

# Engr. Muhammad Ahsan Wasif

*Lecturer & Researcher*

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📍 NED University of Engineering & Technology, Karachi, Pakistan

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## PROFILE SUMMARY

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Passionate and Innovation-oriented lecturer & researcher in Polymer, Petrochemical, and Process Safety Engineering, skilled in experimental research involving ignition behavior of dust-gas hybrid mixtures, polymer composites development, materials characterization, and process simulation. Experienced in handling engineering projects, technical evaluations, and material management, integrating engineering judgment with data-driven decision-making. Passionate about advancing research in explosion protection, reaction engineering, polymer materials, safety science, and sustainable/clean technologies, with the aim of contributing to impactful PhD-level research and academic scholarship.

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## RESEARCH INTERESTS

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Polymer composites & materials engineering   |   Explosion and fire safety engineering   |  
Thermal hazard assessment   |   Reaction engineering & modeling   |  
Environmental & clean technologies   |   Sustainable process design

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## EDUCATION

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**Otto von Guericke Universität Magdeburg, Germany**

04/2019 – 04/2021

*M.Sc./M.Phil - Process Safety & Environmental Engineering*

Magdeburg, Germany

Master Thesis - Ignition Temperature of Dust-Gas Hybrid Mixtures

- Contributed to the international NEXHYS initiative for developing standardized testing methods for two-phase explosive mixtures.
- Modified and optimized the Godbert-Greenwald (GG) furnace to enable hybrid mixture ignition analysis.
- Conducted experimental determination of ignition temperatures for gases, dusts, and hybrid mixtures.
- Compared ignition behavior between pure and hybrid phases to support improved safety protocols.
- Gained expertise in experimental combustion science, thermal hazard evaluation, lab safety, and instrumentation.

**NED University of Engineering & Technology**

12/2013 – 12/2017

*B.E. Polymer & Petrochemical Engineering*

Karachi

Final Year Project: Synthesis of Lime Ash Particles for SO<sub>2</sub> Absorption and Reinforcement in LDPE.

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## RESEARCH PROJECTS

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Cryogenic separation of CO<sub>2</sub> from industrial waste gas streams.

Aspen Plus simulation: Sustainable methanol production from biogas.

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## ACADEMIC EXPERIENCE

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**Faculty Lecturer - NED University of Engineering & Technology**

11/2025 - now

*Department of Polymer & Petrochemical Engineering*

- Delivering lectures in polymer materials, petrochemicals operations, industrial safety, and engineering fundamentals.
- Supervising undergraduate laboratory sessions, quizzes, and design assignments.
- Supporting and co-supervising final-year research projects.
- Conducting academic assessments and preparing instructional material.
- Facilitating industrial exposure through case studies, safety evaluations, and technical demonstrations.

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## RESEARCH PUBLICATION

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**Journal of Basic & Applied Sciences**

01/12/2017

2018, 14, pg. 119-123

Investigated mechanical, flexural, and hardness behavior of LDPE composites reinforced with synthesized lime ash particles.

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## INDUSTRY EXPERIENCE

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**Yunus Textile Mills Ltd.**

11/2021 – 11/2025

*Assistant Manager - Technical Projects & Engineering Materials*

- Led engineering-related projects involving mechanical, electrical, and fire-safety systems.
- Managed technical specifications, engineering evaluations, and material selection for production machinery.
- Coordinated with engineering teams to ensure equipment suitability and compliance with industry standards.
- Conducted technical & cost analyses, vendor capability assessments, and engineering documentation development.
- Utilized data-driven approaches to monitor KPIs, equipment performance trends, and material consumption.
- Engaged in contract handling, commissioning support, and project execution for engineering upgrades.
- Trained junior staff on engineering requirements, system compatibility, and material performance.

*Intern*

- Observed production and quality control of polymer masterbatches.
- Studied industrial EHS practices, risk mitigation measures, and operational safety.
- Prepared a technical report summarizing process flow, QC procedures, detected gaps, and improvement recommendations.

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**TECHNICAL SKILLS**

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**Engineering Tools**

MATLAB, Python, Aspen  
Plus

**Software**

MS Excel (Advanced), MS  
PowerPoint, Data Analysis  
Tools

**Research Strengths**

Polymer composites, explosion  
safety, experimental design,  
materials testing, reaction  
engineering, process  
optimization

**Laboratory Exposure**

UTM tensile testing, flexural  
testing, impact testing,  
hardness measurements,  
furnace operation, sample  
preparation

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**LANGUAGES**

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**English**

Fluent

**Urdu**

Native

**German**

Beginner