Amir Arshadi, PhD, EIT

Post-Doctoral Research Fellow College of Engineering The University of Oklahoma, Norman, OK

Employment Eligibility

Permanently authorized to live and work in the United States (Green Card holder)

Contact Information

Address	202 W. Boyd St., Rm. 213A, Norman, OK 73019, US
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Education

2013-2015	Ph.D. (Major), Civil and Environmental Engineering (Pavement Materials)	
	Ph.D. (Minor), Engineering Mechanics	
	University of Wisconsin, Madison, WI, USA. Thesis Topic: Development of an Image-	
	based Multi-Scale Finite Element Approach to Predict Fatigue Damage in Asphalt	
	Mixtures. Thesis Advisor: Hussain U. Bahia, Ph.D.	
	GPA: 3.70/4.0	
2011-2013	M.S. in Civil Engineering (Pavement Materials)	
	University of Wisconsin, Madison, WI, USA. Thesis Topic: Importance of Asphalt	
	Binder Properties on Rut Resistance of Asphalt Mixture. Thesis Advisor: Hussain U.	
	Bahia, Ph.D.	
	GPA: 3.72/4.0	
2008-2010	M.S. in Civil Engineering (Structural Engineering)	
	Sharif University of Technology, Tehran, Iran. Thesis Topic: Study of size effect via	
	strain-gradient elasticity based RKPM. Thesis Advisor: Hossein M. Shodja, Ph.D.	
	GPA: 3.66/4.0	
2004-2008	B.S. in Civil Engineering	
	Sharif University of Technology, Tehran, Iran.	
	GPA: 3.18/4.0	
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Professional Appointments

2015-Present Research Fellow, University of Oklahoma

- 2011-2015 Research Assistant, University of Wisconsin-Madison
- 2008-2010 Research Assistant, Sharif University of Technology, Tehran, Iran.
- **2007-2008 Design Assistant**, Perlite Construction Company, Tehran, Iran.

Publications

Dissertations

- D1 Arshadi, A., (2015) "Development of an Image-based Multi-Scale Finite Element Approach to Predict Fatigue Damage in Asphalt Mixtures," *PhD Dissertation*, University of Wisconsin-Madison, Madison, WI, (pp. 147).
 D2 Arshadi, A., (2013) "Importance of Asphalt Binder Properties on Rut Resistance of Asphalt
- **D2 Arshadi, A.**, (2013) "Importance of Asphalt Binder Properties on Rut Resistance of Asphalt Mixture," *MSc Dissertation*, University of Wisconsin-Madison, Madison, WI, (pp. 83).
- **D3 Arshadi, A.**, (2010) "Study of Size Effect via Strain-gradient Elasticity Based RKPM in Nano-Structures," *MSc Dissertation*, Sharif University of Technology, Tehran, Iran, (pp. 114).

