

# Muhammad “Jamal” Khattak, PhD., PE.

## Endowed Professor of Civil Engineering

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**Dr. Khattak** is a Full Professor of Civil Engineering at the University of Louisiana at Lafayette (UL). He received his PhD degree from Michigan State University in December of 1999 with specialization in pavement design and materials. He has over 25 years of combined research, teaching and consulting experience in the areas of pavement management, pavement performance modeling, nondestructive testing, advance pavement design, numerical modeling, infrastructural and transportation materials, material characterization, and geotechnical engineering. During his tenure at UL, Dr. Khattak has established the Infrastructure and Materials Testing Laboratory (IML) and pavement research program using internally and externally funded grants. Dr. Khattak has directed various externally funded Research and Development studies (about \$3.0 million) as PI/CoPI through local, state and federal agencies. He has attended several workshops and training courses for materials and transportation infrastructure. He has delivered presentations in numerous conferences and department of transportation meetings and has published his findings in peer-reviewed journals, conference proceeding, agency's technical reports, and US Patents (over 90 publications). He is the Director for IML Lab at UL, affiliated with the Institute of Materials Research and Innovation (IMRi), and Center for Analysis of Spatial and Temporal Systems (CAST) at UL Lafayette. Dr. Khattak is an active member of ASCE and other professional societies. He is a recipient of McDermott and M. Eli Girard Endowed Professorships, Louisiana Engineering Society Faculty Professionalism Award, Outstanding Doctoral Student Mentor Award, Research Achievements and Innovator Awards, and holds the Professional Engineering (P.E) status in the state of Louisiana.

## EDUCATION

- 01/96-12/99 **Doctor of Philosophy (PhD)- Civil Engineering**, *Michigan State University, USA*  
Pavement materials: Engineering Characteristics of Polymer Modified Asphalt Mixtures
- 08/94-12/95 **Master of Science (MS)- Civil Engineering**, *Michigan State University, USA*  
Pavement Management: Pavement Evaluation Using Non Destructive Testing (NDT) Data; Falling Weight Deflectometer (FWD).
- 03/88-10/92 **Bachelors of Science (Honors)- Civil Engineering**, *NWFP UET, Peshawar, Pakistan*  
Broad curriculum in civil engineering with emphasis on pavement and geotechnical engineering, construction materials and structural engineering

## TEACHING EXPERIENCE

- 08/13-Present **Professor (Endowed)**, University of Louisiana at Lafayette, Louisiana
- 08/06- 07/13 **Associate Professor (Endowed)**, University of Louisiana at Lafayette, Louisiana
- 02/00- 07/06 **Assistant Professor (Endowed)**, University of Louisiana at Lafayette, Louisiana
- 05/95- 06/99 **Graduate Research/Teaching Assistant**, Michigan State University, East Lansing, Michigan

## COURSES TAUGHT

CIVE 655-Pavement Design and Management	CIVE 428-Reinforced Concrete Design
CIVE 657-Transportation Materials Engineering	CIVE 328-Geotechnical Engineering
CIVE 596- Foundation Analysis and Design	CIVE 225-Engineering Surveying
CIVE 450G-Highway Engineering	CIVE 219-Mechanics of Materials
CIVE 438G-Foundation Engineering	CIVE 211-Engineering Statics

## AWARDS AND HONORS

- Eminent Distinguished Professor Award Nominee- 2020
- Certificate of Achievement in Sponsored Research - Presented by UL President-2018
- Certificate of Achievement in Innovation- Presented by UL President-2018
- Certificate of Achievement in Innovation- Presented by UL President-2016
- Outstanding Doctoral Student Mentor Award- Presented by UL President 2014-2016
- Favorite Professor- Presented by ASCE Student Chapter- 2014-2015
- Best Paper Award- International Conference of Civil, offshore and Environmental Engineering, Kuala Lumpur, June 12-14, 2012.
- Graduate Faculty status 2000-2021
- Mentor- Ronald E. McNair Program, 2003-2005
- Endowed Professorship -McDermott International BORSF in Engineering, 2004-22
- Endowed Professorship -M. Eloi Girard/BORSF Professorship in Engineering-II, 2012-21
- ASCE-Past President- Acadiana Branch, 2008
- Professionalism Award- Louisiana Engineering Society (LES), 2007
- ASCE-President- Acadiana Branch, LA 2007
- ASCE-President Elect- Acadiana Branch, LA 2006
- ACSE- Secretary- Acadiana Branch, LA 2004
- ASCE-Obligation of an Engineer Certificate, 2005
- Appreciation from Graduating Senior Award- 2002
- Outstanding Graduate Student- Civil Engineering for 1998-99, Michigan State University (MSU)
- Awards of Higher Academic Achievement UG- Civil Engineering (4-yrs), UET Peshawar, Pakistan.

## RESEARCH EXPERIENCE

### Research and Development (R&D)

10/19-09/22	Xiao-Dong Zhou, Pesacreta, and <b>Khattak</b> , M.J., MRI: Acquisition of Focused Ion Beam-Scanning Electron Microscope for the Multidisciplinary Research and Education at the University of Louisiana at Lafayette, National Science Foundation (NSF), \$1,425,129 (Co-I)
03/18-09/19	<b>Khattak</b> , M.J., Soil-Recycled Aggregate-Geopolymer Road Base/Subbase Mixtures-Step Towards Sustainability-TanSet-University Transportation Center (UTC), \$89,148 (PI)
03/18-09/19	<b>Khattak</b> , M.J., Zhang, Q. Mitigating Pavement Reflective Cracking Using A Ductile Concrete Interlayer- TanSet-University Transportation Center (UTC), \$89,748 (PI)
07/16-06/19	<b>Khattak</b> , M.J. Pavement Service Life Extension Due to Asphalt Surface Treatment Interlayer-FHWA/LTRC, (\$215,804) (PI)
07/16-06/18	<b>Khattak</b> , M.J, and Khattab, A. Superpave Binder Testing System for the Enhancement of Infrastructure and Materials Testing Labs-LA-BORSF/ENH, \$62,357 (PI)
06/16-08/16	<b>Khattak</b> , M.J., Hayatdaoudi, A. Laboratory Testing and Evaluation of Week's Island Mine Salt

