

CURRICULUM VITAE

Dr. Akshay Gundla

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EDUCATION

2018 Ph.D., Civil Engineering, Arizona State University, Tempe, AZ, USA
2014 M.S., Civil Engineering, Arizona State University, Tempe, AZ, USA
2012 B.E., Civil Engineering, Osmania University College of Engineering, Hyderabad

EXPERIENCE

2021 Nov – Present Scientist, CSIR-Central Road Research Institute, New Delhi.
2018 Aug – 2021 Jan Staff Civil Engineer, Applied Research Associates, Inc., Gainesville, FL, USA.
2013 Jan – 2018 June Graduate Research Associate, Arizona State University, Tempe, AZ, USA.

AREAS OF EXPERTISE

Professional Practice

Pavement Design, Pavement Performance and Evaluation, Non-destructive Testing of Pavements;

Research

Asphalt Binder and Mixture Characterization; Asphalt Chemistry;

Teaching

Civil Engineering Materials (Instruction and Lab), Summer Transportation Institute (K-12)

HONORS AND AWARDS

- Florida TaxWatch Davis Productivity Award, 2019
- Dr. David R. Jones IV Scholarship, Association of Modified Asphalt Producers, 2018
- Outstanding Mentor Award, Graduate and Professional Student Association, Arizona State University, 2018
- Honorable Mention, Student Poster Competition, SSEBE Graduate Symposium, 2016
- International Road Federation Road Scholar Fellowship, 2014.
- First Place (Graduate Category), Arizona Pavements and Materials Conference Student Poster Competition, 2014
- Third Place, Student Poster Competition, SSEBE Graduate Symposium, 2014
- ASU Graduate and Professional Student Association (GPSA) Travel Grant, 2013-2017
- Undergraduate Merit Scholarship, Department of Higher Education, Ministry of Human Resource and Development, Government of India, 2008-2012

PROFESSIONAL CERTIFICATIONS

- Engineer-In-Training (EIT), Arizona Board of Technical Registration, 2019.
- Passed NCEES Professional Engineer (Civil) Exam, October 2020.

PUBLICATIONS

Articles in Refereed Archival Journals

1. Medina, J.R., A. Zalgout, **A. Gundla**, S. Castro., and K.E. Kaloush. "Use of Time–Temperature Superposition Principle to Create Pavement Performance Master Curves and Relate Pavement Condition Index and International Roughness Index." *Transportation Research Record* (2021):03611981211004965.
2. **Gundla, A.**, R. Salim, B.S. Underwood, and K.E. Kaloush. " Implementation of the AASHTO M 332 Specification: A Case Study." *Transportation Research Record* (2020): 0361198120933266.
3. **Gundla, A.**, and B.S. Underwood. "Molecular Weight Distribution of Asphalt Binders from Laser Desorption Mass Spectroscopy (LDMS) Technique and Its Relationship to Linear Viscoelastic Relaxation Spectra." *Fuel* 262 (2020): 116444.
4. Salim, R., **A. Gundla**, B.S. Underwood, and K.E. Kaloush. "Effect of MSCR Percent Recovery on Performance of Polymer Modified Asphalt Mixtures." *Transportation Research Record* 2673, no. 5 (2019): 308-319.
5. Salim, R., **A. Gundla**, A. Zalgout, B. S. Underwood, and K. E. Kaloush. "Relationship between Asphalt Binder Parameters and Asphalt Mixture Rutting." *Transportation Research Record* 2673, no. 6 (2019): 431-446.
6. **Gundla, A.**, P. Gudipudi, and B.S. Underwood (2017). "Evaluation of the Sensitivity of Asphalt Concrete Modulus to Binder Oxidation with a Multiple Length Scale Study," *Construction and Building Materials*, Vol. 152, pp. 954-963, DOI: doi.org/10.1016/j.conbuildmat.2017.07.067.
7. Stempihar, J., **A. Gundla**, and B.S. Underwood (2017). "Interpreting Stress Sensitivity in the Multiple Stress Creep and Recovery Test," *Journal of Materials in Civil Engineering*, Vol. 30(2), DOI: 10.1061/(ASCE)MT.1943- 5533.0002153
8. **Gundla, A.** and B.S. Underwood (2015). "Evaluation of in situ RAP Binder Interaction in Asphalt Mastics Using Micromechanical Models," *International Journal of Pavement Engineering*, Vol. 18(9), pp. 1-13, DOI: 10.1080/10298436.2015.1066003.
9. **Gundla, A.**, P. Gudipudi, J. Medina, R. Salim, W. Zeiada, and B.S. Underwood (2015). "Investigation of Aging in Hydrated Lime and Portland Cement Modified Asphalt Concrete at Multiple Length Scales," *Journal of Materials in Civil Engineering*, Vol. 28(5), DOI: 10.1061/(ASCE)MT.1943-5533.0001501.

Refereed Conference Publications

1. **Gundla, A.** and B.S. Underwood (2016). "Using Repeated Stress Sweep to Investigate Non-linearity in Asphalt Binders and Mastics by Fourier Transform Analysis," Proceedings *International Society for Asphalt Pavements Symposium and 53rd Petersen Asphalt Research Conference*, Jackson, Wyoming.