Amir Arshadi 2 Journal Papers **J1** Arshadi, A., Steger, R., Ghabchi, R., Zaman, M., Commuri, S. (2017). "Performance Evaluation of Plant-Produced Warm Mix Asphalts Containing RAP and RAS." Accepted for publication in Journal of Association of Asphalt Pavement Technologists. **J2** Arshadi, A., Ghabchi, R., Ali, S. A., Barman, M., Zaman, M., Commuri, S. (2016). "Cracking Resistance of Laboratory- and Field-Compacted Warm Mix Asphalts Containing Recycled Materials," In Press for Journal of Construction and Building Materials. Imran, S., Arshadi, A., Commuri, S., Zaman, M. (2016). "Real-time Evaluation of Pavement **J**3 Subgrade Modulus using an Intelligent Compaction Tool," In Press. Ling, C., Arshadi, A., Bahia, H. (2016). "Importance of Binder Modification Type and J4 Aggregate Structure on Rutting Resistance of Asphalt Mixtures Using Image-based Multi-scale Modeling," Accepted for Publication in Journal of Road Materials and Pavement Design. Arshadi, A., Bahia, H. (2015). "Development of an Image-based Multi-Scale Finite-Element **J5** Approach to Predict Mechanical Response of Asphalt Mixtures," Journal of Road Materials and Pavement Design, 16(sup2), pp.214-229. Tabatabaee, H., Clopotel, C., Arshadi, A., Bahia, H. (2013). "Critical Problems with Using the **J6** Asphalt Ductility Test as a Performance Index for Modified Binders," Transportation Research Record: Journal of the Transportation Research Board, Transportation Research Board of the National Academies, Washington, D.C., vol. 1, pp. 84-91. Refereed Conference Papers **C1** Ahmed, A., Arshadi, A., Bahia, H., Erlingsson, S. (2016). "Evaluation of Rutting Performance of Asphalt Mixtures using Extra-Large Wheel Tracking and 2-D Imaging Technique," 6th Eurasphalt and Eurobitume Congress Proceeding. Major Technical Reports **R1** Christensen, D.W., Hanz, A., Velasquez, R., Arshadi, A., Bahia, H. (2013). "Refinement of Current WisDOT HMA Mixture Application Guidelines Related to NMAS and Aggregate Characteristics," WHRP # 0092-12-0. **R2** Marasteanu, M., Bahia, H., Buttlar, W., Williams, C., Arshadi, A., Velasquez, R., Moon, K.H., Dave, E., Buss, A., Tabatabaee, H., Zegeye, E., Paulino, G., Bausano, J., Cannone Falchetto, A., Ahmed, S., Turos, M., Kvasnak, A., Puchalski, S., Mangiafico, S., Leon, S., Braham, A., Behnia, B. (2012). "Investigation of Low Temperature Cracking in Asphalt Pavements National Pooled Fund Study - Phase II, Report MN/RC 2012-23," Minnesota Department of Transportation. **Presentations** Conference Presentations **P1** Arshadi, A., Steger, R., Ghabchi, R., Zaman, M., Commuri, S. (2017). "Performance Evaluation of Plant-Produced Warm Mix Asphalts Containing RAP and RAS," Accepted for presentation at

Association of Asphalt Pavement Technologists, California, Newport Beach. **P2** Ali, S. A., Arshadi, A., Ghabchi, R., Zaman, M. (2016). "Field and Laboratory Investigation of Fatigue Performance of Oklahoma Warm Mix Asphalts," Presented at 2016 SPTC Summer Symposium, Oklahoma, Oklahoma City. Ling, C., Arshadi, A., Bahia, H. (2016). "Evaluation of Asphalt Binder Modification and **P3** Aggregate Structure Importance of Rutting Resistance of Asphalt Mixtures Using Image-Based Multi-Scale Modeling," Presented at the 95th Annual Meeting of the Transportation Research Board of the National Academies of Science. **P4** Imran, S., Commuri, S., Barman, M., Arshadi, A., Zaman, M. (2015). "Intelligent Asphalt Compaction Analyzer for Quality Control of Asphalt Pavement during Compaction," Presented at 2015 Oklahoma Transportation Research Day, Oklahoma, Moore. **P5** Arshadi, A., Bahia, H. (2015). "Development of an Image-based Multi-Scale Finite Element Approach with Effective Simulation of Particle-to-Particle Contact Behavior to Predict

Amir Arshadi Mechanical Response of Asphalt Mixtures," AFK50 sub-committee meeting in Transportation Research Board of the National Academies, Washington, D.C. Arshadi, A., Bahia, H. (2015). "Coupling of Viscoelastic Continuum Damage Mechanics and **P6** Finite Element Modeling to Predict Asphalt Mastic Fatigue Behavior," Presented at the 94th Annual Meeting of the Transportation Research Board of the National Academies of Science. **P7** Arshadi, A., Tabatabaee, H.A., Roohi Sefidmazgi, N., Bahia, H. (2014). "Enhanced Finite Element Multiscaling Approach for Prediction of Mechanical Response of Asphalt Mixtures," Presented at the 93rd Annual Meeting of the Transportation Research Board of the National Academies of Science, January 14, Washington D.C. Tabatabaee, H., Clopotel, C., Arshadi, A., Bahia, H. (2013). "Critical Problems with Using the **P8** Asphalt Ductility Test as a Performance Index for Modified Binders," Presented at the 92nd Annual Meeting of the Transportation Research Board of the National Academies of Science, January 15, Washington D.C. **P9** Velasquez, R., Arshadi, A., Roohi Sefidmazgi, N., Tabatabaee, H.A., Bahia, H. (2011). "Micromechanical Simulation of Glass Transition in Asphalt Mixtures," Presented at the US National Congress on Computational Mechanics, July 27, Minneapolis, MN.