- Cores-Morton and Canadian Salt, Week's Island Mine, \$5,361 (PI)
- 01/15-01/18 **Khattak**, M.J. Utilization of RAP in Geopolymer Concrete, Department of Civil Engr, UL Lafayette (\$53,346- GA)
- 01/15-01/17 **Khattak**, M.J. Self-sensing High Performance Fiber reinforced Geopolymer Composites using CNF. Department of Civil Engr, UL Lafayette (\$35,564- GA)
- 06/14-05/15 **Khattak**, M.J. Enhancement of the Asphalt Mixture Mechanical Properties using Carbon Nanofiber modified Polyethylene. LA-EPSCoRE (SURE), \$4,500 (PI)
- 09/10-05/14 **Khattak**, M.J. Development of Cost-effective Pavement Treatment Selection and Treatment Performance Models. FHWA/LTRC (PI-\$287,107)-(R3803)
- 01/14-02/14 **Khattak**, M.J Travel Grant- Transportation Research Board annual meeting, January 2014. LTRC- (\$1,750)
- 07/13-06/14 Chirdon, W., and **Khattak**, M.J. Assessment of the Mechanical Properties of Structural Composites from Algae-Based Binders-TIRE/LTRC, \$29,868 (Co-PI)
- 03/12-08/13 **Khattak**, M.J. and Khattab, A. Performance Enhancement of Carbon Nanofibers (CNF) Reinforced Piezoelectric Polymers. NSF-LA-EPSCoR- (PI-\$10,000)
- 01/13-02/13 **Khattak**, M.J Travel Grant- Transportation Research Board annual meeting, January 2013. LTRC- (\$1,750)
- 07/10-06/11 Khattab, A, **Khattak**, MJ. Application of Nano-Technology to Develop Smart Hot Mix Asphalt Mixtures (HMA). TIRE/Louisiana Transportation Research Center (LTRC) (Co-PI-\$29,986)
- 06/09-05/10 Chirdon, W., and **Khattak**, M.J. Effect of thermal oscillation frequency on the effective thermal properties of concrete and asphalt. TIRE/Louisiana Transportation Research Center (LTRC) (Co-PI-\$29,973)-(R3721).
- 07/07-06/09 **Khattak**, M.J., and Shin, T. Development of 3-Dimensional Analytical Model for Performance Assessment of Highway Bridges under Extreme Loading and Environment Conditions. Informative Technology Initiative (ITI) (PI-\$120, 927)-(R3635).
- 10/06-03/09 **Khattak**, M.J. Development of Uniform Sections for Pavement Management System (PMS) Inventory and Applications: FHWA/LTRC (PI-\$173,175)- (R3599).
- 06/06-12/09 **Khattak**, M.J. Development and Application of Imaging and Micro Mechanical Modeling Techniques to Determine the Material Properties. Louisiana Board of Regents Support Funds (LA BORSF) (PI-\$130,084)-(R3595).
- 06/08-05/09 Borst, C., and **Khattak**, M.J. Laboratory Enhancement for Interactive Projection-based 3DVisualization. Louisiana Board of Regents. (BORSF) (Co-PI-\$76,169)- (R3723).
- 01/06-12/08 **Khattak**, M.J. Visco-elastic Behavior of Lime Modified Asphalt Matrix and Mixtures. University of Louisiana at Lafayette, (PI-\$29,500)-(UL Lafayette).
- 06/07-05/08 **Khattak**, M.J. Upgrade and Repair of Materials Testing (MTS) Laboratory-College of Engineering. Step Grant. University of Louisiana at Lafayette, (PI-\$77,900)-(G298R2).
- 01/02-09/05 **Khattak**, M.J. Nondestructive Testing (NDT): Comparison of In situ Strength and Laboratory Mechanistic Properties of Asphalt Mixtures (FWD, LFWD, Seismic Analyzer). Louisiana Transportation Research Center (LTRC) (PI-\$133,981)-(R3415).
- 06/02-06/03 **Khattak**, M.J. Preliminary Study for the Mechanistic Evaluation of Soil-Cement-Fiber Mixtures. University of Louisiana at Lafayette (PI-\$29,350)- (UL Lafayette).
- 06/01-12/02 **Khattak**, M.J. Enhancement of Transportation Materials Laboratory at UL Lafayette. Louisiana Board of Regents. (BORSF) (PI-\$67,200)-(R3327 and 2813).
- 05/02-04/03 **Khattak**, M.J. Evaluating the Performance of Highway Pavements. University of Louisiana at Lafayette, (PI-\$4,000)- (UL Lafayette).
- 05/01-04/02 **Khattak**, M.J. Evaluation and Development of Fatigue Life Criteria for Asphalt Concrete Mixtures. University of Louisiana at Lafayette (PI-\$4,000).
- 08/97-08/98 Baladi, G.Y. Engineering Characteristics of Michigan Asphalt Concrete Pavements. Pavement Research Center of Excellence (PRCE), Michigan State University. Michigan Department of

- Transportation (MDOT), \$350,000 (GRA).
- 08/95-08/97 Baladi. G.Y., Polymers in Bituminous Mixtures. Pavement Research Center of Excellence (PRCE), Michigan State University. Department of Transportation, \$1,000,000 (GRA).

#### **Pending R&D Grants**

- 07/20-06/21 **Khattak, M.J.**, High Performance Asphalt Composite for Mitigating Pavement Cracking  
Source of Support: BORSF/POC, \$40,000 (PI)
- 07/20-06/21 Xiao-Dong Zhou. Tom Pesacreta, **Khattak, M.J.**, et al. Comprehensive Enhancement and Integration of Materials Programs in Energy, Biology and Additive Manufacturing for the Interdisciplinary Research and Edu. at UL-Lafayette BORSF/ENH \$1,100,000 (Co-PI-Share 5%)

### **INDUSTRIAL EXPERIENCE**

- 01/94-08/94 **Assistant Design Engineer (Water Supply and Sanitation Section)**  
Public Health Engineering Department, Pakistan  
Design and checking design calculations of various water supply systems and structures (ground and overhead reservoir, small dams, water supply channels & pipelines).
- 08/92-12/93 **Assistant Design Engineer (Structural and Geotechnical Section)**  
Water and Power Development Authority and BAK Consulting Engineers, Pakistan  
Design and analysis of canal and highway structures (siphons, super passages, retaining structures, small span bridges & culverts). Design and analysis of foundations

### **U.S. PATENTS (PUBLISHED/PROVISIONAL)**

1. U.S. Provisional Patent Application filed 17220–112, entitled “Tire-Rubber and Fiber Reinforced High Performance Asphalt Composite (RuFiAC), 2019
2. U.S. Patent Pub No. US 2019/0031563 A1 entitled “Self-sensing High Performance Fiber Reinforced Geopolymer Composites,” Jan 31, 2019.
3. U.S. Patent Pub No. US2018/0244921 A1 entitled “Self-sensing Piezoresistive HMA,” Aug 30, 2018.
4. U.S. Patent Pub No. US2017/0088711 A1, entitled “Bone Glue Modified Asphalt,” Aug 7, 2018.
5. U.S. Patent Pub No. US2017/0121226 A1, entitled “Multi-functional Open Graded Friction Course for In Situ Treatment of Highway or Roadway Runoff,” May 4, 2017.

### **JOURNAL PUBLICATIONS (Peer-Reviewed)**

6. Nur, A., **Khattak, M.J.**, Bhuyan, R., and Gaspard, K. Cracking Models for HMA Overlay Treatment of Composite Pavements. *Int. Journal of Pavement Engineering*. 2020 (accepted with minor revisions).
7. Adhikari, B., **Khattak, M.J.**, and Adhikari, S. Mechanical and durability characteristics of flyash-based soil-geopolymer mixtures for pavement base and subbase layers. *International Journal of Pavement Engineering (IJPE)*. <https://doi.org/10.1080/10298436.2019.1668562>, 2019.
8. Salehi, S., **Khattak, M.J.**, Saleh, F., Igbojekwe, S. Investigation of mix design and properties of geopolymers for application as wellbore cement. *Journal of Petroleum Science and Engineering*, Volume 178, July 2019, Pages 133-139.
9. Adhikari, S., **Khattak, M.J.** and Adhikari, B. Mechanical characteristics of Soil-RAP-Geopolymer mixtures for road base and subbase layers. *International Journal of Pavement Engineering (IJPE)*. [doi.org/10.1080/10298436.2018.1492131](https://doi.org/10.1080/10298436.2018.1492131), 2018.
10. Salehi, S., **Khattak, M.J.**, Ali, N., Ezeakacha, C., and Saleh, F. Study and Use of Geopolymer Mixtures for Oil and Gas Well Cementing Applications. *J. of Energy Resources Tech.*, Vol 140, Issue 1, 2018.
11. Gang, D., **Khattak, M.**, Ahmed, I., and Rizvi, H. Highway Runoff In Situ Treatment: Copper and Zinc Removal through MOGFC. *J. Environ. Eng.*, Vol 143, Issue (3) 2017.
12. Salehi, S., **Khattak, M.J.** Akila H Bwala, and Karbalaeei, S.F. Characterization, morphology and shear bond

