

Shenghua Wu, Ph.D., P.E., LEED AP

Assistant Professor

Department of Civil, Coastal, and Environmental Engineering, University of South Alabama

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Research Expertise

- Asphalt technology and pavement engineering
- Smart materials and innovative technologies for infrastructures
- Advanced laboratory characterization for transportation materials
- Recycled materials, pavement rehabilitation and maintenance, and sustainability
- Roadway performance and modeling, mechanistic-empirical pavement design

Education

• **Ph. D. in Civil Engineering**

Washington State University, Pullman, USA, 2011–2016

Advisor: Professor Balasingam Muhunthan

Dissertation: *A Mechanistic-Empirical Model for Top-down Cracking in Asphalt Pavement Overlay*

• **M.S. in Civil Engineering**

Hunan University, Changsha, China, 2008–2011

Advisor: Professor Menglan Zeng

Thesis: *Experimental Study on Steel Slag-Crushed Stone Pavement Base Materials Stabilized with Portland Cement*

• **B.S. in Civil Engineering**

Central South University of Forestry and Technology, Changsha, China, 2004–2008

Area: Structure Engineering

Professional Registration

- Professional Engineer, AL, No. 39362
- Leadership in Energy & Environmental Design (LEED) Accredited Professional (AP), Building Design + Construction (BD+C), U.S. Green Building Council

Professional Affiliation

- Member of American Society of Civil Engineers (ASCE)
- Member of ASTM International
- Member of Academy of Pavement Science and Engineering (APSE)
- Member for Transportation Research Board (TRB) AJE35 Standing Committee on Research Innovation Implementation
- Associate Member of the Transportation & Development Institute's (T&DI) Highway Pavement Committee
- Member of Association of Asphalt Paving Technologists (AAPT)
- Editorial Member for ASTM International, Journal of Testing and Evaluation (JTE)
- Editorial Board Member of International Journal of Pavement Research and Technology (IJPRT)

Awards and Honors

- “Outstanding Reviewer for International Journal of Fatigue”, 2018
- “Outstanding Reviewer for Construction and Building Materials”, 2017
- “Certificate of Volunteer Excellence”, Illinois Union Office of Volunteer Programs, 2017
- “The David R. Jones IV Annual Scholarship” winner, the Association of Modified Asphalt Producers (AMAP), 2015
- “Washington Asphalt Pavement Association Scholarship” winner, 2015
- “Osborn Outstanding Graduate Student Award” winner, Washington State University, 2015
- “Pertee Engineering Graduate Fellowship in Civil Engineering”, Washington State University, 2015
- “Annual Scholarship 1st Prize” winner, Hunan University, 2009 and 2010

Media Coverage

- Recycle, Reclaim and Repave: South Professor, Students Test Recycled Asphalt, July 15, 2020. <https://www.southalabama.edu/departments/publicrelations/pressreleases/071520asphalt.html>
- Special Project Emphasizes Ethics and Professionalism. The Magazine of the American Society of Civil Engineers, April issue, 2020.
- Cooling Off a Hot Mess: South Researchers Test Ways to Make Asphalt Production Safer, More Environmentally Friendly, January 24, 2019. <https://www.southalabama.edu/colleges/engineering/news/012419asphalt.html>
- TeamUSA Faculty Accomplishments in Team-Based Learning Research and Innovation, April, 22, 2019. <https://www.southalabama.edu/departments/qep/news/tblc.html>
- Faculty Receive National Credential in Teaching Excellence, May 23, 2019. <https://www.southalabama.edu/departments/publicrelations/pressreleases/052319faculty.html>

Professional Training

- Professor-Training Course, National Center for Asphalt Technology (NCAT) and National Asphalt Pavement Association (NAPA), Auburn University, June 17-21, 2019.
- Grant-Writing Fellowship Program, David G. Bauer Associates, Inc., 2018-2019
- Association of College and University Educators (ACUE) courses in Effective Teaching Practices, 2018-2019
- Scholarship of Teaching and Learning (SoTL) Workshop, University of South Alabama, July 2018
- ASCE Webinar, 2018
- Team-based Learning (TBL) Workshop, University of South Alabama, 2017
- New Faculty Scholars Program, University of South Alabama, 2017-2018
- I-clicker Workshop, University of South Alabama, 2017
- Nuclear Density Tester Course; Hot Mix Asphalt Level 1; Mixture Aggregate; Illinois Department of Transportation, 2015, 2016
- Asphalt Testing Training, Idaho Asphalt Supply Inc., 2014
- Grant Writing Seminar, Moscow, Idaho, 2014

Services

A. National & International:

- Committee member for TRB AJE35 Standing Committee on Research Innovation Implementation, 2020–
- Committee member for TRB ABG10 Standing Committee on Conduct of Research, 2018–2020
- Panel member for ACRP 09-18 Project: Rapid Airfield Concrete Pavement Slab Replacement and Patching Guidance, 2018–

