

Muhammad Daniyal Hassan

Materials Engineer

Islamabad, Pakistan

+92 303 069 9545

daniyalhasssan12@ya
hoo.com

[LinkedIn Profile](#)

Valid Passport | Open
to Relocation

PROFESSIONAL PROFILE

Materials Engineer with hands-on experience in mechanical testing, quality control, materials characterisation, and failure analysis. Executed 100+ mechanical tests across impact, bending, and damage tolerance regimes on polymer composites, structural alloys, and advanced materials systems. Proven ability to identify and analyse material defects, perform root cause analysis, and maintain quality documentation in compliance with engineering standards. Published researcher in materials science with demonstrated application in structural performance and sensing systems. Holds a valid passport and is open to relocation.

PROFESSIONAL EXPERIENCE

Research Assistant | Institute of Space Technology, Islamabad

Mar 2024 – Dec 2025

- Executed 100+ mechanical tests (impact, bending, damage tolerance, tensile) on polymer composite and structural material specimens to evaluate performance and structural integrity
- Identified and documented manufacturing defects including delamination, porosity, fiber misalignment, and matrix cracking; contributed to improved process control strategies
- Performed root cause analysis of material failures under varying loading conditions and proposed corrective measures to improve process reliability
- Maintained detailed test reports and quality documentation, ensuring traceability, repeatability, and compliance with engineering standards
- Coordinated with cross-functional laboratory teams to streamline material availability, standardise testing procedures, and support engineering decision-making
- Applied material behaviour insights and simulation data (COMSOL, SolidWorks) to support structural assessments and material selection decisions

Intern – Materials & Composites | Smart Composites Lab

Jul 2023 – Jan 2024

- Supported material inspection, sample preparation, and mechanical testing across composite and polymeric material systems
- Assisted in identifying quality-related defects and inconsistencies in laminate and bulk material samples
- Contributed to laboratory workflows focused on performance validation, defect analysis, and process documentation

EDUCATION

BSc Materials Science & Engineering | Institute of Space Technology, Islamabad

2019 – 2023

TECHNICAL SKILLS

Mechanical Testing	Tensile, bending, impact & damage tolerance testing Failure mode identification Post-failure performance assessment
Materials Characterisation	Optical microscopy for defect analysis Sectioning & surface preparation Fracture surface evaluation
Simulation & Design	SolidWorks (part/geometry design) COMSOL (structural & material response modelling)
Data & Documentation	Microsoft Excel (data tracking, analysis, reporting) IBM SPSS (regression, correlation, trend analysis) Technical report writing Quality documentation
Materials Knowledge	Polymer composites (CFRP, GFRP) Structural alloys Additive manufacturing materials Recycled/sustainable materials

SELECTED RESEARCH & PROJECTS

- Structural Health Monitoring for composites: developed a real-time system for detection of impact-induced damage in CFRP structures using embedded sensing
- High Sensitivity Composite Sensors for Proprioceptive Applications: peer-reviewed publication; focused on fracture behaviour and functional degradation of sensing composites
- Percolation Network Formation in 3D-Printed Anisotropic Composites: investigated structure-property relationships and degradation mechanisms under mechanical loading
- Polymer Waste Recycling for Composite Reinforcement: evaluated material processing routes and mechanical performance of recycled-fibre composite systems

CERTIFICATIONS

- Quantum Mechanics for Engineers (Specialisation)
- Introduction to Additive Manufacturing Processes
- Material Chemistry & Sustainable Building
- Circular Economy – Sustainable Materials Management
- Fundamentals of Particle Accelerator Technology (NPAP MOOC)

LANGUAGES

English – C1 (Advanced) **German** – Currently Learning **Urdu** – Native

LEADERSHIP & EXTRACURRICULAR ACTIVITIES

- Vice President, IST Character Building Society (2022–2023)
- General Secretary, IST Character Building Society (2021–2022)
- Director of Decor, IST Space Society (2020–2021)
- Director of Security, World Space Week IST (2019)