- strength analysis of geopolymers: Implications for oil and gas well cementing applications. *Journal of Natural Gas Science and Engineering*. Vol 38, pp. 323-332, 2017.
13. Salehi, S., **Khattak**, M.J., Rizvi, H.R., and Kiran Raj. Sensitivity analysis of fly ash Geopolymer cement slurries: Implications for oil and gas wells cementing applications. *Journal of Natural Gas Science and Engineering*. Vol 37, pp. 116-125, 2017.
  14. Hardy, D., Fadden, M., **Khattak**, M.J., and Khattab, A. Development and Characterization of Self-Sensing Carbon nanofiber-High Performance Fiber Reinforced Cement Composites (CNF-HPFRCC), *Journal of Materials and Structures* DOI 10.1617/s11527-016-0863-z, 2016.
  15. Rizvi, H., **Khattak**, M.J., Madani, M., and Khattab, A. Piezoresistive response of conductive Hot Mix Asphalt mixtures modified with carbon nanofibers. *J. of Construction & Build. Materials*, Vol. 106, pp. 618-631, 2016.
  16. Rizvi, H., **Khattak**, M.J., and Gallo, A. Rheological and mechanistic characteristics of Bone Glue modified asphalt binders. *Journal of Construction & Building Materials*, Vol. 88, pp. 64-73, July, 2015
  17. Rizvi, H., **Khattak**, M.J., and Gallo, A. Bone Glue Modified Asphalt: A Step Towards Energy Conservation and Environment Friendly Modified Asphalts. *Journal of Civil Engineering*, International Society of Research Network. Volume 2014 (2014), Article ID 807043, DOI:10.1155/2014/807043, pp-1-5, September, 2014.
  18. **Khattak**, M.J., Khattab, A., Rizvi, H, Das, S., and Bhuyan, M. Imaged-based Discrete Element Modeling of Hot Mix Asphalt Mixtures. *Journal of Mat. and Structures*. DOI: 10.1617/s11527-014-0328-1, May 9, 2014.
  19. Khattab, A., Zhang, P., Shou, W., and **Khattak**, M.J., Process Development and Characterization of Spraying Carbon Nanofibers over Fabrics for Reinforcing Polymer Composites. *Polymer Composites*, Vol. 35, Issue 8, pp 1629-1635, August 2014.
  20. **Khattak**, M.J., Nur, A., Bhuyan R., and Gaspard, K. International Roughness Index Models for HMA Overlay Treatment of Flexible and Composite Pavements. *J. of Pavement Engr.*, Vol. 15, Issue 4, pp 334-344, 2014.
  21. **Khattak**, M.J., and Khattab. Modeling Tensile Response of Fiber-Reinforced Polymer Composites Using Discret Element Method. *Journal of Polymer Composites*. Vol 34, Issue 6, pages 877–886, June 2013.
  22. **Khattak**, M.J., and Arashidi, M. Performance of Preventive Maintenance Treatments of Flexible Pavements. *Journal of Pavement Research and Technology*, Vol. 6, No. 3, p184-196, 2013.
  23. Nur, A., **Khattak**, M.J., and Bhuyan, R. Rutting model for HMA Overlay Treatment of Flexible and Composite Pavements. *Journal of Civil Engineering*, International Society of Research Network, Vol. 2013, Article ID 176029, DOI: 10.1155/2013/176029, pp. 1-7, 2013.
  24. **Khattak**, M.J., Khattab, A, Zhang, P., Rizvi, H., and Pesacreta, P. Microstructure and Fracture Morphology of Carbon Nano-fiber Modified Asphalt and Hot Mix Asphalt Mixtures. *Journal of Materials and Structures*. DOI: 10.1617/s11527-013-0035-3, pp. 1-13, 2013.
  25. **Khattak**, M J., and Peddapati, N. Flexible Pavement Performance in Relation to In-situ Mechanistic and Volumetric Properties Using LTPP Data, *Journal of Civil Engineering*, International Society of Research Network, Vol. 2013, Article ID 972020, DOI: 10.1155/2013/972020, pp.1-7, 2013.
  26. **Khattak**, M. J., Khattab, A., and Rizvi, H. R. Characterization of Carbon Nano-Fiber modified hot mix asphalt mixtures. *Journal of Construction & Building Materials*, Vol. 40, pp. 738–745, 2013
  27. **Khattak**, M. J., and Baladi G. Y. Analysis of Fatigue and Fracture of Hot Mix Asphalt Mixtures, *Journal of Civil Engineering*, International Society of Research Network, Volume 2013, Article ID 901652, DOI: 10.1155/2013/901652, pp.1-10, 2013.
  28. **Khattak**, M. J., Landry, C., Veazey, J., and Zhang, Z. Rigid and Composite Pavement Index-based Performance Models for Network Pavement Management System in the State of Louisiana. *Journal of Pavement Engineering*. Vol. 14, Issue 7, pp 612-628, 2013.
  29. **Khattak**, M. J., Khattab, A., Rizvi, H.R., and Zhang, P. The Impact of Carbon Nano-fiber Modification on Asphalt Binder Rheology. *Journal of Construction & Building Materials*, Vol. 30 pp. 257–264, 2012.
  30. **Khattak**, M. J., Mohammad, L., Yuan, F., and Abadie, C. Variability of in-situ HMA volumetric and mechanistic characteristics using non-destructive test: case study, *Journal of Pavement Engineering*, Vol. 13, Issue 2, pp. 110-125, 2012.

31. Khattab, A., **Khattak**, M. J., and Fadhil, I. Micro-Mechanical Discrete Element Modeling of Fiber Reinforced Polymer Composites. *J. Polymer Composites*. Vol. 32, Issue 10, pp. 1532-40, 2011.
32. **Khattak**, M. J., and Roussel, C. Micromechanical Modeling of Hot-Mix Asphalt Mixtures by Imaging and Discrete Element Methods. *Journal of the Transportation Research Board*, Transportation Research Board of the National Academies, Vol. 2127, pp 98-106, 2009.
33. **Khattak**, M. J., Kyatham, V. Visco-elastic modeling of lime-modified asphalt matrix and hot mix asphalt under moisture damage. *Journal of Transportation Research Board*, No. 2057. National Research Council, Washington D.C., January 2008.
34. **Khattak**, M. J., Baladi, G.Y., Zhang, Z., and Ismail, S. A Review of the Pavement Management of the State of Louisiana, Phase-I. *Journal of Transportation Research Board*, No. 2084. National Research Council, Washington D.C., January 2008.
35. **Khattak**, M. J., and Baladi G. Y. Low Temperature Binder Aggregate Adhesion and Mechanistic Characteristics of Modified Asphalt Mixture. *Journal of Material Engineering*, American Society of Civil Engineering (ASCE), Vol. 19, No. 5, 2007.
36. Mohammad, L., Saadeh, S., Chenggang, Z., Cooper, S., Abadie, C., and **Khattak**, M.J. Comparative Study of the Mechanical Properties of HMA Mixture: "Field versus Laboratory." *Journal of Association of Asphalt Pavement Technologist (AAPPT)*, Vol. 76, pp 887-918, 2007.
37. **Khattak**, M. J., and Arashidi, M. Durability and Mechanistic Characteristics of Fiber Reinforced Soil-Cement Mixtures. *Journal of Pavement Engineering*, Vol. 7, No. 1, March, 2006.
38. Mohammad, L, Zhong Wu, Chenggang Zhang, Mohammad J. **Khattak** and Chris Abadie, Variability of Air Voids and Mechanistic Properties of Plant Produced Asphalt Mixtures, *Journal of Transportation Research Board*, TRB, 1891, 2004.
39. **Khattak**, M. J., and Baladi G. Y. Fatigue and Permanent Deformation Models for Polymer-Modified Asphalt Mixtures, *Transportation Research Record*, TRB, 1767, 2001.
40. **Khattak**, M. J., and Baladi G. Y. Engineering Properties of Polymer-Modified Asphalt Mixtures. *Transportation Research Record*, TRB, 1638, 1998.
41. Bhuyan, R **Khattak**, **M.J.** Performance Evaluation of Reflective Crack Mitigation Techniques For Soil-Cement Bases. *Journal of Transportation Research Board*. National Research Council, Washington D.C., January 2020 (Under Review).
42. Rahman, S., **Khattak**, **M.J.**, Adhikari, S., Adhikari, B. Discrete Element Modeling of Bonded Soil Mixtures Under Uniaxial Compression and Indirect Tension Test. *Computers and Geotechnics*. COGE-01250, 2019 (Under Review).
43. Das, A, Bhuyan, M., Khattak, M.J., and Zhang, Q. Mitigating Reflective Cracking In Composite Pavements Through the Use of a Ductile Concrete Interlayer. *Journal of Pavement Engineering*, 2020 (Under Review).
44. Syfur Rahman, and **Khattak**, **M.J.** Mechanical and Durability Characteristics of Roller Compacted Geopolymer Concrete Using Recycled Concrete Aggregates. *J. of Pavement Engr.*, 2020 (Ready to Submit)
45. **Khattak**, M.J, Baladi, G.Y., Nur, A. M, Bhuyan, R., and Gaspard, K Performance Evaluation of Chip Seal Treatment on Flexible Pavements. *Int. Journal of Pavement Engineering*. 2020. (Ready to Submit)
46. Rizvi, H., **Khattak**, M.J., Khattab, A., Madani, M., and Seyedjalalai, M. Performance Enhancement of Carbon Nanofibers (CNF) Reinforced Piezoelectric Polymers. *Journal of Materials*, 2020 (Ready to Submit)
47. Haodi Shang, **Khattak**. MJ., Experimental Investigation and Simulation of High Performance Surface Coating in Steel Bolted Slip Critical Connection. *Journal of Materials and Structures*, 2020 (In preparation)
48. Simon, J., and **Khattak**, M.J. Characterization of Self-Sensing Carbon nanofiber-High Performance Fiber Reinforced Geopolymer Composites (CNF-HPFR-GPC), *Journal of Materials and Structures* 2019-20. (In preparation)
49. Adhikari, B, Adhikari, S., and **Khattak**, M.J. Microstructure and Morphology of flyash-based soil-geopolymer mixtures. *Journal of Construction & Building Materials*, 2019-20. (In preparation)
50. Paul, S. and **Khattak**, M.J, *Finite Element Modeling of Pavement Repair System Utilizing a Ductile Concrete Interlayer*. *Journal of Materials and Structures*, Jan, 2020(In preparation)