- Panel member for NCHRP 20-50 Project: LTPP Data Analysis: Significance of As-Constructed Air Voids to Asphalt Pavement Performance, 2017–2020
- Panel member for ACRP 11-03/Topic S02-18 Airport Waste Management and Recycling Practices, 2017–2018
- Member of “Road Construction-Pavement Engineering Materials – Asphalt and Asphalt Mixture Material” Technical Committee, World Transportation Convention, 2018–
- Editorial Member for ASTM International, Journal of Testing and Evaluation (JTE)
- Editorial Board Member of International Journal of Pavement Research and Technology (IJPRT)
- Organizing member for annual workshop, International Association of Chinese Infrastructure Professionals (IACIP), 2018
- International Scientific Committee member for International Society for Asphalt Pavement (ISAP) Asphalt Pavement and Environment (APE) Symposium, 2017–
- Organizing member, Pavement Life-Cycle Assessment 2017 Symposium
- Secretary of Organizing Committee for annual workshop, IACIP, 2016; Member of Organizing Committee, 2017.
- Fundraising Committee, IACIP
- E-mentor for ASCE Career Connections, 2014–present

B. Regional

- Head Judge for Mobile Regional Science & Engineering Fair, March 6, 2020
- Interpreter, Circuit Court of Baldwin County, Alabama, April 17, 2019
- Judge for Alabama Louis Stokes Alliance for Minority Participation (ALSAMP) posters, April 8, 2019
- Judge for Science and Technology Open House (STOH) and the NSF EPSCoR CPU2AL Annual Meeting, April 4, 2019
- Head Judge for Mobile Regional Science & Engineering Fair, March 15, 2019
- Judge for Mobile Regional Science & Engineering Fair, March 16, 2018

C. Campus

- Faculty Advisor for Chinese Students & Scholars Association, University of South Alabama, 2018–
- EG committee, College of Engineering, University of South Alabama, 2018–
- Adviser for Student Sustainability Committee; University of Illinois at Urbana-Champaign, 2016–2017
- Leadership Certificate Coach, University of Illinois at Urbana-Champaign, 2016–2017
- Illinois Promise mentor; Money mentor; University of Illinois at Urbana-Champaign, 2016–2017
- Senator, Graduate & Professional Students Association (GPSA), WSU, 2013–2015
- Member of Excellence Awards Committee, and the Grant Committee, GPSA, WSU, 2013–2015
- Vice president, Chinese Students & Scholars Association, WSU, 2012–2013

Professional Experience

A. Research Experience

- University of South Alabama, 2017–
 - a. A Forensic Evaluation on 100% Reclaimed Asphalt Pavement Cold Mix with Blacklidge’s ReCharge™ Technology, funded by Blacklidge Emulsion Co.
 - b. Incorporation of recycled plastic into asphalt mixtures, funded by USA SURF program
 - c. Rejuvenators for cold mix asphalt, funded by USA SURF program
 - d. Evaluation of effectiveness of bio-based graphene reinforced asphalt mixture, funded by USA Faculty Development Council
 - e. Evaluation of recycled glass for civil infrastructure, funded by USA SURF program

- f. Pavement surface treatments for ice-prone locations in the Illinois highway system, funded by Illinois Department of Transportation
- g. Integrating team-based learning modules to improve engineering students' technical writing skills, funded by TBLC
- Senior Sustainability Research Engineer, Illinois Center for Transportation, 2015–2017
 - a. ICT R27-161 project: Construction and performance monitoring of various asphalt mixes
 - b. ICT R27-160 project: Sustainability engineering and support
 - c. ICT R27-SP31: Evaluation of I-FIT results and machine variability using MnRoad test track mixes
 - d. ICT R27-175: Development of long-term aging protocol for implementation of I-FIT
 - e. ICT R27-SP34: Evaluation of various tack coat materials using interface shear device
 - f. IDOT/FHWA joint process review: Early-age cracking performance of HMA
 - g. IDOT MOBA Paver-IR ground penetrating radar (GPR) study
- Research Assistant, Washington State University, 2011–2015
 - a. National Cooperative Highway Research Program (NCHRP) 9-49A Project: Phase II - Long term field performance of warm mix asphalt
 - b. Evaluation of fiber-reinforced asphalt pavement
 - c. Evaluation of recycled asphalt shingles in Washington State
 - d. Performance evaluation of warm mix asphalt in Washington State
 - e. Evaluation of steel slag as aggregate in hot mix asphalt to resist studded tire wear
 - f. Investigation of the effect of bitumen surface treatment on underlying asphalt pavement
 - g. Performance evaluation of stone matrix asphalt in Washington State
- Research Assistant, Hunan University, China, 2008–2011
 - a. Investigation of reclaimed asphalt pavement using warm mix asphalt technology
 - b. Evaluation of steel slag - crushed stone base materials stabilized with inorganic binding materials

