, 2009
 Chen, Hao, Ph.D. Civil and Environmental Engineering Department (Transportation), 2008

Professional Service:

2011-current American Concrete Institute (ACI) Technical committee 241: Nanotechnology
 2005-current American Concrete Institute (ACI) Technical committee 228: Non-destructive testing of concrete
 2005-current American Concrete Institute (ACI) Technical committee 236: Material science of concrete
 2005-current American Concrete Institute (ACI) Technical committee 238: Workability of fresh concrete
 2003-2005 International Union of Laboratories and Experts in Construction Materials, Systems, and Structures (RILEM) Technical committee 185ATC: Advanced testing of cement based materials during setting and hardening

Journal Paper Review:

2002-current ACI Materials Journal
 2003-current ASCE Journal of Materials in Civil Engineering
 2005-current Cement and Concrete Research
 2005-current Cement and Concrete Composites
 2005-current Materials and Structures
 2005-current Construction and Building Materials
 2008 Experimental Techniques
 2013-current Journal of Sustainable Cement-Based Materials
 2014 Advances in Civil Engineering
 2019- Journal of Cleaner Products
 2020 Resources, Conservation and Recycling

Conference Service:

2020 Scientific committee: 2020 International Conference on Cement-Based Materials Tailored for A Sustainable Future, Istanbul, Turkey, May 5-8, 2020
 2015 Review committee: *5th International Symposium on Nanotechnology in Construction*, Chicago, IL May 24-26, 2015
 2005 Session chair: *the 2nd North American Conference and the 4th RILEM International Conference on SCC*, Chicago, IL, USA

Proposal Review Panel:

2023 Research Grants Council of Hong Kong
 2022 NSF Proposal Review Panel: CBET, EEC, CMMI
 2021 NSF Proposal Review Panel: CMMI
 2021 Research Grants Council of Hong Kong
 2020 NSF Proposal Review Panel: CMMI
 2020 NCHRP 10-108
 2019 QATAR National Research Fund: The National Priorities Research Program (Civil Engineering/Construction Materials)
 2016 NSF Proposal Review Panel: CMMI
 2015 QATAR National Research Fund: The National Priorities Research Program (Civil Engineering/Construction Materials)
 2014 QATAR National Research Fund: The National Priorities Research Program (Civil Engineering/Construction Materials)
 2014 NSF Proposal Review Panel: CMMI
 2013 NSF Proposal Review Panel: CMMI
 2013 QATAR National Research Fund: The National Priorities Research Program (Civil Engineering/Construction Materials)
 2010 NSF Proposal Review Panel: GRFP

University Committee Service:

2013-2019 Commission on Status of Women (Recruitment, Retention, and Representative Committee)
 2014-2019 Commission on Status of Women (Executive Committee)
 2016-2019 Commission on Status of Women (Chair, Nominating Committee)

Speed School Committee Service:

2013-2017 Graduate education committee
2006-2015 Co-op committee
2010-2015 Curriculum committee
2008-current INSPIRE enrichment program
2006-current E-Expo student poster advisor

Departmental Service:

2022-2023 Civil and Environmental Engineering Department Faculty Search Committee
2021-2022 Civil and Environmental Engineering Department Faculty Search Committee
2020-2021 Civil and Environmental Engineering Department Faculty Search Committee
2017-2018 Civil and Environmental Engineering Department Faculty Search Committee
2014-2015 Civil and Environmental Engineering Department Faculty Search Committee
2013-2017 Director of Graduate Studies, Civil and Environmental Engineering Department
2006-current Advisor for KYTC fellowship program
2009-current Advisor for MSD fellowship program
2010-2011 Civil and Environmental Engineering Department Faculty Search Committee
2008-2009 Civil and Environmental Engineering Department Faculty Search Committee
2009-2010 Mechanical Engineering Department Faculty Search Committee
2005-2006 ASCE student chapter, Big Beam project, regional 2nd prize