Published Research Reports

1. Kaloush, K.E., B.S. Underwood, R. Salim, **A. Gundla**. "Evaluation of MSCR Testing for Adoption in ADOT Asphalt Binder Specifications" Research Report FHWA-AZ-19-742, *Arizona Department of Transportation*, Phoenix (2019).
2. Kim, Y. R., C. Castorena, M. D. Elwardany, F. Yousefi Rad, S. Underwood, **A. Gundla**, P. Gudipudi, M. J. Farrar, and R. R. Glaser. "NCHRP Report 871: Long-Term Aging of Asphalt Mixtures for Performance Testing and Prediction." *Transportation Research Board of the National Academies*, Washington, DC (2018).

PRESENTATIONS

Refereed Conference Presentations

1. **Gundla, A.**, E. Offei, G. Wang, C. Holzschuher and B. Choubane (2020). "Implementation of A Decision Support Criteria for Flood Inundated Roadways." *99th Annual Meeting of the Transportation Research Board*, Washington, D.C.
2. **Gundla, A.**, R. Salim, B.S. Underwood, and K.E. Kaloush (2020). " Implementation of the AASHTO M 332 Specification: A Case Study." *99th Annual Meeting of the Transportation Research Board*, Washington, D.C.
3. Salim, R., **A. Gundla**, A. Zalghout, B. S. Underwood, and K. E. Kaloush (2019). "Relationship between Asphalt Binder Parameters and Asphalt Mixture Rutting." *98th Annual Meeting of the Transportation Research Board*, Washington, D.C.
4. Salim, R., **A. Gundla**, B.S. Underwood, and K.E. Kaloush (2019). "Effect of MSCR Percent Recovery on Performance of Polymer Modified Asphalt Mixtures." *98th Annual Meeting of the Transportation Research Board*, Washington, D.C.
5. **Gundla, A.** and B.S. Underwood (2017). "Molecular Weight Distribution of Asphalt Binders from Laser Desorption Ionization (LDI) Technique and its Relationship to Relaxation Spectra," *54th Petersen Asphalt Research Conference*, Laramie, WY.
6. Stempihar, J., **A. Gundla**, and B.S. Underwood (2017). "Alternate Interpretation of Stress Sensitivity in AASHTO T 350 (MSCR Test)," *96th Annual Meeting of the Transportation Research Board*, Washington, D.C.
7. **Gundla, A.**, P. Gudipudi, and B.S. Underwood (2016). "Evaluation of the Sensitivity of Asphalt Concrete Modulus to Binder Oxidation with a Multiple Length Scale Study," *95th Annual Meeting of the Transportation Research Board*, Washington, D.C.
8. **Gundla, A.** and B.S. Underwood (2016). "Using Repeated Stress Sweep to Investigate Non-linearity in Asphalt Binders and Mastics by Fourier Transform Analysis," *International Society for Asphalt Pavements Symposium and 53rd Petersen Asphalt Research Conference*, Jackson, Wyoming.
9. **Gundla, A.**, P. Gudipudi, J. Medina, R. Salim, W. Zeiada, and B.S. Underwood (2015). "Multiscale Evaluation of Aging in Asphalt Concretes Containing Hydrated Lime and Cement Additives," *94th Annual Meeting of the Transportation Research Board*, Washington, D.C.

Non-Refereed Conference Presentations

1. **Gundla, A.**, R. Salim, B.S. Underwood, and K.E. Kaloush (2020). " Evaluation of MSCR Testing for Adoption in ADOT Asphalt Binder Specifications" *15th Arizona Pavements and Materials Conference*, Tempe, AZ.
2. **Gundla, A.** and B.S. Underwood (2017). "Molecular Weight Distribution of Asphalt Binders and its Relationship to Relaxation Spectra," *6th International Transportation PhD Student Symposium*, Champaign, IL.
3. Underwood, B.S. and **A. Gundla** (2013). "Evaluation of In-situ RAP Binder Interaction in Asphalt Cement Composites," *4th International Conference on Asphalt Materials, ICAM*. Guangzhou, China, November 2013.

MENTORING

Students Mentored and Related Projects

1. **Esai Ponce**, Civil Engineering Senior, Honors Student, (Fall 2017-Spring 2018). "Effect of Polymer Modification and Aging Level on Pull-Off Tensile Strength of Arizona Asphalt Binders" *Barrett Undergraduate Honors Thesis*, Arizona State University, April 2018, Tempe, AZ.

2. **Gina Rivera**, Civil Engineering Junior, Fulton Undergraduate Research Initiative (FURI), (Spring 2017). “Effect of Conductive Fillers in Asphalt Binders.” Presented at *Fulton Undergraduate Research Symposium*, Arizona State University, April 2017, Tempe, AZ.
3. **Harseerat Jajj**, Grade 12, Science and Engineering Experience (SCENE) Program, ASU (Fall 2015-Spring 2016). “The Evaluation of Bio-Binder as Partial Replacement of Asphalt Binder.” Presented at *Arizona Science and Engineering Fair (AZEFA) 2016*, Phoenix, AZ.

SPONSORED RESEARCH PROJECTS

Sponsor	Title	Role	Period
Arizona Department of Transportation (ADOT)	Evaluation of MSCR testing for Adoption in ADOT Binder Specifications	Research Associate	2015-2018
National Cooperative Highway Research Program	Long-Term Aging of Asphalt Mixtures for Performance Testing and Prediction	Research Associate	2014-2016
Arizona Pavements and Materials Conference Committee	Investigation of Aging in Hydrated Lime and Portland Cement Modified Asphalt Concrete at Multiple Length Scales	Research Associate	2014
Arizona State University	Use of Micro-Mechanical Models to Study the Mastic Level Structure of Asphalt Concretes Containing Reclaimed Asphalt Pavement	Research Associate	2013-2014