B. Teaching/Advising Experience

- Instructor for *EG101 Introduction to Engineering and Design*, *EG283 Statics*, *EG284 Dynamics*, *EG360 Fluid Mechanics*, *EG315 Mechanics of Materials*, *CE314 CE Materials*, *CE315 CE Materials Lab*, *CE490/590 Pavement Design*, *CE490/590 Special Topic: Advanced Characterization of Transportation Materials*, University of South Alabama, 2017–
- Mentor for undergraduate and graduate research assistants, University of South Alabama, 2017–
- Advisor for Student Campus Sustainability, University of Illinois at Urbana-Champaign, 2016–2017
- Laboratory trainer, Advanced Transportation Research and Engineering Laboratory, UIUC, 2015–2017
- Co-instructor, Washington State University, 2015
 - *CE567 Advanced Transportation Topic: Superpave Mix Design*
- Teaching Assistant, Washington State University, 2013–2015
 - *CE211 Statics*, *CE317 Geotechnical Engineering*, *CE425/525 Soil and Site Improvement*, *CE473 Pavement Design and Analysis*
- Laboratory trainer, Washington Center for Asphalt Technology, 2014–2015

C. Industrial Experience

- Senior Sustainability Research Engineer, 2015–2016, Springfield, Illinois
 - Working with Illinois Department of Transportation to promote transportation sustainability, designing and implementing Industry Affiliate Program
- Engineer-in-training, 2011, Loudi, China
 - Field coordination for the construction of steel slag base experimental pavement

Publications

A. Peer-Reviewed Journal (* Corresponding Author)

2020

1. **S. Wu***, L. Liu, G. Yao, J. Zhang, and O. Tahri. Laboratory Investigation of an Alternative Permeability Indicator to Determine Optimal Maintenance Timing for Open-Graded Friction Course. *Journal of the Transportation Research Board*, 2020, Vol. 2674, pp. 165-177. DOI: <https://doi.org/10.1177/0361198120912731>
2. **S. Wu***, S. Zha, and S. Mattson. Integrating Team-based Learning Modules to Improve Civil Engineering Students' Technical Writing Skills. *ASCE Journal of Civil Engineering Education*, Vol. 146, Issue 3, 2020, DOI: [https://doi.org/10.1061/\(ASCE\)EI.2643-9115.0000016](https://doi.org/10.1061/(ASCE)EI.2643-9115.0000016)
3. L. Liu, G. Yao, J. Zhang, and **S. Wu***. Evaluation of Long-Term Permeability Performance of In-Service Open-Graded Friction Course and Effect of Cleaning on the Its Permeability Restoration. *Journal of Transportation Engineering, Part B: Pavements*, 2020, DOI: <https://doi.org/10.1061/JPEODX.0000153>
4. K. Yan*, G. Li, L. You, Y. Zhou, and **S. Wu**. Performance Assessments of Open-Graded Cement Stabilized Macadam Containing Recycled Aggregate. *Construction and Building Materials*, Vol. 233, 2020, DOI: <https://doi.org/10.1016/j.conbuildmat.2019.117326>
5. K. Yan*, M. Zhang, L. You, **S. Wu**, and H. Ji. Performance and Optimization of Castor Beans-based Bio-asphalt and European Rock-asphalt Modified Asphalt Binder, *Construction and Building Materials*, Vol. 240, 2020, DOI: <https://doi.org/10.1016/j.conbuildmat.2019.117951>
6. K. Yan, H. Sun, L. You, and **S. Wu**. Characteristics of waste tire rubber (WTR) and amorphous poly alpha olefin (APAO) compound modified porous asphalt mixtures. *Construction and Building Materials*, 2020. <https://doi.org/10.1016/j.conbuildmat.2020.119071>

2019

7. L. Liu, **S. Wu***, W. Xie, and G. Yao. Numerical Analysis of Rehabilitated Concrete Pavement Using Crack-And-Sealing Technique. *International Journal of Pavement Engineering*, 2019. DOI: 10.1080/10298436.2019.1673389
8. **S. Wu***, and O. Tahri. State-of-Art Carbon and Graphene Family Nanomaterials for Asphalt Modification. *Road Materials and Pavement Design*, 2019, DOI: <https://doi.org/10.1080/14680629.2019.1642946>
9. **S. Wu***, W. Zhang, S. Shen, and B. Muhunthan. Field Performance of Foaming Warm Mix Asphalt Pavement. *Transportation Research Record: Journal of the Transportation Research Board*, 2019, Vol. 2673, Issue No.3, pp. 281-294. DOI: <https://doi.org/10.1177/0361198119832885>
10. W. Zhang*, S. Shen, **S. Wu**, J. Xue, X. Chen, and L. N. Mohammad. Effects of In-place Volumetric Properties on Field Rutting and Cracking Resistance of Asphalt Pavement, *Journal of Materials in Civil Engineering*, Vol. 31, 2019, [https://doi.org/10.1061/\(ASCE\)MT.1943-5533.0002767](https://doi.org/10.1061/(ASCE)MT.1943-5533.0002767)

2018

11. **S. Wu***, and B. Muhunthan. A Mechanistic-Empirical Model for Predicting Top-down Fatigue Cracking in an Asphalt Pavement Overlay. *Road Materials and Pavement Design*, 2018, DOI: <https://doi.org/10.1080/14680629.2018.1443832>
12. **S. Wu***. Characterization of Ductility of Field-aged Petroleum Asphalt. *Petroleum Science and Technology*, Vol. 36, 2018, pp. 696-703.
13. **S. Wu***, and B. Muhunthan. Evaluation of Effect of Waste Engine Oil on the Rheological Properties of Asphalt Binders. *Journal of Materials in Civil Engineering*, Vol. 30, 2018, DOI:

