Academic CV

Gowhar Aziz

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Gowhar Aziz, Ph.D.|

Powai, New Mumbai - 400076, India

OBJECTIVE

I am a dedicated doctorate specializing in Transportation Engineering & Planning, with a prior academic background in Civil Engineering. My passion lies in research, particularly in developing methods to recover resources from waste. My current focus is on making novel asphalt binders using materials from industrial waste (nano-cenospheres). I am committed to pursuing sustainable solutions to address challenges in Civil Engineering. I am actively seeking opportunities to utilize and advance my research in transportation engineering, especially in pavement materials and sustainable pavement design.

EXPERIENCE

Jammu and Kashmir Projects Construction Corporation Limited (JKPCC) *2015*

Site Engineer Intern (ERA) *Anantnag, India*

Quality control and analysis of the foundation "Trauma Hospital" Bijbehara

IIT Bombay *2025*

Teaching Assistantship (Transportation Engineering)

Advanced Pavement Engineering Lab CE-681 at IIT Bombay

Land Surveying Theory and Practice CE-238 at IIT Bombay

NIT *Srinagar, India*

Teaching Assistantship (Transportation Engineering)

Geometric Design of highways and streets CTE-206-E1 at NIT Srinagar

Highway Laboratory CVL302 at NIT Srinagar

Traffic Engineering Laboratory CVL-351 at NIT Srinagar

Vivekananda Institute of Technology *Jaipur, India*

Assistant Professor *2019*

Vivekananda Global University *Jaipur, India*

Teaching Assistantship (Transportation Engineering) *2016 to 2018*

POST-DOCTORAL EXPERIENCE

Indian Institute of Technology (IIT) Bombay, India *Feb-2025- 02-September-2026*

Institute Post-Doctoral Fellow *Mumbai, India*

EDUCATION

National Institute of Technology (NIT) Srinagar, india *2020-2025*

Ph.D. *Srinagar, India*

Vivekananda Global University *2016-2018*

Master of technology (Transportation Engineering) *Jaipur, India*

Grade 9.41

Rajasthan technical University (RTU), Kota *2012-2016*

Bachelor of technology *Rajasthan, India*

Percentage 75.61 (Honours)

PHD THESIS

Thesis title: A Study on the rheological Characteristics of Nano-Polymer Composite modified asphalt binders

Doctoral Supervisor: ***Prof. Abdullah Ahmad.****, Assistant. Prof. Department of Civil Engineering National Institute of Technology Srinagar, India, 19006 and* ***Dr. Md. Muslim Ansari,*** *Senior Scientist, Department of Structural Engineering, Central Building Research Institute, Roorkee, India, 247667.*

The study investigates the modification of VG-10 and SBS asphalt binders using industrial-waste-derived nanocenospheres to enhance their rheological and mechanical performance. Advanced material characterization and laboratory testing techniques were employed, including XRD, FTIR, MSCR, LAS, RTFO, and PAV, to evaluate the structural, rheological, and aging behavior of the modified binders. The incorporation of nanocenospheres demonstrated significant improvements in key performance parameters, such as increased stiffness, enhanced elasticity, improved fatigue life, and reduced rutting and aging susceptibility. The findings provide valuable insights into the development of sustainable, cost-effective, and high-performance asphalt materials, promoting the

utilization of industrial waste for resilient and long-lasting pavement infrastructure.

PUBLICATIONS

C=CONFERENCE, J=JOURNAL, R= Under Review

[J.1] Aziz G, Ahmad A, Ansari.m. Investigating the High-Temperature Performance of Asphalt Binders Blended with Nanocenospheres. J Mater Civ Eng 2024;36:1–7. https://doi.org/10.1061/JMCEE7.MTENG-17934 **[,Q1]**

[J.2] Aziz G, Ahmad A, Ansari.m. Utilization of Nanocenospheres a waste material to improve the physical and rheological properties of SBS asphalt binders 2024;374. https://doi.org/10.1016/j.fuel.2024.132378 **[Q1]**

[J.3] Gurjar J, Aziz G, Ravi, Mir MS. Evaluation of physical and rheological properties of polymerized soft-grade bitumen binders. Fuel 2025; 385:134167. https://doi.org/10.1016/j.fuel.2024.134167. **[Q1]**