## CONFERENCE PUBLICATIONS (Peer-Reviewed)

51. Odion, D, and **Khattak, M.J.** Stabilizing Sandy Silt Soil with Fly-Ash Based RCA Geopolymer in Pavement Base Layers. MATEC Web of Conferences, Enhancing durability & service life of transportation infrastructure: Materials, methods, & technology. Tran SET at University of New Mexico, Albuquerque, NM, 2-3, April 2020.
52. Mohammad Bhuyan and **Khattak, M.J.** Reflective Crack Mitigation Using AST Interlayer Over Soil-Cement Base For Flexible Pavements. International Conference on Civil Infrastructure and Construction (CIC), Qatar University, Doha, Qatar, Feb 2-5, 2020.
53. Syfur Rahman, and **Khattak, M.J.** Feasibility of Roller Compacted Geopolymer Concrete Containing Recycled Aggregate. MATEC Web of Conferences, Enhancing durability & service life of transportation infrastructure: Materials, methods, & technology. Tran SET at University of New Mexico, Albuquerque, NM, 2-3, April 2020.
54. Syfur Rahman, and **Khattak, M.J.** Mechanical and Durability Characteristics of Roller Compacted Geopolymer Concrete Using Reclaimed Asphalt Pavement. International Conference on Civil Infrastructure and Construction (CIC), Qatar University, Doha, Qatar, Feb 2-5, 2020.
55. Mohammad Bhuyan, M. **Khattak, M.J.**, and Zhang, Q. Experimental Evaluation of Engineered Cementations Composites as Reflective Crack Control Interlayer for Composite Pavements. MATEC Web of Conferences, Tran SET at University of Texas, San Antonio, April 2019.
56. **Khattak, M.J.**, Heim, Nathan, Odoin, D., and Rahman, S. Soil-Geopolymer Mixtures Using Recycled Aggregates for Pavement for Base and Subbase Layers. TRB Annual conference and meeting, Jan 2019.
57. Daniel, O., **Khattak, M.J.**, Abader, M., and Heim, N. Soil-Geopolymer Mixtures Using Recycled Concrete Aggregates for Base and Subbase Layers. MATEC, Tran SET at University of Texas, San Antonio, April 2019.
58. Salehi, S., Ezeakacha, Chindeum P., and **Khattak, M.J.**, Geopolymer Cements: How Can You Plug and Abandon a Well with New Class of Cheap Efficient Sealing Materials. SPE Oklahoma City Oil and Gas Symposium, DOI: 10.2118/185106-MS, March 27, 2017.
59. Salehi, S., **Khattak, M.J.**, Ali, N., and Rizvi, H.R. Lab Investigation of High Performance Geopolymer Based Slurries. American Association of Drilling Engr. National Conference, AADE-16-FTCE-88, Houston, 2016.
60. Salehi, S., **Khattak, M.J.**, Ali, N., and Rizvi, H.R. Geopolymer Composites as Efficient and Economical Plugging Materials in Peanuts Price Oil Market. SPE Annual Technical Conference and Exhibition. DOI: 10.2118/181426-MS, January 2016.
61. Salehi, S., **Khattak, M.J.**, Ali, N., and Rizvi, H.R. Development of Geopolymer-based Cement Slurries with Enhanced Thickening Time, Compressive and Shear Bond Strength and Durability. *IADC/SPE Drilling Conference and Exhibition*, IADC/SPE-178793-MS. March 2016.
62. Ahmed, I.U, Gang, D.D, **Khattak, M.J.** Rizvi, H.R. Development and Evaluation of Multi-Functional Open Graded Friction Course (MOGFC) for Heavy Metal Removal from Highway Runoff as an in Situ Treatment. *Proceedings of the 88th Annual Water Environment Federation Technical Exhibition and Conference*, pp 55-75, Chicago, IL, September 26–30, 2015.
63. Igbojekwe, S., Salehi, S., and **Khattak, M.J.** Development of New Geopolymer Based Cement: Laboratory Investigation. American Association of drilling engineers (AADE) National Technical Conference, AADE-15-NTCE-38, San Antonio, Texas, April 8-9, 2015.
64. A Hayatdavoudi, R Nizamutdinov, J Kravets, M Fadden, MJ **Khattak**, D Hardy. Increasing the Pierre Shale Reservoir Volume Using Heat-Part I. 49th US Rock Mechanics/Geomechanics Symposium, American Rock Mechanics Association, 11/13/2015
65. **Khattak, M.J.**, Baladi, G.Y., Nur, A. M, Bhuyan, R., and Gaspard, K. Performance Evaluation of Chip Seal Treatment on Flexible Pavements. Transportation Research Board. January 2014.
66. Khattab, A., Zhang, P., **Khattak, M. J.** Characterization of High-temperature Polymer Nanocomposites Using Indirect Dispersion. Proceedings of SAMPE Technical Conference, Long Beach, CA, 2013.
67. Nur, A. M, **Khattak, M.J.**, Bhuyan, R., and Gaspard, K. International Roughness Index Models for HMA