[https://doi.org/10.1061/\(ASCE\)MT.1943-5533.0002189](https://doi.org/10.1061/(ASCE)MT.1943-5533.0002189)

14. F. R. Safi, K. Hossain, **S. Wu**, I. L. Al-Qadi, and H. Ozer. A Model to Predict Creep Compliance of Asphalt Mixtures Containing Recycled Materials. *Construction and Building Materials*, 2018, Vol. 184, pp. 374-381.
15. **S. Wu**, W. Zhang, S. Shen*, and B. Muhunthan. Case Study: Evaluation of the Effect of Extraction Temperature on WMA Binder Containing Sasobit Additive. *Journal of Testing and Evaluation*, Vol. 46, 2018.
16. W. Zhang, A. Bahadori, S. Shen, **S. Wu**, B. Muhunthan, and L.N. Mohammad. Comparison of Laboratory and Field Asphalt Aging for Polymer-Modified and Warm-Mix Asphalt Binders. *Journal of Materials in Civil Engineering*, 2018, DOI: <https://ascelibrary.org/doi/abs/10.1061/%28ASCE%29MT.1943-5533.0002354>
17. S. Shen, W. Zhang, **S. Wu**, B. Muhunthan, and L. N. Mohammad, Long-term Field Performance of Flexible Pavements Using Warm Mix Asphalt Technologies. *Journal of Association of Asphalt Paving Technologies*, 2018, Vol. 87, pp. 163-198.
18. W. Zhang, S. Shen, and **S. Wu**. Comparison of the Relative Long-term Field Performance among Various Warm Mix Asphalt (WMA) Pavements. *Transportation Research Record: Journal of the Transportation Research Board*, 2018, DOI: <https://doi.org/10.1177%2F0361198118780702>
19. L. Liu, W. Xie, Y. Wang, and **S. Wu***. Evaluation of Significant Factors for Aggregate Retention in Chip Seals based on Mesostructured Finite Element Model. *International Journal of Pavement Research and Technology*, 2018, DOI: <https://doi.org/10.1016/j.ijprt.2018.02.004>

2017

20. **S. Wu***, I. L. Al-Qadi, D. L. Lippert, H. Ozer, A. F. Espinoza-Luque, and F. R. Safi. Early-Age Performance Characterization of Hot-Mix Asphalt Overlay with Varying Amounts of Asphalt Binder Replacement. *Construction and Building Materials*, Vol. 153, 2017, pp. 294-306.
21. **S. Wu***, W. Zhang, S. Shen, X. Li, B. Muhunthan, and L.N. Mohammad. Field-Aged Asphalt Binder Performance Evaluation for Evotherm Warm Mix Asphalt: Comparisons with Hot Mix Asphalt. *Construction and Building Materials*, Vol. 156, 2017, pp. 574-583.
22. **S. Wu***, D. L. Lippert, I.L. Al-Qadi, H. Ozer, I.M. Said, and M.K. Barry. Impact of High Asphalt Binder Replacement on Level Binder Properties for Controlling Reflective Cracking. *Transportation Research Record: Journal of the Transportation Research Board*, No. 2630, 2017, pp. 118-127.
23. **S. Wu***, and X. Li. Evaluation of Effect of Curing Time on Mixture Performance of Advera Warm Mix Asphalt. *Construction and Building Materials*, Vol. 145, 2017, pp. 62-67.
24. I. L. Al-Qadi, **S. Wu***, D. L. Lippert, H. Ozer, M. K. Barry, and F. R. Safi. Impact of High Recycled Mixed on HMA Overlay Crack Development Rate. *Road Materials and Pavement Design*, Vol. 18, sup. 4, 2017, pp. 311-327.
25. **S. Wu***, W. Zhang, S. Shen, B. Muhunthan, and L. N. Mohammad. Short-term Performance and Evolution of Material Properties of Warm- and Hot-Mix Asphalt Pavements. *Transportation Research Record: Journal of the Transportation Research Board*, No. 2631, 2017, pp. 39-54.
26. **S. Wu***. Evaluate Thermal Cracking Resistance of Asphalt Binder Using 4-mm Dynamic Shear Rheometer Monotonic Test. *Petroleum Science and Technology*, Vol. 35, 2017, pp. 732-737.
27. **S. Wu***, B. Muhunthan, and H. Wen. Investigation of Effectiveness of Prediction of Fatigue Life for Hot Mix Asphalt Blended with Recycled Concrete Aggregate Using Monotonic Fracture Testing. *Construction and Building Materials*, Vol. 131, 2017, pp. 50-56.
28. W. Zhang, S. Shen*, **S. Wu**, and L. N. Mohammad. Long-term Field Aging of Warm Mix and Hot Mix

Asphalt Binders. *Transportation Research Record: Journal of the Transportation Research Board*, No. 2632, 2017, pp. 140-149.