Delivered Technology Transfer Workshops

W1 Arshadi, A. Recommended Fatigue Test for Oklahoma Department of Transportation. *Sponsored* by: Oklahoma Department of Transportation. March 22-24, 2016.

Research Experience

2016-Present	Development of Special Provision for Mix Design of Foamed-WMA Containing RAP.
	Southern Plains Transportation Center, Project 15.1-31.
2015-Present	Special Provisions for Intelligent Compaction of Stabilized Soil Subgrades. Southern Plains
	Transportation Center, Project 14.203.
2015-Present	Recommended Fatigue Test for Oklahoma Department of Transportation. Oklahoma
	Department of Transportation, Project 2243.
2015-Present	Use of Ground Tire Rubber (GTR) In Asphalt Pavements: Literature Review and DOT
	Survey. Oklahoma Department of Environmental Quality.
2014-2015	Analysis and Feasibility of Asphalt Pavement Performance-Based Specifications for
	WisDOT. Wisconsin Highway Research Program.
2014-2015	Optimization of the Binder Content of Hot Mix Asphalts. University of Wisconsin-Madison,
	Madison, Wisconsin. USA.
2014-2015	Evaluation of Rutting Performance of Asphalt Mixtures using an Extra-large Wheel
	Tracking Device via 2-D Imaging Technique. University of Wisconsin-Madison, Madison,
	Wisconsin. USA.
2011-2014	Numerical and Experimental Assessment of Role of Binder Elasticity and Aggregate
	Structure on Rutting Resistance of Asphalt Binders. Asphalt Research Consortium, Federal
	Highway Administration Contract No. DTFH61-07-H-00009.
2012-2014	Refinement of Current WisDOT HMA Mixture Application Guidelines Related to NMAS
	and Aggregate Characteristics. Wisconsin Highway Research Program Project 0092-12-01.
2012-2013	Verify Relationship between DSR Binder Fatigue Tests and Mixture Fatigue Performance.
	Asphalt Research Consortium, Federal Highway Administration Contract No. DTFH61-07-H-
	00009.
2008-2010	Study of Size Effect via Strain-gradient Elasticity based RKPM. Sharif University of
	Technology, Tehran, Iran.
2009	Spectral Equivalent Inclusion Method: Anisotropic Cylindrical Multi-inhomogeneities.
	Sharif University of Technology, Tehran, Iran.
2009	Determination of the Scattered Fields of an SH-wave by an Ellipsoidal Inhomogeneity in an
	Infinite Domain using DEIM (Dynamic Equivalent Inclusion Method). Sharif University of
	Technology, Tehran, Iran.

Amir Arshadi

Teaching Experience	
2017	Co-Instructor
	Course PE 2153: Mechanics of Materials (undergraduate level)
	University of Oklahoma
2016	Instructor
	Course CEES 5693: Structural Design of Pavements (graduate level)
	University of Oklahoma
2012	Co-Instructor and Teacher Assistantship
	Course CEE 695: Micromechanical Modeling of Asphalt Mixtures (graduate level)
	University of Wisconsin-Madison
2005	Teaching Physics and Mathematics in Din o Danesh high school.

Awards and Honors

2008	Ranked 15th among more than 15,000 participants in the M. Sc. Entrance Exam.
2004	National university entrance exam, Physics and Math Discipline, <i>Ranked 236th</i> (Among more than 300,000 participants), July.
2004	Exceptional Talent Award by ranking 1st in the Azad University National Entrance Exam.

Professional Activities

Journal Reviewer

- *Reviewer*, ASCE International Journal of Geomechanics
- *Reviewer*, Journal of the Transportation Research Board (TRB)
- Reviewer, Journal of Materials in Civil Engineering

Professional Affiliations

AAPT	Association of Asphalt Pavement Technologists (Active Member)
ASCE	American Society of Civil Engineering (Member)
EMI	Engineering Mechanics Institute (Member)
TRB	Transportation Research Board AFK30 Committee (Friend)
TRB	Transportation Research Board AFK50 Committee (Friend)