- Overlay Treatment of Flexible and Composite Pavements. Transportation Research Board. January 2013 (CD).
68. **Khattak**, M. J., and Khattab, A. Micro-Mechanical Modeling of PCC mixtures. Proceedings of International Conference of Civil, offshore and Env. Engineering. Kuala Lumpur, June 12-14, 2012. (Best Paper Award)
  69. **Khattak**, M. J., Khattab, A., Rizvi, H. R., and Pesacreta, T.C. Effect of Carbon Nanofiber Modification on the Mechanistic Properties of HMA Mixtures. Proceedings of International Conference on Civil, Offshore and Environmental Engineering (ICCOEE), Kualalumpur, Malaysia, June 12-14, 2012
  70. Khattab, A., Zhang, P., **Khattak**, M. J. Process Development and Characterization of Carbon Nanofibers Sprayed Carbon Fiber reinforced polymer Composites. *Proceedings of SAMPE Technical Conference*, Long Beach, CA, May 23-26, 2011.
  71. **Khattak**, M. J., Khattab, A., and Rizvi, H.R. Mechanistic Characteristics of Asphalt Binder and Asphalt Matrix Modified with Nano-fibers. *Proceedings of the Geo-Frontiers Conference, Geotechnical Special Publication No. 211 Advances in Geotechnical Engineering*, pp 4812-4822, March, 13 2011, Dallas, Texas.
  72. Wang, L., Rizvi, H. R., **Khattak**, M.J., Gang, D. Development and Evaluation of Functional Open Graded Friction Courses (FOGFC) Mixtures for In Situ Highway Runoff Treatment. *Proceedings of the Geo-Frontiers Conference, Geotechnical Special Publication No. 211 Advances in Geotechnical Engineering*, pp 4573-4583, March 13–16, 2011, Dallas, Texas.
  73. **Khattak**, M. J. and Hayatdaoudi, A. On the Relationship of Atterberg Limits and New Hydration Index Based on Gibb’s Free Energy Using X-Ray Diffractometry Analysis. *Proceedings of 6<sup>th</sup> International Congress on Environmental Geotechnics*, November 8 - 12, 2010, New Delhi, India.
  74. **Khattak**, M. J., Veazey J., and Zhang, Z. Development of Flexible Pavement Index Based Performance Models for Network Pavement Management System in the State of Louisiana. *Proceedings of Transportation Research Board*, 2010 (CD-ROM)
  75. **Khattak**, M. J. and Chad M. Roussel. Effects of Aggregate Gradation and Asphalt Binder on the Visco-elastic Behavior of Asphalt Matrix. *Proceedings of Pavement Mechanics and Paving Materials, ASCE Geotechnical Special Publication, GSP 184*, pp 82-89, 2009.
  76. Baladi, G.Y., M.J., **Khattak**, T. Dawson, and S.W. Haider. Distress Points for Four Types of Distresses in Rigid Pavements. *Proceedings of 6th International Conference on Maintenance and Rehabilitation of Pavements and Technological Control*, Torino, Italy, July 8, 2009
  77. **Khattak**, M.J., and Vikram Kyatham. Mechanistic Characteristics of Moisture Damaged Asphalt Matrix and Hot Mix Asphalt Mixtures. *Proceedings of Airfield and Highway Pavements Conference*, Bellevue, Washington, October 15-18, 2008.
  78. **Khattak**, M.J., Zhanping You, and Vikram Kyatham. On the Mechanical Modeling of Asphalt Matrix and Hot Mix Asphalt Mixtures. *Proceedings of Airfield and Highway Pavements Conference*, Bellevue, Washington, October 15-18, 2008.
  79. Baladi G. Y. **Khattak**, M. J., and Collins P. Sessions. Deduct Points for Flexible Pavements. *Proceedings of 6th Int. Conference on Road and Airfield Pavement Technology (ICPT)*, July 20-23, 2008, Sapporo, Japan.
  80. **Khattak**, M. J., and Feng Y. In-Situ Layer Moduli of Pavements Using Nondestructive Testing: A Case Study. *Proceedings of the 10th International Conference on Asphalt Pavements (ISAP)*, Quebec, Canada, August 17, 2006. (CD-2007)
  81. **Khattak**, M. J., and Arashidi, M. Mechanistic Characteristics of Processed Cellulose-Fiber Reinforced Soil-Cement Mixture. *Proceedings of the Geo-Institute Conference on Geotechnical Engineering, Advances in Pavement Engineering*, Geo-Frontiers, Geotechnical Special Publication (GSP) No. 130, January, 2005.
  82. **Khattak**, M. J., and Arashidi, M. Evaluation of Maintenance Treatment of Flexible Pavements Using LTPP data. *Proceedings of Transportation Research Board*, 2005 (CD-ROM)
  83. **Khattak**, M. J., and Baladi G. Y. Binder Rheology, Morphology and Adhesion Effects on Asphalt Mixture. *Proceedings of the Geo-Institute Conference on Geotechnical Engineering for Transportation Projects*, Geo-Trans, UCLA Campus, Los Angeles, CA USA, July, 2004.



## TECHNICAL REPORTS PUBLICATIONS

84. **Khattak**, M.J., and Buyan, R. Evaluation of Pavement Service Life Extension Due to Asphalt Surface Treatment Interlayer over Soil-Cement Base. Final Report No. FHWA/LA. LTRC Project 16-5P, June, 2019
85. Qian Z., **Khattak**, M.J., and Das, A. *Mitigating Reflective Cracking Through the Use of a Ductile Concrete Interlayer*. Transportation Consortium of South-Central States, Final Report No: 18PLSU13. University Transportation Centers (UTC) Program, Department of Transportation, Washington, DC., Sept 2019
86. **Khattak**, M.J., and Odion, D. *Soil-Recycled Aggregate-Geopolymer Road Base/Subbase Mixtures: Steps Towards Sustainability*. Transportation Consortium of South-Central States, Final Report No: 18GTLSU10. University Transportation Centers (UTC) Program, Department of Transportation, Washington, DC., Oct 2019.
87. **Khattak**, M.J., and Baladi, Gilbert Y. *Development of Cost Effective Treatment Performance and Treatment Selection models*, Final Report No. FHWA/LA. 13/518, Project 10-4P, Sept, 2015.
88. Khattab, A, and **Khattak**, M.J. *Application of NanoTechnology to Develop Smart Hot Mix Asphalt (HMA) Mixtures*, LTRC Technical Report, Project 10-1TIRE, June, 2011.
89. **Khattak**, M.J., Baladi, G.Y., and Sun, X. *Development of Index Based Pavement Performance Models for Pavement Management System (PMS) of LADOTD*, Final Report No FHWA/LA.08/460 March, 2009.
90. **Khattak**, M.J., Baladi, G.Y., Sun, X, Veazey, J., and Landry, C. *Development of Uniform Sections for PMS Inventory and Application*, LTRC Technical Report No: 430, December, 2007.
91. **Khattak**, M.J. *Development and Application of Imaging and Micro Mechanical Modeling Techniques to Determine the Material Properties*. Final Report-Louisiana Board of Regents Support Funds, December 2009.
92. **Khattak**, M. J. *Support study for the comparison of the in situ strength and laboratory mechanistic properties of asphalt concrete mixtures*, LTRC Technical Report No: 413, Sep. 2005.
93. **Khattak**, M. J. *Enhancement of Transportation Materials Laboratory at UL Lafayette*. Final Report- Louisiana Board of Regents, June 2002.
94. Hawley, M., Baladi, G., Drazal, L., **Khattak**, M. J. *Polymers in Bituminous Mixtures*. Pavement Research Center of Excellence (PRCE), Michigan State University. Final Report- Michigan Department of Transportation, June 1997.

## PHD/MASTER'S DISSERTATION / THESIS

95. **Khattak**, M.J. Engineering Characteristics of Polymer Modified Asphalt Mixtures. Doctor of Philosophy (PhD) dissertation Michigan State University, December 1999.
96. **Rehman**, Syfur. Durability and Mechanical Characteristics of Flyash based Geopolymer RAP concrete. Doctor of Philosophy (PhD) thesis, University of Louisiana at Lafayette, Spring 2020. (Expected)
97. **Bhuyan**, Mohammad Reza. Pavement Service Life Extension Due to Asphalt Surface Treatment Interlayer. Doctor of Philosophy (PhD) thesis, University of Louisiana at Lafayette, Spring 2020. (Expected)
98. **Das**, Adway. *Mitigating Reflective Cracking In Composite Pavements Through the Use of a Ductile Concrete Interlayer*. Master of Science (MS) thesis, Fall 2019
99. **Paul**, Sharat. *Finite Element Modeling of Pavement Repair System Utilizing a Ductile Concrete Interlayer*. Master of Science (MS) thesis, Fall 2019
100. **Odion**, Daniel. Durability and Shrinkage Characteristics of Flyash-Based Soil-Geopolymer Mixtures, Master of Science (MS) thesis, Spring 2019
101. **Adhikari**, Bikash. *Mechanistic Evaluation of Flyash-Based Soil-Geopolymer Stabilized Road Bases*. Master of Science (MS) thesis, Sum 2017.
102. **Adhikari**, Sambodh. *Physical and Mechanical Characteristics of Soil-RAP-Geopolymer Stabilized Road Bases*. Master of Science (MS) thesis, Sum 2017.