29. W. Zhang, S. Shen*, A. Faheem, P. Basak, **S. Wu**, and L. N. Mohammad. Predictive Quality of the Pavement ME Design Program for Field Performance of Warm Mix Asphalt Pavements. *Construction and Building Materials*, Vol. 131, 2017, pp. 400-410.
30. W. Zhang, S. Shen*, **S. Wu**, and L. N. Mohammad. Prediction Model for Field Rut Depth of Asphalt Pavement based on Hamburg Wheel Tracking Test Properties. *Journal of Materials in Civil Engineering*, 2017, DOI: [10.1061/\(ASCE\)MT.1943-5533.0001946](https://doi.org/10.1061/(ASCE)MT.1943-5533.0001946)

2016

31. **S. Wu**, H. Wen*, W. Zhang, S. Shen, A. Faheem, and L. N. Mohammad. Long-Term Field Transverse Cracking Performance of Warm-Mix Asphalt Pavement and Its Significant Material Property. *Transportation Research Record: Journal of the Transportation Research Board*, No. 2576, 2016, pp. 109-120.
32. **S. Wu***, H. Wen, S. Chaney, K. Littleton, and S. Muench. Evaluation of Long-Term Performance of Stone Matrix Asphalt in Washington State. *Journal of Performance of Constructed Facilities*, 2016, DOI: [http://dx.doi.org/10.1061/\(ASCE\)CF.1943-5509.0000939](http://dx.doi.org/10.1061/(ASCE)CF.1943-5509.0000939)
33. **S. Wu**, K. Zhang, H. Wen*, J. DeVol, and K. Kelsey. Performance Evaluation of Hot Mix Asphalt Containing Recycled Asphalt Shingles in Washington State. *Journal of Materials in Civil Engineering*, 2015, DOI: [10.1061/\(ASCE\)MT.1943-5533.0001357](https://doi.org/10.1061/(ASCE)MT.1943-5533.0001357), [04015088](https://doi.org/10.1061/(ASCE)MT.1943-5533.00015088)
34. **S. Wu**, H. Wen*, W. Zhang, S. Shen, L. N. Mohammad, A. Faheem, and B. Muhunthan. Field Performance of Top-down Fatigue Cracking for Warm Mix Asphalt Pavements. *International Journal of Pavement Engineering*, 2016, DOI: <http://dx.doi.org/10.1080/10298436.2016.1248204>
35. H. Wen*, **S. Wu**, L.N. Mohammad, W. Zhang, S. Shen, and A. Faheem. Long-Term Field Rutting and Moisture Susceptibility Performance of Warm-Mix Asphalt Pavement. *Transportation Research Record: Journal of the Transportation Research Board*, No. 2575, 2016, pp. 103-112.
36. H. Wen, **S. Wu***, S. Chaney, K. Littleton, and S. Muench. Quantification of the Effects of Bitumen Surface Treatments on the Material Properties of Existing Asphalt Pavement. *Journal of Materials in Civil Engineering*, 2016, DOI: <http://ascelibrary.org/doi/abs/10.1061/%28ASCE%29MT.1943-5533.0001789>
37. N. Bower, H. Wen*, **S. Wu**, K. Willoughby, J. Weston, and J. DeVol. Evaluation of the Performance of Warm Mix Asphalt in Washington State. *International Journal of Pavement Engineering*, Vol. 17, Issue 5, 2016, pp. 423-434.

2015

38. H. Wen*, **S. Wu**, and S. Bhusal. Evaluation of the Use of Steel Slag as Asphalt Mix Asphalt to Mitigate Studded Tire Wear. *Journal of Materials in Civil Engineering*, 2015, DOI: [10.1061/\(ASCE\)MT.1943-5533.0001475](https://doi.org/10.1061/(ASCE)MT.1943-5533.0001475), [04015191](https://doi.org/10.1061/(ASCE)MT.1943-5533.00015191)
39. W. Zhang, S. Shen*, P. Basak, H. Wen, **S. Wu**, A. Faheem, and L. N. Mohammad. Development of Predictive Models for Initiation and Propagation of Field Transverse Cracks. *Transportation Research Record: Journal of the Transportation Research Board*, No. 2524, 2015, pp. 92-99.

2010-2011

40. M. Zeng, **S. Wu**, et al. Experimental Study on Steel Slag-Crushed Stone Pavement Base Materials Stabilized with Portland Cement. *Natural Science Journal of Xiangtan University*, Vol. 33, 2011, pp. 29-33 (in Chinese).
41. M. Zeng, H. Huang, L. Peng, and **S. Wu**. Dynamic Properties of Crumb Rubber Modifier Asphalt

Concrete under Impact Loading, *Journal of Hunan University (Natural Sciences)*, Issue 12, 2011, pp. 1-7 (in Chinese).

42. Y. Zhu, C. Wu, J. Zhang, and **S. Wu**. Comparison of Performances of Warm Mix Asphalt Mixtures with Three Additives. *Highway*, Issue 7, 2011, pp. 202-206 (in Chinese).
43. Y. Zhu, M. Zeng, **S. Wu**, and C. Wu. Influences of Warm Mix Asphalt Additive Sasobit on Properties of Paving Asphalt. *Central South Highway Engineering*, Vol. 35, 2010, pp. 42-44 (in Chinese).

