

Nazimuddin Wasiuddin, Ph.D.
Professor, Mississippi State University
Materials and Construction Industries (MCI) Professorship
 Richard A. Rula, School of Civil & Environmental Engineering
 Rula 2042, 250 Hardy Rd, Starkville, MS 39759
 Phone: 662-325-0182, Email: wasi@cee.msstate.edu



Short Biography

Dr. N. "Wasi" Wasiuddin is a Professor at the Richard A. Rula School of Civil and Environmental Engineering at the Mississippi State University since August 2025. He is the holder of the Materials and Construction Industries (MCI) Professorship. He served as an associate director of the Southern Plains Transportation Center (SPTC), a federally funded regional university transportation center established in 2013. Dr. Wasiuddin served as a member of many national and international committees including Transportation Research Board (TRB) Technical Standing Committees, ASTM Technical Committees, Louisiana Transportation Research Center (LTRC) Policy Committee and LTRC Foundation Board.

Dr. Wasiuddin's research expertise is in the area of pavement materials and engineering primarily in asphalt technology including modified binder rheology, asphalt emulsions, surface treatments, thermodynamic and physico-chemical characterization, spectroscopic analyses, mixture cracking tests, and micro- and nano-scale characterization of asphalt binders and mixtures. Dr. Wasiuddin published thirty-eight peer-reviewed journal papers and also authored over one hundred conference papers and technical reports. According to SCOPUS, he has 1165 citations with h-index of 18. He served as the PI of thirty-seven externally funded research projects that brought about \$2.9M to Louisiana Tech University and MS State University since 2007. Dr. Wasiuddin received several awards for his contributions to different conferences and journal articles including TRB Annual Meeting. Dr. Wasiuddin received nine (9) research grants from the then CenturyLink, a telecommunication company headquartered in Louisiana for micro-trench design to install fiber optic cable into residential roads.

Dr. Wasiuddin holds a provisional patent in which he developed a novel warm mix additive from an industrial by-product. Dr. Wasiuddin presided over many conference sessions including TRB Annual Meeting Sessions. He presented at two TRB Webinars as a panelist and at one TRB invited lecture session.

Education

Ph.D.	Civil Engineering	University of Oklahoma, Norman, USA	2007
M.S.	Civil Engineering	Dalhousie University, Halifax, Canada	2002
B.S.	Civil Engineering	Bangladesh Uni. of Engg. & Techno., Dhaka, Bangladesh	2000

Professional Experience

Professor	School of Civil & Env. Engg.	Mississippi State University	2025-Present
Professor	Civil Engg. & Constr. Engg. Tech.	Louisiana Tech University	2019-2025
Associate Prof.	Civil Engg. & Constr. Engg. Tech.	Louisiana Tech University	2013-2019
Assistant Prof.	Civil Engg. & Constr. Engg. Tech.	Louisiana Tech University	2007-2013
Visiting Researcher	Structural Mechanics/ Civil Engineering	Technical University of Delft, The Netherlands	May 2006 (3 weeks)

Selected Research Impact, Leadership, and Technology Transfer Activities

1. Construction & Materials Industries (MCI) Professorship, as per the charter of the Construction Materials Regional Consortium (CMRC), Richard A. Rula School of Civil & Environmental Engineering, Mississippi State University, 2025 – Present.

2. **Best Paper Award** in Infrastructure Design and Maintenance at the 15th World Conference on Transport Research, 2019, Mumbai, India for the paper titled “A Novel Method for Polymer Content Determination in Asphalt Binders and Emulsions”.
3. Research and Economic Impact Award (Plaque and \$300), College of Engineering and Science, Louisiana Tech University, 2021.
4. Winner of the First Half of the Asphalt Materials Session and Overall Runner-Up of the Asphalt Materials Section **Best Poster Award** for the paper “Use of Sweep Test for Emulsion and Hot-Asphalt Chip Seals: Laboratory and Field Evaluation” 91st Annual Meeting of the Transportation Research Board, Washington, D.C., 2012.
5. Dr. Wasiuddin led nine research projects (under no disclosure agreement) sponsored by CenturyLink, a telecommunication company. The resulting technology had connected over 4,000 households across the US during the research and development phase of the micro-trench design projects for fiber optic cable installation.
6. Dr. Wasiuddin contributed to establishing MSCR Test Specifications for LA DOTD through a funded project.
7. Development of a Warm Mix Asphalt Additive from an Industrial By-Product. Application number, confirmation number & EFS ID: 62417461, 556 and 27419813, respectively. (Provisional patent).
8. Robert Howson Professorship, Louisiana Tech University, 2013-2025.
9. Graduate Coordinator, Civil Engineering, Louisiana Tech University, 2013-2025.
10. Louisiana Transportation Research Center (LTRC) Foundation Board Member and LTRC Policy Committee Member, 2013-2015.

Recent Journal Publications

1. Chowdhury, A., Nourin, P., Wiley, J., Wasiuddin, N., Peters., “Development of a Revised Molecular Model for Asphalt Oxidation and Its Implications for Polymer Compatibility, (2026), Fuel.
2. Selim, S., Wasiuddin, Peters, A., Wasiuddin, N.M., “An In-Depth Evaluation of Glass Transition Temperature for Miscibility Analysis of HDPE, LDPE, and PP Modified Asphalt Binders” (2026), International Journal of Pavement Research and Technology.
3. Selim, S., Islam, M.R., Peters, A., Wasiuddin, N.M., “A Thermodynamic Approach to Investigate Compatibility of HDPE, LDPE, and PP Modified Asphalt Binders using Differential Scanning Calorimeter (DSC)” (2025), Construction and Building Materials, Vol. 476, 140904.
4. Chowdhury, A., Nourian, P., Wasiuddin, N.M., Peters, A., “Investigation of Polymer-Asphalt Compatibility Using Molecular Dynamics Simulation” (2024), Journal of Physical Chemistry B, Vol. 128, Issue 19, Pages 4821-4829.
5. Elnaml, I., Liu, J., Mohammad, L.N., Dylla, H., Wasiuddin, N.M., Cooper, S., “Recycling Waste Plastics in Asphalt Mixture: Engineering Performance and Environmental Assessment” (2024), Journal of Cleaner Production, Vol. 453, Art. No. 142180.
6. Islam, M.R., Salomon, D., Wasiuddin, N.M., “Investigation of Oxidative Aging of Field-Extracted Asphalt Binders at Various Conditions Using Cabronyl Index” (2024), Construction and Building Materials, 415, Art. No. 134969.

Selected Invited Presentations

1. Compatibility of Asphalt Binder and Plastic: Simulation and a Thermodynamic Experimental Approach, 104th Annual Meeting of the Transportation Research Board, Jan. 5-9, 2025.
2. TRB Webinar: Innovations in Testing—Modified Binders Cracking Resistance, A Novel DSR-Based Force Ductility Test Method, presented on May 25, 2022.
3. NASEM Webinar: A presentation to the **National Academies Committee on Repurposing Plastics Waste in Infrastructure**, “Improving the Compatibility of Waste Plastic and Asphalt Binder via Theoretically Justified Identification of Compatible Blends”, Committee Final Report: Recycled Plastics in Infrastructure: Current Practices, Understanding and Opportunities, presented on November 18, 2022, National Academies of Science, Engineering and Medicine.