RESUME

Dr. Khan Zahir Ahmed

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SUMMARY

Dedicated mechanical engineer with strong academic credentials and expertise in sustainable building materials and thermal engineering. Holds a B.E. in Mechanical Engineering, M.Tech in Thermal Engineering, and a Ph.D. in Thermal Engineering. Experienced in thermophysical characterization of waste tire rubber-polypropylene composites and thermal conductivity evaluation of air-pocketed building materials.

Academic Credentials:

Qualification	Board/University	Passing Year	Division/Percentage
Ph.D. (Thermal Engg.)	Aligarh Muslim University	2024-25	Awarded
M-Tech (Thermal Engg.)	Nirma University	2017	7.21 CPI
B.E (Mechanical Engg.)	Shivaji University	2015	60.35 %
H.S.C	Maharashtra State Board (S.K Somaiya)	2010	67.33 %
S.S.C	Maharashtra State Board (M.U.U.H.S)	2008	87.23 %

Other Exam/Education:

- Cleared **IIT-Gate 2015** (Gate Score - 376)

Academic Projects/Theses

Project (Ph.D):

Title: ***Studies on the thermophysical properties of a novel insulating material.***

In the above research, I studied thermophysical properties of newly developed composite material comprising Waste-tire rubber and Polypropylene. This study spans multiple disciplines incorporating various engineering aspects such as the development of a screw extruder machine, polymer science, material science, and thermal analysis. Successful blends of WTR and PP for various concentrations were obtained using an in-house developed filament extruder.

Project (M. TECH):

Title: ***Estimation of effective thermal conductivity for Hollow Air-pocketed building material.***

In this dissertation, I investigated the estimation of effective thermal conductivity for building materials incorporating hollow air pockets. The focus was on analyzing the impact and optimization of these air-pocketed materials concerning their flexural strength, a critical parameter in assessing structural integrity. Different configurations were explored, involving the creation of varying no. of air pockets with different diameters. Notably, the arrangement of air pockets in a zig-zag pattern exhibited enhanced flexural strength while maintaining an optimal effective thermal conductivity. The results obtained were compared and validated using ANSYS software and Guarded Hot Plate.

Project (B.E):

Title: ***Design and fabrication of ball milling machine for synthesis of nanoparticles.***

In this project work, I fabricated an in-house developed ball milling machine used to make nanoparticle-size powder. The setup comprises the vial with blades attached to the shaft and metal balls. As the shaft rotates, blades spin the balls, causing them to collide and reducing the powder to nano-size. Ball mills can grind mining ores, coal, and pigments. Nano powder can be used for various applications such as electronic device manufacturing, medical treatment, solar cells, paints, etc.

Computer and Software Exposure:

AutoCAD • MS Word • MS Excel • OriginPro • LyX • LaTeX

List of Publications:

1. **Khan Zahir Ahmed** and Mohammad Faizan **(2023)**. "Mixing Strategy and Tensile Strength Characterization of WTR-PP Composite." **Taylor & Francis -** *International Journal of Polymer Analysis and Characterization.* DOI: 10.1080/1023666X.2023.2238439

2. **Khan Zahir Ahmed**, Mohammad Faizan, Farooque Azam and Abdul Faheem **(2023)**. "Hardness assessment of Novel waste tire rubber-polypropylene composite." ***Materials Today: Proceedings*****.** DOI: 10.1016/j.matpr.2023.03.445

3. **Khan Zahir Ahmed**, M Asif and Mohammad Faizan **(2024)**. "Design and Development of a Test Method for the Measurement of Thermo-Physical Properties of Different Materials" ***JPME*** – ***SAGE-E*****.** DOI: 10.1177/09544089231216028

4. **Khan Zahir Ahmed** and M. Faizan (**2024**). "Comprehensive Characterization of WTR powder" Journal of The Institution of Engineers – **Springer India E Series**. DOI: 10.1007/s40034-023-00282-8

5. **Khan Zahir Ahmed**, Mohammad Faizan and M. Asif **(2024)**. "Thermal conductivity measurement of Novel waste tire rubber-polypropylene composite". ***Springer-Nature, Lecture Notes in Mechanical Engineering.*** DOI: 10.1007/978-981-99-7213-5

6. **Khan Zahir Ahmed**, Masha Allah, Niyaz Ahmed and Farooque Azam **(2026).** "Numerical investigation of fracture behaviour in pipelines with through-wall cracks using the J-integral approach." **Springer-Nature,** ***Life Cycle Reliability and Safety Engineering.*** DOI: 10.1007/s41872-026-00455-5

7. **Khan Zahir Ahmed,** Vikas Lakhera, Mohammad Faizan **(2026).** "Numerical and experimental study on the influence of air pockets on thermal and mechanical behaviour of bricks" **Taylor & Francis - Journal of Structural Integrity and Maintenance.** ***(Under Review)***

8. **Khan Zahir Ahmed**, M. Faizan **(2026)**. "Tribological Assessment of WTR-PP Composite under Variable Loading and Sliding Conditions" **Taylor & Francis - Tribology Transactions.** ***(Under Review)***

Work Experience:

Teaching Assistant **2016-2017**	**Nirma University (Ahmedabad – Gujarat, India)** - Served as **T.A** to a senior faculty Advisor ***Prof. Vikas Lakhera*** - Assisted/conducted practicals of Undergraduate Engineering students
Assistant Professor **Mar 2023 to Feb 2025**	**Theem College of Engineering (Boisar- Maharashtra, India)** **-** Served as Assistant professor in Department of Mechanical Engineering
Assistant Professor **Feb 2025 to Present**	**K. J. Somaiya Institute of Technology (Mumbai- Maharashtra, India)** **-** Served as Assistant professor in Department of Basic Science & Humanities

Subjects Taught:

1. Engineering Graphics
2. Engineering Mechanics
3. Materials and Metallurgy
4. Logistic and Supply Chain Management

Co/Extra-Curricular Activities:

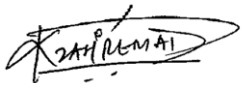
- Event Coordinator for INFINITY-2015 Organized by MESA of DYPCET, Kolhapur, India.
- Attended one week faculty development program on "Recent advances in Heat transfer and Combustion Engineering" Organized by Department of Mechanical Engineering. AMU (2021).
- Attended an ISRO program on "Staging System and Mechanism for Launch Vehicles" Organized by Department of Mechanical Engineering. AMU (2022).
- Attended/Presented papers in international conferences. (AHTFD 22, ICETMIE 2022, ICTFSD 2022, ICRAMDM 22)
- Actively contributed as a valuable member of the organizing team for the successful International Conference AHTFD-2022 at Aligarh Muslim University.

Personal Details:

Name:	Khan Zahir Ahmed
Address:	601-Olivia, Nahar Amrit Shakti, Mumbai, India - 400072.
Nationality:	Indian
Language known:	English, Hindi, Urdu, Marathi
Interests/hobbies:	Sports, Reading, Research.

Declaration

I do hereby declare that the above information is true to the best of my knowledge**.**



Place: Mumbai

Khan Zahir Ahmed