[J.4] Sadiq F, Ahmed T, Mohi I, Din U, Aziz G, Shafi M, et al. Integration of nano Al2O3 and nan SiO2 in asphalt mixes: A comprehensive performance and durability evaluation. Constr Build Mater 2024,412.134687. https://doi.org/10.1016/j.conbuildmat.20 23.134687 **[Q1]**

[J.5] Gurjar, J., J. Choudhary,. Aziz, G, and M. Mehdi. 2026. "Multi-performance optimisation of bitumen modified with nanoclay and crumb rubber using a fuzzy AHP technique." Fuel, 406 (PD): 137177. Elsevier Ltd. https://doi.org/10.1016/j.fuel.2025.137177 **[Q1]**

[J.6] Gowhar Aziz & Ms. Payal Bakshi, A study on the utilization of M-sand in Pavements. International Journal of Technical Innovation in Modern Engineering & Science (IJTIMES), (SJIF-2017), e-ISSN: 2455-2585 Volume 4, Issue 6, June-2018. (IJTIMES).

[J.7] Aziz G, Jan A, Ahmad A. Evaluating the impact of Wetbond additives on the rheological characteristics of SBS polymer modified binders 2026. https://doi.org/https://doi.org/10.1007/s41062-026-02833-5. **[Q2]**

[R.1] Aziz G, Ahmad A, Ansari.m. Exploring the potential of nanomaterials in asphalt binder's modification: A review on blending ratios, physical and rheological performances. **(Accepted but editorial review)** in International Journal of Pavement research and Technology.

[R.2] Aziz, G, Singh D. Microsurfacing in Pavement Preservation: A Comprehensive Review of Materials, Mix Design, Performance Evaluation, and Field Challenges (Under review) Journal of traffic and transportation Engineering.

[C.1] Aziz G, & Prof. (Dr.) M. Raishangni, A comparative study on natural sand & crushed stone sand. RTCEC -Conference Proceedings, International Journal of page 1 - 3 Engineering Research & Technology (IJERT), ISSN: 2278-0181.

[C.2] Aziz G, & & Rahul Chaudhary, A study on concrete with partial replacement of fresh aggregate by recycled aggregate. International Journal of Technical Innovation in Modern Engineering & Science (IJTIMES), (SJIF-2017), e-ISSN: 2455-2585 Volume 5, Issue 3, March-2019. (IJTIMES).

[C.3] Aziz G, & Sahib Khalil Bhat, A study on utilization of brick dust for soil stabilization. International Journal of Technical Innovation in Modern Engineering & Science (IJTIMES), (SJIF-2017), e-ISSN: 2455 2585 Volume 5, Issue 3, March-2019. (IJTIMES

SKILLS

Experimental design: Orthogonal matrix

Statistical Software: SPSS,

General: Microsoft Office, **Abacus, AutoCAD**

Research Skills: Excel, SPSS

Areas of Interest: Civil engineering materials, Material Characterization, Pavement analysis and design, Waste valorization, Rheological analysis, forensic Investigation of asphalt pavements.

AWARDS

Best Student Award *2016*

CERTIFICATIONS/EXTRA CIRICULAR ACTIVITIES

1. Provided technical guidance in flexible pavement quality testing, laboratory quality control, material testing, and construction monitoring for the Greenfield 6-lane, access-controlled NH-544G project in Andhra Pradesh, **contributing to a FOUR Guinness World Records attempt**.
2. Entrepreneurship Awareness Programme-2016 organized by Department of Science & Technology Rajasthan.
3. Participated in a five-day workshop on "Quality Control & Quality Assurance in Civil Engineering Structures" organized by Department of Civil Engineering, MNIT, Jaipur
4. Participated in a five-day workshop on "Innovative Trends & Techniques in Civil Engineering Construction" organized by Department of Civil Engineering, MNIT, Jaipur

ADDITIONAL INFORMATION

Languages: English (Proficient), Urdu (Proficient), Hindi (Proficient), Kashmiri (Proficient), Arabic (read and write)
Interests: Aviation, Driving, Reading