B. Journal Papers Under Review

1. **S. Wu***, O. Tahri, S. M. Theeda, G. Allen, C. Spell, L. Montalvo, and M. Renick. Performance Evaluation of Cold-Applied Rejuvenator Technology for 100% Reclaimed Asphalt Pavement Mix Overlay for a Low Volume Dirt Road, *Journal of the Transportation Research Board*, 2021.
2. L. Liu, **S. Wu***, G. Yao, J. Zhang, and L. Montalvo. Developing In-Situ Permeability and Volumetric Requirements for Open-Graded Friction Course Pavement. *Journal of the Transportation Research Board*, 2021.
3. **S. Wu***, O. Tahri, S. Shen, W. Zhang, and B. Muhunthan. Environmental Impact Evaluation and Long-term Rutting Resistance Performance of Warm Mix Asphalt Technologies. *Journal of Cleaner Production*, 2020.
4. **S. Wu***, and L. Montalvo. Repurposing Waste Plastics into Cleaner Asphalt Pavement Materials: A Critical Literature Review. *Journal of Cleaner Production*, 2020.
5. K. Yan, H. Lan, W. Liu, L. You, **S. Wu**, and M. Miljković. Evaluation of The Performance of Asphalt Rejuvenated with Various Vegetable Oils. *Journal of Cleaner Production*, 2020.

C. Technical Reports

1. S. Sillick, J. Bittner, H. Hagedorn, D. Kuehn, J. Mcdermott, M. Perchanok, H. Xiang, and **S. Wu**. Transportation Research: Where We've Been, Where We Are, and Where We Are Heading. Centennial Celebration Paper, TRB ABG 10 Conduct of Research Committee.
2. I. L. Al-Qadi, D. L. Lippert, **S. Wu**, H. Ozer, G. Renshaw, I. M. Said, A. F. Espinoza-Luque, F. R. Safi, T. R. Murphy, A. Butt, S. Gundapuneni, J. S. Trepanier, and J. W. Vespa. Utilizing Lab Tests to Predict Asphalt Concrete Overlay Performance. Report No. FHWA-ICT-17-020. Illinois Center for Transportation, December 2017.
3. D. L. Lippert, **S. Wu**, and H. Ozer. Illinois Highway Materials Sustainability Efforts of 2015. Report No. FHWA-ICT-16-017, Illinois Center for Transportation, August 2016.
4. D. L. Lippert, **S. Wu**, and H. Ozer. Illinois Highway Materials Sustainability Efforts of 2016. Report No. FHWA-ICT-17-014, Illinois Center for Transportation, July 2017.
5. S. Shen, **S. Wu**, W. Zhang, L. N. Mohammad, and B. Muhunthan. Performance of WMA Technologies: Stage II – Long-term Field Performance. NCHRP Report 843, 2017.
6. D. L. Lippert, **S. Wu**, H. Ozer, I. L. Al-Qadi, J. F. Meister, G. Renshaw, M. K. Barry, I. M. Said, A. F. Espinoza Luque, F. R. Safi, T. R. Murphy, J. S. Trepanier, and J. W. Vespa. Construction and Performance Monitoring of Various Asphalt Mixes in Illinois: 2016 Interim Report. Report No. FHWA-ICT-17-003. Illinois Center for Transportation, February 2017.
7. H. Ozer, I. L. Al-Qadi, E. Barber, E. Okte, Z. Zhu, and **S. Wu**. Evaluation of I-FIT Results and Machine Variability Using Mnroad Test Track Mixtures. Report No. FHWA-ICT-17-012, Illinois Center for Transportation, June 2017.
8. H. Wen., **S. Wu**, and S. Bhusal. Evaluation of Steel Slag as Hot Mix Asphalt Aggregate. Report prepared for Edw. C. Levy Co., and Nucor Steel Seattle Inc., 2014.

9. H. Wen, **S. Wu**, and K. Zhang. Performance Evaluation of Hot Mix Asphalt Containing Recycled Asphalt Shingles in Washington State. In cooperation with Washington Department of Transportation, King County Solid Waste, and King County Department of Transportation, Road Services Division, 2014.

D. Peer-reviewed Conference Presentations

2020

1. **S. Wu***, S. Zha, J. Estis, and X. Li. Innovative Pedagogy: Improving STEM Students' Technical Writing Skills Using Team-Based Learning (TBL). 10th Annual South Alabama Conference on Teaching and Learning, Mobile, AL, May 12, 2020.
2. **S. Wu***, L. Liu, G. Yao, J. Zhang, and O. Tahri. An Alternative Permeability Indicator to Determine Optimal Maintenance Timing for Open-Graded Friction Course. Presented at 99th Transportation Research Board Meeting, Washington, D.C., January 12-16, 2020.
3. **S. Wu***, W. Zhang, S. Shen, and B. Muhunthan. Permanent Deformation Resistance of Long-Term Field Aged Asphalt Pavements. Presented at 99th Transportation Research Board Meeting, Washington, D.C., January 12-16, 2020.
4. W. Zhang, X. Chen, S. Shen, L. N. Mohammad, **S. Wu**, and T. Ma. Characterization of Long-Term Field Rutting Performance of Asphalt Pavements Based on Hamburg Wheel-Tracking Test Results. Presented at 99th Transportation Research Board Meeting, Washington, D.C., January 12-16, 2020.