103. **Shang**, Haodi. *Experimental Investigation and Simulation of High Performance Surface Coating in Steel Bolted Slip Critical Connection*, Summer 2017.
104. **Simon**, Jordan. *Self-sensing High Performance Fiber Reinforced Geopolymer Composites using CNF*. Master of Science (MS) thesis, Spring 2017.
105. **Rizvi**, Hashim Reza. *Smart Hot mix Asphalts- Piezoresistive Characteristics of Hot Mix Asphalt Mixtures*. Doctor of Philosophy (**PhD**) dissertation, University of Louisiana at Lafayette, Spring 2016.
106. **Ali**, Nasir. *Competency of Class F Based Geopolymer Cement in Oil Well Cementing: The Mechanical, Physical and Rheological Characteristics of Class F Fly Ash for Deep Wells*. Master of Science (MS) thesis, Spring 2016 (Co-Advisor)
107. **Ahmed**, I. *Highway Runoff in Situ Treatment: Development and Evaluation of Multi-Functional Open Graded Friction Course for Dissolved Heavy Metal Removal*, Master of Science thesis, Spring 2015 (Co-Advisor).
108. **Bwala**, Akelahyel. *Experiemental investigation of shear bond strength and microstructure of fly ash based Geopolymer cement for oil and gas industry*. Master of Science thesis, Fall 2015 (Co-Advisor).
109. **Igbojekwe**, Stanely. *Development of Environmental Friendly Cement For Oil and gas Well Application*, Master of Science thesis, Summer 2014 (Co-Advisor)
110. **Bhuyan**, Mohammad Reza. *Development of Treatment Performance Models for Flexible Pavements*. Master of Science thesis, University of Louisiana at Lafayette, Summer 2013.
111. **Abdullah** Nur, Mohammad. *Development of Treatment Selection and Performance Models for Comp. and Rigid Pavements*. Master of Science thesis, University of Louisiana at Lafayette, Summer 2013.
112. **Rizvi**, Hashim Reza. *Impact of Carbon Nanofibers on the Mechanistic and Piezoresistive Characteristics of Asphalt Binders and Hot Mix Asphalt Mixtures*. MS thesis, University of Louisiana at Lafayette, Sum 2012.
113. **Zhang**, Pengfei. *Fabrication and characterization of fiber reinforced polymer composite laminates toughened with carbon nanofibers by using spraying technique in the process of VARTM*. Master of Science thesis, University of Louisiana at Lafayette, Spring 2011.
114. **Briganti**, Edward. *Development of 3D Analytical Model for Performance Assessment of Highway Bridges Using Scanned Data*. Master of Science thesis, University of Louisiana at Lafayette, Decembers 2009.
115. **Landry**, Corey. *Survey of LADOTD's Implementation of the Pavement Management System and Development of Index Based Rigid and Composite Pavement Performance Models*. Master of Science thesis, University of Louisiana at Lafayette, Decembers 2009.
116. **Veazey**, Jared, A. *Review of the Pavement Management System of LADOTD and Development of Flexible Pavement Performance Models*. Master of Science thesis, University of Louisiana at Lafayette, May 2008.
117. **Roussel**, Chad. *Application of Imaging and Micro Mechanical Discrete Element Techniques for Hot Mix Asphalt Modulus Predictions*. Master of Science thesis, University of Louisiana, July 2008.
118. **Kyatham**, Vikram. *Visco-elastic Characteristics and the Effect of Hydrated Lime on Moisture Damage Susceptibility of Asphalt Matrix and Hot Mix Asphalt Mixtures*. Master of Science thesis, University of Louisiana at Lafayette, Decembers 2007.
119. **Peddapati**, Nagaraju. *Pavement Performance And It's Relationship with in-situ Volumetric, and Mechanistic Properties*. Master of Science, University of Louisiana at Lafayette, May 2005.
120. **Yuan**, Feng. *In-Situ Mechanistic and Volumetric Properties of Pavements Using Nondestructive Testing*. Master of Science, University of Louisiana at Lafayette, December 2005.
121. **Alrashidi**, Mohammad. *Mechanical Characteristics of Soil-Cement-Fiber Mixtures*. Master of Science, University of Louisiana at Lafayette, May 2004.
122. **Vijay**, Kumar. *Mechanistic Characteristics of Superpave HMA Mixtures*. Project Research, University of Louisiana at Lafayette, December 2002.

## INVITED/CONFERENCE PRESENTATIONS

1. Bhuyan, R., and **Khattak, M.J.** Performance Evaluation of Reflective Crack Mitigation Techniques For Soil-Cement Bases. To be presented in the 99<sup>th</sup> Transportation Research Board annual meeting, January 2020.
2. Das, A, Bhuyan, M., **Khattak, M.J.**, and Zhang, Q. Mitigating Reflective Cracking In Composite Pavements Through the Use of a Ductile Concrete Interlayer. To be presented in the 99<sup>th</sup> Transportation Research Board annual meeting, January 2020.
3. Odion, D., and **Khattak, M.J.** Recycled Concrete Aggregates (RCA) And Fly Ash Based Geopolymer Mixtures As Sustainable Soil Stabilized Road Base and Subbase Material. To be presented in the 99<sup>th</sup> Transportation Research Board annual meeting, January 2020.
4. Odion, D, and **Khattak, M.J.** Stabilizing Sandy Silt Soil with Fly-Ash Based RCA Geopolymer in Pavement Base Layers. MATEC Web of Conferences, Enhancing durability & service life of transportation infrastructure: Materials, methods, & technology. Tran SET at University of New Mexico, Albuquerque, NM, 2-3, April 2020.
5. Bhuyan, M., and **Khattak, M.J.** Reflective Crack Mitigation Using AST Interlayer Over Soil-Cement Base For Flexible Pavements. International Conference on Civil Infrastructure and Construction (CIC), Qatar University, Doha, Qatar, Feb 2-5, 2020.
6. Rahman, S, and **Khattak, M.J.** Feasibility of Roller Compacted Geopolymer Concrete Containing Recycled Aggregate. MATEC Web of Conferences, Enhancing durability & service life of transportation infrastructure: Materials, methods, & technology. Tran SET at University of New Mexico, Albuquerque, NM, 2-3, April 2020.
7. Das, A., Zhang, Q., and **Khattak, M.J.** Mitigating Reflective Cracking In Composite Pavements Through the Use of a Ductile Concrete Interlayer. To be presented in the 99<sup>th</sup> Transportation Research Board annual meeting, January 2020.
8. Rahman, S., and **Khattak, M.J.** Mechanical and Durability Characteristics of Roller Compacted Geopolymer Concrete Using Reclaimed Asphalt Pavement. International Conference on Civil Infrastructure and Construction (CIC), Qatar University, Doha, Qatar, Feb 2-5, 2020.
9. Bhuyan, R., and **Khattak, M.J.** Pavement Service Life Extension Due to Asphalt Surface Treatment (AST) Interlayer. Presented in SESPA Conference, October 9-11, 2019.
10. Daniel, O., **Khattak, M.J.**, Abader, M., and Heim, N. Soil-Geopolymer Mixtures Using Recycled Concrete Aggregates for Base and Subbase Layers. MATEC, Tran SET at University of Texas, San Antonio, April 2019.
11. Bhuyan, M., **Khattak, M.J.**, and Zhang, Q. Experimental Evaluation of Engineered Cementitious Composites as Reflective Crack Control Interlayer for Composite Pavements. MATEC Web of Conferences, Tran SET at University of Texas, San Antonio, April 2019.
12. **Khattak, M.J.**, Heim, Nathan., Odoin, D., and Rhman, S. Soil-Geopolymer Mixtures Using Recycled Aggregates for Pavement for Base and Subbase Layers. TRB Annual conference and meeting, Jan 2019.
13. **Khattak, M.J.**, Baladi, G.Y., Nur, A. M, Bhuyan, R., and Gaspard, K Performance Evaluation of Chip Seal Treatment on Flexible Pavements. Transportation Research Board. January 2014
14. **Khattak, M.J.** Advanced Materials and Manufacturing- LA EPSCoR- A Statewide Industry-Academia Workshop, University of New Orleans, November 7, 2014
15. **Khattak, M.J.**, Nur, A., Bhuyan, R., and Gaspard, K. International Roughness Index Models for HMA Overlay Treatment of Flexible and Composite Pavements. Presented in the Transportation Research Board annual meeting, January 2013.
16. **Khattak, M.J.**, Nur, A., Bhuyan, R., and Gaspard, K. Readability Models for HMA Overlay Treatment of Flexible and Composite Pavements. Presented in the Louisianan Transportation Research Center (LTRC) Conference, Baton Rouge, February 2013.
17. **Khattak, M. J.**, and Khattab, A. Micro-Mechanical Modeling of PCC mixtures. Presented in the International Conference of Civil, offshore and Env'n. Engineering. Kuala Lumpur, June 12-14, 2012. **(Best Paper Award)**

