

Hao Wang

Current Position:

Assistant Professor
Department of Civil and Environmental Engineering,
Rutgers, The State University of New Jersey, Piscataway, NJ, 08854
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Research Interest:

- *Innovative and sustainable infrastructure material*
- *Computational modeling and mechanics of structure material*
- *Application of sensor and non-destructive testing for transportation infrastructure*
- *Pavement design, maintenance, and management*

Education:

- Ph.D., Civil Engineering; University of Illinois at Urbana-Champaign, Urbana: 2011
Dissertation: *Analysis of Tire-Pavement Interaction and Pavement Responses Using A Decoupled Modeling Approach*
- M.S., Civil Engineering; Virginia Tech, Blacksburg: 2006
Thesis: *Road Profilers' Performance Evaluation and Accuracy Criteria Analysis*
- M.S., Transportation Engineering; Southeast University, Nanjing, China: 2004
Thesis: *Study of Ground and Embankment Treatment Techniques in Road Widening*
- B.S., Civil Engineering; Southeast University, Nanjing, China: 2001

Academic Work History:

- Assistant Professor, Rutgers, The State University of New Jersey, Aug. 2011 – present
- Graduate Research Assistant, Illinois Center For Transportation, Aug. 2006 - Mar. 2011
Focused research: *advanced material characterization for sustainable design of pavement structure; computational modeling and mechanics*
- Graduate Research/Teaching Assistant, Department of Civil and Environmental Engineering; Virginia Tech, Aug. 2004 - May. 2006
Focused research: *pavement surface characteristics for driving safety, including friction, texture, and roughness*
- Research Associate, Highway and Railway Research Institute, Southeast University, Nanjing, China, Aug. 2001 - May. 2004
Focused research: *ground improvement techniques for road widening using finite element modeling and centrifuge test*

Selected Journal Publications:

1. Wang, H. and I.L. Al-Qadi, "Near-Surface Pavement Failure under Multiaxial Stress State in Thick Asphalt Pavement," *Journal of Transportation Research Board*, No. 2154, TRB, 2010, pp. 91-99
2. Wang, H. and I.L. Al-Qadi, "Combined Effect of Moving Wheel Loading and Three-Dimensional Contact Stresses on Perpetual Pavement Responses," *Journal of Transportation Research Board*, No. 2095, TRB, 2009, pp. 53-61
3. Wang, H. and I.L. Al-Qadi, "Evaluation of Surface-Related Pavement Damage due to Tire Braking," *Road Materials and Pavement Design*, Vol. 11, No. 1, 2010, pp. 101-122

4. Wang, H. and G.W. Flintsch, "Comparative Study of Road Profilers' Accuracy and Precision," *Journal of Testing and Evaluation*, ASTM, Vol. 38, No. 2, 2010, pp. 188-194
5. Wang, H., I.L. Al-Qadi, A.F. Faheem, H.U. Bahia, S.H. Yang and G.H. Reinke, "Effect of Mineral Filler Characteristics on Asphalt Mastic and Mixture Rutting Potential," *Journal of Transportation Research Board*, TRB, 2011 (In Press)
6. Wang, H. and I.L. Al-Qadi, "Impact Quantification of Wide-base Tire Loading on Secondary Road Flexible Pavements," *Journal of Transportation Engineering*, ASCE, Vol. 137, No. 9, 2011, pp. 630-639
7. Wang, H., I.L. Al-Qadi, and I. Stanciulescu, "Simulation of Tire-Pavement Interaction for Predicting Contact Stresses at Static and Rolling Conditions," *International Journal of Pavement Engineering*, Published online on Apr. 2011
8. Wang, H. and X. Huang, "Stress and Deformation due to Embankment Widening with Different Treatment Techniques," *Journal of Central South University of Technology*, Vol.18, No.4, 2011, pp. 1304-1310
9. Al-Qadi, I.L., H. Wang, P.J. Yoo, and S.H. Dessouky, "Dynamic Analysis and In-Situ Validation of Perpetual Pavement Response to Vehicular Loading," *Journal of Transportation Research Board*, No. 2087, TRB, 2008, pp. 29-39 (**TRB K. B. Wood Award Best Paper Runner-up**).
10. Al-Qadi, I.L., H. Wang, and E. Tutumluer, "Dynamic Analysis of Thin Asphalt Pavements Utilizing Cross-Anisotropic Stress-Dependent Properties for Granular Layer," *Journal of Transportation Research Board*, No. 2154, TRB, 2010, pp. 156-163.
11. Baek, J, H. Ozer, H. Wang, I.L. Al-Qadi, "Effects of Interface Conditions on Reflective Cracking Development in Hot-Mix Asphalt Overlays," *Road Materials and Pavement Design*, Vol. 11, No. 2, 2010, pp. 307-334

Professional Affiliations:

- Young Member of TRB AFK40 Committee on Characteristics of Asphalt-Aggregate Combinations to Meet Surface Requirements, 2011-present
- Member of TRB AFD90 Committee on Surface Properties - Vehicle Interaction, 2007-present
- American Society of Civil Engineering (ASCE), Associate Member
- American Society for Testing and Materials (ASTM), Member
- Society of Pavement Engineer at Illinois, Founding Member

Peer Reviewer:

- Journal of Material in Civil Engineering, ASCE
- Journal of Transportation Engineering, ASCE
- Journal of Transportation Research Board: Transportation Research Record
- International Journal of Pavement Engineering
- Eighth International Conference on the Bearing Capacity of Roads, Railways, and Airfields (BCR2A), Urbana, 2009
- Sixth RILEM International Conference on Cracking in Pavements, Chicago, 2008

Honors:

- Yee Memorial Fund Fellowship, College of Engineering, UIUC, 2010
- Dwight David Eisenhower Graduate Fellowship Grant (\$11500), Federal Highway Administration (FHWA), 2008
- First Prize, Airport Operation and Maintenance Design Challenge, Federal Aviation Administration (FAA), 2008
- Runner-up, K. B. Woods Award for Best Paper in Design and Construction Group, Transportation Research Board of National Academies, 2008
- Outstanding Service Award, Virginia Tech ARTBA Student Chapter, 2006
- Kenneth E. Wilkinson Scholarship, Institute of Transportation Engineering (ITE) Virginia Section, 2005
- PRATT Fellowship, Virginia Tech, 2004