2019

5. **S. Wu***. Integrating Team-based Learning (TBL) Modules to Improve Civil Engineering Students' Technical Writing Skill. PE/CoTL Conference, Mobile, AL, June 24, 2019.
6. O. Tahri, and **S. Wu***. Evaluation of Effectiveness of Bio-based Graphene for Asphalt Pavement. International Conference On Transportation & Development, June 9-12, 2019, Alexandria, VA.
7. **S. Wu***, W. Zhang, S. Shen, and B. Muhunthan. Field Performance of Foaming Warm Mix Asphalt Pavement. Presented at 98th Transportation Research Board Meeting, Washington, D.C., January 12-17, 2019.

2018

8. **S. Wu***, and K. Littleton. Case Study: Long-term Performance of SMA Pavements in Washington State. 1st International Conference on Stone Matrix Asphalt, Atlanta GA, November 6, 2018.
9. S. Shen, W. Zhang, **S. Wu**, L. Mohammad, and B. Muhunthan. Long-term Field Performance of Flexible Pavements Using Warm Mix Asphalt Technologies, Presented at 93rd Association of Asphalt Paving Technologist (AAPT) Annual Meeting, Jacksonville, FL, March 20, 2018.
10. **S. Wu**, W. Zhang, S. Shen, and B. Muhunthan. Asphalt Binder Property to Mixture Property Correlation Based on Field-Aged Samples. Presented at 97th Transportation Research Board Meeting, Washington, D.C., January 7-11, 2018.
11. W. Zhang, S. Shen, and **S. Wu**. Comparison of the Relative Long-term Field Performance among Various WMA Pavements. Presented at 97th Transportation Research Board Meeting, Washington, D.C., January 7-11, 2018.
12. F. R., Safi, K. Hossain, **S. Wu**, I. L. Al-Qadi, and H. Ozer. A Model to Predict Creep Compliance of Asphalt Mixtures. Presented at 97th Transportation Research Board Meeting, Washington, D.C., January 7-11, 2018.
13. B. Edoardo, O. Hason, I. L. Al-Qadi, O. Egemen, Z. Zhu, and **S. Wu**. Effect of I-FIT Configuration on Test Results of Asphalt Mixtures, Presented at 97th Transportation Research Board Meeting, Washington, D.C., January 7-11, 2018.

2017

14. I. L. Al-Qadi, **S. Wu**, D. L. Lippert, H. Ozer, M. K. Barry, and F. R. Safi. Impact of High Recycled Mixes on HMA Overlay Crack Development Rate. Presented at 92nd Association of Asphalt Paving Technologist (AAPT) Annual Meeting, Newport Beach, CA, March 19-22, 2017.
15. **S. Wu**, D. L. Lippert, I. L. Al-Qadi, H. Ozer, I. M. Said, and M. K. Barry. Effect of High Binder Replacement on the Effectiveness of Level Binder in Controlling Reflective Cracking. Presented at 96th Transportation Research Board Annual Meeting, Washington, D.C., January 8-12, 2017.
16. **S. Wu**, W. Zhang, S. Shen, B. Muhunthan, and L. N. Mohammad. Case Study: Short-term Performance and Material Property Evolution of Warm Mix Asphalt and Hot Mix Asphalt Pavements. Presented at 96th Transportation Research Board Annual Meeting, Washington, D.C., January 8-12, 2017.
17. **S. Wu**, I. L. Al-Qadi, D. L. Lippert, H. Ozer, A. F. Espinoza Luque, and F. R. Safi. Early-Age Performance Characterization of Hot-Mix Asphalt Overlay with Varying Amounts of Asphalt Binder Replacement. Presented at 96th Transportation Research Board Annual Meeting, Washington, D.C., January 8-12, 2017.
18. W. Zhang, S. Shen, **S. Wu**, and L.N. Mohammad. Long-term Field Aging of Warm Mix and Hot Mix Asphalt Binders. Presented at 96th Transportation Research Board Meeting, Washington, D.C., January 8-12, 2017.

2016

19. **S. Wu**, H. Wen, W. Zhang, S. Shen, A. Faheem, and L. N. Mohammad. Long-Term Field Performance of Transverse Cracking for Warm Mix Asphalt Pavement and Identification of Significant Material Property for Transverse Cracking. Presented at 95th Transportation Research Board Annual Meeting, Washington, D.C., January 10-14, 2016.
20. H. Wen., **S. Wu**, L.N. Mohammad, W. Zhang, S. Shen, and A. Faheem. Long-Term Field Rutting and Moisture Susceptibility Performance of Warm Mix Asphalt Pavement. Presented at 95th Transportation Research Board Annual Meeting, Washington, D.C., January 10-14, 2016.
21. **S. Wu**, H. Wen, W. Zhang, S. Shen, L. N. Mohammad, A. Faheem. Long-Term Field Performance of Top-down Fatigue Cracking for Warm Mix Asphalt Pavements and Identification of Significant Material Determinant of Top-down Fatigue Cracking. Presented at 95th Transportation Research Board Annual Meeting, Washington, D.C., January 10-14, 2016.
22. H. Wen, **S. Wu**, S. Chaney, K. Littleton, and S. Muench. Quantification of the Effects of Bitumen Surface Treatments on the Material Properties of Existing Asphalt Pavement. Presented at 95th Transportation Research Board Annual Meeting, Washington, D.C., January 10-14, 2016.