18. **Khattak**, M. J., Khattab, A., Rizvi, H. R., and Pesacreta, T.C. Effect of Carbon Nanofiber Modification on the Mechanistic Properties of HMA Mixtures. Proceedings of International Conference on Civil, Offshore and Environmental Engineering (ICCOEE), Kuala Lumpur, Malaysia, June 12-14, 2012
19. **Khattak**, M. J., Khattab, A., and Rizvi, H.R. Mechanistic Characteristics of Asphalt Binder and Asphalt Matrix Modified with Nano-fibers. Presented in the Geo-Frontiers Conference- March, 13 2011, Dallas, Tx.
20. Wang, L., Rizvi, H. R., **Khattak**, M.J., Gang, D. Development and Evaluation of Functional Open Graded Friction Courses (FOGFC) Mixtures for In Situ Highway Runoff Treatment. Proceedings of the Geo-Frontiers Conference, Geotechnical Special Publication No. 211 Advances in Geotechnical Engineering, pp 4573-4583, March 13–16, 2011, Dallas, Texas.
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22. Baladi, G.Y., M.J., **Khattak**, T. Dawson, and S.W. Haider. Distress Points for Four Types of Distresses in Rigid Pavements. Presented in the 6th International Conference on Maintenance and Rehabilitation of Pavements and Technological Control, Torino, Italy, July 8, 2009
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24. **Khattak**, M.J., Zhanping You, and Vikram Kyatham. On the Mechanical Modeling of Asphalt Matrix and Hot Mix Asphalt Mixtures. Presented in the Airfield and Highway Pavements Conference, Bellevue, Washington, October 15-18, 2008.
25. Baladi G. Y. **Khattak**, M. J., and Collins P. Sessions. Deduct Points for Flexible Pavements. Presented in the 6th International Conference on Road and Airfield Pavement Technology (ICPT), July 20-23, 2008, Sapporo, Japan.
26. **Khattak**, M.J., Veazey J., and Zhang, Z. Flexible Pavement models for LADOTD. Presented in the LTRC TRB presentation Series, Baton Rouge, 2010
27. **Khattak**, M.J. Flexible Pavement Index Based Performance Models for Network Pavement Management System in the State of Louisiana. Presented in the South pavement Preservation conference, New Orleans, 2007
28. **Khattak**, M.J., Veazey J., and Zhang, Z. A review of Pavement Management System in the State of Louisiana. Presented in the LTRC Conference, 2007, Baton Rouge South pavement Preservation conference, New Orleans
29. **Khattak**, M. J., and Feng Y In-Situ Layer Moduli of Pavements Using Nondestructive Testing: A Case Study. Presented in the 10th International Conference on Asphalt Pavements (ISAP), Quebec, Canada, August 17, 2006.
30. **Khattak**, M. J., and Arashidi, M. Mechanistic Characteristics of Processed Cellulose-Fiber Reinforced Soil-Cement Mixture. Presented in the Geo-Institute Conference on Geotechnical Engineering, Advances in Pavement Engineering, Geo-Frontiers, Geotech. Special Pub.(GSP) No. 130, Jan, 2005.
31. **Khattak**, M. J., and Arashidi, M. Evaluation of Maintenance Treatment of Flexible Pavements Using LTPP data. Presented in the Transportation Research Board annual meeting, 2005
32. **Khattak**, M. J., and Baladi G. Y. Binder Rheology, Morphology and Adhesion Effects on Asphalt Mixture. Presented in the Geo-Institute Conference on Geotechnical Engineering for Transportation Projects, Geo-Trans, UCLA Campus, Los Angeles, CA USA., July, 2004.
33. **Khattak**, M. J., and Baladi G. Y. Fatigue and Permanent Deformation Models for Polymer-Modified Asphalt Mixtures. Presented in the Transportation Research Board annual meeting, 2001.
34. **Khattak**, M. J., and Baladi G. Y. Analysis of the Fatigue Life of Asphalt Concrete Samples. “Asphalt, Number One Thermoplastics Polymer” Presented in the Symposium during the 217<sup>th</sup> American Chemical Society Meeting, March 21, 1999.
35. **Khattak**, M. J., and Baladi G. Y. Engineering Properties of Polymer-Modified Asphalt Mixtures. Presented in the Transportation Research Board annual meeting, TRB, 1998.

## GRADUATE COMMITTEES (PHD/MS)

No.	Name	Major Area of Thesis	Graduation Year
1.	Paul Kornyoh	Transportation-CIVE (MS)	Fall 2019
2.	Yaa Osafa	Transportation-CIVE (MS)	Fall 2019
3.	Ashifur Rahman	Transportation-CIVE (PhD)	Spring 2020
4.	Haitem Saad	Hydrology-CIVE (PhD)	Spring 2020
5.	Fatick Nath	Petroleum Engineering (PhD)	Fall 2019
6.	Zakiuddin Ahmad	Environmental-CIVE (PhD)	Spring 2019
7.	Hisham Eldardi	Hydrology-CIVE (PhD)	Spring 2018
8.	Mathew Deshotel	Hydraulics-CIVE	Spring 2017
9.	Sabina Paudel	Transportation-CIVE	Spring 2017
10.	Bao Bao Tang	Composite Materials- ITEC	Spring 2016
11.	Grant Besse	Environmental -CIVE	Spring 2016
12.	Ashifur Rahman	Transportation-CIVE	Spring 2016
13.	Bing Chao	Environmental -CIVE	Spring 2016
14.	Dylan Broussard	Structure-CIVE	Fall 2015
15.	Jacob Benton	Structure-CIVE	Fall 2015
16.	Nick Broussard	Transportation-CIVE	Fall 2015
20.	Dylan Hardy	Structure-CIVE	Sum 2015
21.	Subashih Dass	Transportation-CIVE (PhD)	Sum 2015
22.	Gawesh, Ahmed	Hydrology-CIVE (PhD)	Sum 2014
23.	LeBouf, Chuck	Transportation-CIVE	Fall 2014
24.	Rasel, Sk	Transportation-CIVE	Sum 2013
25.	Sadid, Qazi	Hydraulics-CIVE	Sum 2013
26.	Bhuyan Abul Ehsan	Hydraulics-CIVE	Sum 2013
27.	Jing Nie	Environmental -CIVE	Fall 2013
28.	Ashoke Kumar	Hydraulics-CIVE	Fall 2013
29.	Subasish Das	Transportation-CIVE	Spring 2012
30.	Mallikharjun R Adamala	Transportation-CIVE	Fall 2011
31.	Mohammad Elsaadni	Hydrology-CIVE	Fall 2011
32.	Rucha Andhare	Concrete Hydration-CHEM	Fall 2011
33.	Samrat Gillella	Transportation-CIVE	Spring 2010
34.	Han Hu	Transportation-CIVE	Fall 2009
35.	Joshua P Stutes	Hydraulics-CIVE	Fall 2009
36.	Vijay R Kakaraparth	Transportation-CIVE	Fall 2009
37.	Vertie Jordon	Transportation-CIVE	Fall 2008
38.	Bing Lee	Transportation-CIVE	Fall 2008
39.	Sandeep Nunna	Concrete Hydration-CHEM	Fall 2008
40.	Deepthi Gandla	Concrete Hydration-CHEM	Fall 2008
41.	Mohammad Habib	Hydrology-CIVE	Sum 2007
42.	Kiran Kumar Mulukuntala	Transportation-CIVE	Fall 2007
43.	Ram Kalyan Manthena	Transportation-CIVE	Fall 2007
44.	Murali Krishna Bommareddy	Transportation-CIVE	Fall 2007
45.	Malli Neelapu	Transportation-CIVE	Sum 2006
46.	Shyam Pandi	Transportation-CIVE	Sum 2006
47.	Ball Kishore Malla	Transportation-CIVE	Sum 2006