2015

23. H. Wen, **S. Wu**, and S. Bhusal. Evaluation of the Use of Steel Slag as Asphalt Mix Asphalt to Mitigate Studded Tire Wear. Presented at 94th Transportation Research Board Annual Meeting, Washington, D.C., January 11-15, 2015.
24. H. Wen, **S. Wu**. Long-term Field Performance of Warm Mix Asphalt. Presented at Federal Highway Administration (FHWA) Asphalt Mixture Expert Task Group (ETG) Meeting, Fall River, MA, April 7-8, 2015.

2014

25. N. Bower, H. Wen, **S. Wu**, K. Willoughby, J. Weston, and J. DeVol. Evaluation of the Performance of Warm Mix Asphalt in Washington State. Presented at 93rd Transportation Research Board Annual Meeting, Washington, D.C., January 12-16, 2014.
26. **S. Wu**, K. Zhang, H. Wen, J. DeVol, and K. Kelsey. Performance Evaluation of Hot Mix Asphalt

Containing Recycled Asphalt Shingles in Washington State. Presented at 93rd Transportation Research Board Annual Meeting, Washington, D.C., January 12-16, 2014.

27. S. Shen, W. Zhang, **S. Wu**, and L. N. Mohammad. Investigation of the Effect of Warm-Mix Asphalt Properties on Predicted Pavement Performance Using Pavement Mechanistic-Empirical Program. Presented at 93rd Transportation Research Board Annual Meeting, Washington, D.C., January 12-16, 2014.

E. Transportation Research Board (TRB) Webinar

1. Long-term Field Performance of Warm Mix Asphalt Pavements. October 25, 2017.

Peer Reviewer

- Editorial board member, Journal Testing and Evaluation, 2015-
- Editorial board member, Journal of Pavement Research and Technology, 2019-
- Paper review coordinator for the Journal of Transportation Research Record, ABG10 Committee, 2018-2019
- Paper review coordinator for the Journal of Transportation Research Record, AJE 35 Standing Committee on Research Innovation Implementation, 2020-
- Peer reviewer for journals (up to August, 2020)

Journal	Papers Reviewed
▪ Journal of Materials in Civil Engineering	68
▪ Journal of Testing and Evaluation	17
▪ Construction and Building Materials	47
▪ International Journal of Pavement Engineering	23
▪ Road Materials and Pavement Design	10
▪ International Journal of Pavement Research Technology	15
▪ Sustainable Civil Infrastructure	25
▪ Advances in Civil Engineering Materials	2
▪ International Journal of Fatigue	4
▪ Transportation Geotechnics	2
▪ Resources, Conservation and Recycling	2
▪ Journal of Traffic and Transportation Engineering	5
▪ Case Studies in Construction Materials	19
▪ Journal of Cleaner Production	15
▪ Journal of Transportation Engineering Part b: Pavement	6
▪ MDPI-Energy, MDPI-Materials, MDPI-Infrastructures	13
▪ European Journal of Environmental and Civil Engineering	1
▪ Journal of Civil Engineering Education	2

- Peer reviewer for conferences

Conference	Papers Reviewed
▪ The 99 th Transportation Research Board 2020 Annual Meeting, Washington, D.C., January 12-16, 2020	12
▪ World Transport Convention 2019, Beijing, China, June 13-16, 2019	4

▪ ASCE International Conference on Transportation & Development (ICTD), Chicago, Pennsylvania, July 21-24, 2019	4
▪ PE Conference/CoTL 2019, Mobile, AL, June 24-26, 2019	2
▪ The 98 th Transportation Research Board 2019 Annual Meeting, Washington, D.C., January 13-17, 2019	11
▪ The 97 th Transportation Research Board 2018 Annual Meeting, Washington, D.C., January 7-11, 2018	16
▪ The 96 th Transportation Research Board 2017 Annual Meeting, Washington, D.C., January 8-12, 2017	2
▪ ASCE International Conference on Transportation & Development (ICTD), Pittsburgh, Pennsylvania, July 15-18, 2018	3
▪ World Conference on Pavement and Asset Management, June 12-16, 2017 in Baveno, Italy	6
▪ GeoShanghai International Conference 2018, Shanghai, China, May 27-30, 2018	2
▪ 2016 International Conference on Transportation Infrastructure and Materials, Xi'an, China, July 16-18, 2016	2
▪ 91 st Association of Asphalt Pavement Technologist (AAPT) 2016 Student Poster Session, Indianapolis, Indiana, March 13-16, 2016	5
▪ Pavement Life Cycle Assessment Symposium 2017, Champaign, IL, April 11-13, 2017	2
▪ 4 th Annual 2016 International Conference on Material Science and Environmental Engineering, Chengdu, China, December 16-18, 2016	6
▪ World Transport Convention 2018, Beijing, China, June 18-21, 2018	12