48.	Ahmed Gawesh	Hydraulics-CIVE	Sum 2006
49.	Yuebin Li	Transportation-CIVE	Spring 2005
50.	Mohamed Elrawady	Hydrology –CIVE	Spring 2005
51.	Rangwala, Aliasghar M	Transportation-CIVE	Spring 2005
52.	Shankar Gautam	Transportation-CIVE	Spring 2004
53.	William H. Hays	Transportation-CIVE	Fall 2004
54.	Sujeet K Gangishetty	Hydraulics-CIVE	Spring 2004
55.	Sattoor, Srinivas Goud	Hydraulics-CIVE	Spring 2004
56.	Xuyong Wang	Transportation-CIVE	Spring 2003
57.	Aravind babu Dasari	Hydraulics-CIVE	Spring 2003
58.	Karim El Kheushy	Hydraulics-CIVE	Fall 2003
59.	Raju Porandla	Transportation-CIVE	Fall 2003
60.	Vemuri, Sree Kiran	Transportation-CIVE	Spring 2003
61.	Zhang, Jing	Transportation-CIVE	Fall 2003
62.	Ravi Shaker Gundimeda	Transportation-CIVE	Spring 2002
63.	Vijay Kumar	Transportation-CIVE	Spring 2002
64.	Paul Khawali	Shale Hydration -PET	Fall 2002
65.	Sree Kiran Vemuri	Transportation-CIVE	Spring 2001
66.	Jyothirmai Palagugu	Transportation-CIVE	Spring 2001
67.	Chimmula Sumani	Transportation-CIVE	Spring 2001
68.	Ming Li	Transportation-CIVE	Spring 2001
69.	Madhuri, P.	Transportation-CIVE	Spring 2001
70.	Vishnu, P.	Transportation-CIVE	Fall 2001

### UNDERGRADUATE RESEARCH ASSISTANTS/ APPRENTICE/ NSF-REU

- |  |   |
|--|---|
| <ol style="list-style-type: none"> <li>1. Madeleine Bodin, CIVE</li> <li>2. Laura Manual, CIVE</li> <li>3. Nicholas Scalfano, CIVE</li> <li>4. Fahad Bux, CIVE</li> <li>5. Brook Smith, CIVE</li> <li>6. Mohammad Alrashidi, CIVE</li> <li>7. Katherine Foreman, CIVE</li> <li>8. Julia Ross, CIVE</li> <li>9. Kathryn McDuff, CIVE</li> <li>10. Chase, Kraemer, CIVE</li> <li>11. Peyton Bailey, CIVE</li> <li>12. Tommy, Philayvanh, CIVE</li> <li>13. Jared Veazey, CIVE</li> </ol> | <ol style="list-style-type: none"> <li>14. Wakeel Idewu, CIVE</li> <li>15. Corey Landry, CIVE</li> <li>16. Makarios Abadar, CIVE</li> <li>17. Imran Fadhil, PTE</li> <li>18. Won Fayez, PTE</li> <li>19. Najmudin, PTE</li> <li>20. Grant Hebert, CHEE</li> <li>21. Cruz Theriot, MECE</li> <li>22. Shane Faircloth, MECE</li> <li>23. Alena, Youndale, NSF/REU, MN</li> <li>24. Andrea Hernandez, NSF/REU, CA</li> <li>25. Nathan Heim, NSF/REU, AL</li> <li>26. Emily Schrader, NSF/REU FL</li> </ol> |
|--|---|

### REGISTRATION AND CERTIFICATIONS

- Professional Engineering P.E., Louisiana, 2004-20
- Engineering in Training/Fundamentals of Engineering, 1998
- Registered Engineer, Pakistan Engineer Council (PEC), 1992-96

## SERVICES & COMMITTEES

### University:

- UL Committee for Excellence in Teaching Award 2016-2020
- UL Committee on Graduate Student Climate Survey, 2019
- UL Senate Committee on Committees 2016-2019
- College and Department Safety Coordinator 2005-2019
- College Committee on Professorship Awards- 2015
- College Committee on Summer Research Awards- 2004-2007
- College Research Advisory Council- 2006
- Director, Infrastructure and Materials Testing Laboratory, College of Engineering
- Department Graduate Admissions and Scholarships
- Department Committee on Undergraduate Scholarships
- Department Committee on Student Issues-Chair
- Department Committee on Curriculum
- Department Committee on ABET-Biannual Review
- Department Committee on Laboratory Resource-Chair
- Department Committee on Faculty Search
- Department Committee in Structural Lab Development
- Acting Department Head-Summer, 2002-04
- Student Orientations-Summer, 2002-05
- Advisor Student Co-op Program for LA DOTD, 2003-14
- Advisor Chi Epsilon Honor Society, 2002-14
- Advisor UL Sports cricket Club, 2002-15
- Advisor Muslim Student Association, 2005-15
- Mentored- High school students- summer research activity 2016

### Professional:

- Louisiana Transportation Research Center (LTRC)- Bi-annual Problem Solicitation 2004 -2019
- Louisiana Transportation Research Center (LTRC)- Accelerated Loading Facility Advisory Board
- ASCE Board of Directors-Louisiana Section 2006-2007
- Research Proposal Review Board:
  - Connecticut Cooperative Highway Research Program (CCHRP)
  - Louisiana Transportation Research Center (LTRC)
  - Sultan Qabose University Research Program (SQURP)
  - Petroleum Research Funds (PRP)
  - Research and Development Funds, Iraq
  - University Transportation Center (UTC)- TranSET
- Faculty Tenure Review Committee:
  - Michigan Technological University, MI USA
  - University of Southern Alabama, AL, USA
  - Louisiana Technology, LA, USA
  - University of Engineering and Technology (UET) Peshawar-Pakistan
  - University of Louisiana at Lafayette, LA, USA
- Journal Technical Board Member
  - ASCE Journal of Materials
  - ASCE Journal of Transportation Engineering
  - ASTM Journal of Testing and Evaluation

ASCE Geo Institute Conferences  
Canadian Journal of Civil Engineering  
Journal of Microscopy  
Journal of Construction and Building materials  
Journal of Materials and Structure  
Journal of Materials and Design  
International Journal of Pavement Engineering  
International Journal of Pavement Research and Technology  
International Journal of Testing and Evaluation  
International Journal of Fuel

### **Community Services:**

- Fund raising and participations: 2002-2012
  - Katrina and Rita Hurricanes Relief
  - Asian Earthquake Relief
  - Tsunami Relief
  - Heart Walk and Fund Raising
  - Cola Swimming Team at Lafayette
- ASCE Membership Drive 2002
- Judge- LA Region VI Science and Engineering Fair-2001, 2002, 2010, 2012
- Volunteer Islamic Center of Lafayette (ICL)
- Volunteer Sunday School-Islamic Center of Lafayette

## **WORKSHOPS & TRAININGS**

- NSF workshop 2015, LTRC, LA
- NSF grant writing workshop 11/20/2015, UL Lafayette
- NCAT Professor Training Course for Research in Asphalt Technology, July 2004
- Long Term Pavement Performance (LTPP)/Data Pave Demonstration Workshop, 2002
- NCAT Professor Training Course for Research in Asphalt Technology, July 2000
- Long Term Pavement Performance (LTPP)/Data Pave Demonstration Workshop, 1999
- Ethic for Professional Engineers, 2016-18
- Professional Code and Ethics, 2015
- Ethics Seminar: LTRC Conference, Baton Rouge, 2013

## **MEMBERSHIPS & AFFILIATIONS**

- American Society of Civil Engineers (ASCE)
- Chi Epsilon Honor Society for engineers
- International Society of Soil Mechanics and Geotechnical Engineering
- Louisiana Transportation Research Center (LTRC)
- Pakistan Engineering Council (PEC)
- Institute of Materials Research and Innovation (IMRi), UL Lafayette
- Center for Analysis of Spatial and Temporal Systems, UL Lafayette
- Laboratory of Composite Materials at UL Lafayette
- Director Infrastructure and Materials Testing Laboratory, College of Engineering