



Dr. Tanweer Hussain, Ph.D.

A highly qualified and experienced Mechanical Engineer,
with Vast industrial and Research Experience
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CAREER SUMMARY:

Energetic and experienced Mechanical Engineer with vast field & research experience of effectively managing various projects with multitasking capability. Served in various industries at England, and Pakistan, including jet engine manufacturing, sugar, polypropylene, automobile, battery manufacturing, and oil & gas industries. Recognised GD&T based mechanical assembly design expert, having worked with **Rolls Royce Plc. UK** in the Aero-engine assembly design and variation propagation control. Specialist in DFMA, modelling & analysis mechanical assemblies, stochastic and uncertainty analysis of mechanical systems. Expert in lead acid battery manufacturing for design optimisation of battery grid design to improve charge acceptance. Proven NDT based inspection expert in pipeline constructions of oil & gas, and process industries. Member of **UIC's Harmotrack Project** and **UK Rail Research and Innovation Network (UKRRIN)** to implement standards of international railway association in Pakistan.

PROJECTS COMPLETED:

1. Involved in assembly design of Jet Engine Rotor at Rolls Royce Plc. UK, (Jan 2008 – Feb 2011). Studied and analysed T-500, T-900 and T-1000 jet-engines for error propagations during assembly and re-designed assembly processes of T-900 and T-1000 engines with effective method of controlling variation propagations in the assembly of these engines.
2. Involved in assembly design project of Jet Engine Casing with MTU Aero Engines GmbH Germany, (Jan 2011 – Feb 2012). Studied and analysed Outward Guide Vane (OGV) casing assembly of aero-engine. Developed method for optimisation of assembly process and controlling assembly variation propagations.
3. Involved in inspection of NDT and HDD of 42-inch dia. LNG line laid between Jamshoro to Nawabshah districts of Pakistan (As a Lead consultant with Applus Velosi from Dec-2015 to Sept-2017).
4. Worked for Jamshoro Thermal Power Plant (2015-2016) as consultant to perform root cause analysis for the loss of thermal efficiency and power generation enhancement by eliminating the factor affecting heat rate of the plant.
5. Condition Monitoring of rail track and rolling stock in collaboration with Pakistan Railways: An HEC funded R&D project under National Centre for Robotics and Automation (NCRA) as Co-PI in Condition Monitoring Lab (2020 to 2023).

CURRENT PROJECTS:

1. Condition Monitoring of High Voltage Line Insulators Using Deep Learning in collaboration with National Transmission and Distribution Company, Pakistan: A project under Sindh Research Support Program.
2. Design and modelling of Vertical Axis Wind Turbine, A Unique Spiral Bladed Turbine design. An indigenous Project.

ACADEMIC RECORD

Date		Name & Address of Institution	Academic Degree	Subject / Field of Study
From	To			
04-05-1996	16-06-2001	Mehran University of Engineering & Technology, Jamshoro	B.Eng. 1st Division (72.36 %)	Mechanical Eng.
03-01-2004	14-11-2005	Mehran University of Engineering & Technology, Jamshoro	Post Grad Diploma 1st Division (72.88 %)	Manufacturing Eng.
10-12-2007	16-07-2012	The University of Nottingham, England UK	PhD	Mechanical Eng.
Title of PhD Thesis		Modelling and Controlling Variation Propagation in Mechanical Assembly of High Speed Rotating Machines		

PROFESSIONAL TRAINING AND CERTIFICATIONS

1. Condition Monitoring of Rotating Machines	One Week Training at PRUFTECHNIK, Singapore	2017
2. NDT Level II Certification	Four Weeks Training	2016
3. IOSH Managing Safely	One Week Training at Novax Pakistan	2014
4. Power Generation and Various Processes of Steel Mills	Eight Weeks Apprenticeship at Pakistan steel Mills	1997
5. Fertilizer Manufacturing and Allied Processes	Four Weeks Internship at ENGRO Chemicals Pakistan Ltd. Daharki Plant	1999

FULL TIME INDUSTRIAL EXPERIENCE

Aero-Engine Assembly Researcher (Jan 2008 – Feb 2012)	Rolls Royce Plc. Derbyshire England, UK
<p>As a part of my PhD Project, worked on the Jet Engine Assembly line at Rolls Royce Plc, my Role was:</p> <ol style="list-style-type: none"> Assembly process design of Jet Engine Rotor with the assembly team of Rolls Royce Plc. UK. To analyse the run-out tolerance data, as per ASME Y14.1 standard, analytically perform impact of individual part run-out using connective assembly method, and assemble of the aero-engine parts to achieve straight built of the engine rotor. To study and analyse the accumulation of errors during the assembly of T-500, T-900 and T-1000 jet-engines. To design and propose an effective jet-engine assembly process that have tendency to control variation propagations during assembly and saves assembly time. 	
Lead Engineer (Dec-2005 to Nov-2006)	Total Waste Management Alliance Plc, Scotland Contractor of ENI Bhit Gas Field, District Jamshoro, Pakistan
<p>Role:</p> <ol style="list-style-type: none"> Installation and Commissioning of RotoMill at the ENI Gas Field client site. Maintain project schedule by monitoring project progress; coordinating activities; resolving problems. Prepare project status reports by collecting, analysing, and summarizing information and recommending actions. Maintain safe and clean working environment by enforcing procedures, rules, and regulations. Processing and recycling of Oil Based Mud / drilling waste. Commissioning, installation, operation, and maintenance of RotoMill. 	
Maintenance & Q.C. Engineer (22-06-2001 to 23-04-2003)	Dewan Sugar Mills Ltd. (Polypropylene Div), Dewan Mushtaq Group of Industries
<p>Role:</p> <ol style="list-style-type: none"> Maintenance of compressors, pumps, extruders, weaving looms, and other plant machinery. Supervise Q.C. team and to inspect the product quality to meet the customer's requirement. Observe quality inhibiting situation and eliminate these conditions. While I was working in Dewan Sugar Mills Ltd. (Polypropylene Div), time to time I was assigned additional tasks of other industries of Dewan Mushtaq Group during their peak work demands. Plant erection and construction of Dewan Chipboard and Panels. Plant erection and Commissioning of Dewan distillery. 	

CONSULTANCY SERVICES IN INDUSTRIES

1. R&D Consultant (Sept-2017 till to-date)	Bridge Power Batteries, Rainbow Hi-Tech Engineering District Jamshoro Pakistan
<p>Role:</p> <ul style="list-style-type: none"> To develop CAD model for the grid shaped battery cell for its die manufacturing for serviceable Lead acid batteries used in LTVs and HTVs. To design optimisation of battery grid design for improved charge acceptance. To test and suggest effective active material (lead-oxide) paste composition. CAD Design and analyse of Tubular battery performance for stationary purpose. CAD design of battery components for their die manufacturing. Battery case design optimisation for maintenance free batteries for its safe operation under hot weather. 	
2. Training (Nov-2017 till to-date)	United Energy Pakistan Limited
<p>Role:</p> <ul style="list-style-type: none"> To design and develop basic orientation and various trainee courses for the Field Trainees. To design and develop various refresher courses for junior to senior level Production Operators. To conduct onsite training for the field trainees and the production operators. Train the project staff for health and safety and pipeline construction and inspection methods. 	
3. Senior Consultant (Dec-2015 to Sept-2017)	Aplus Velosi Pakistan
<p>Role:</p> <ul style="list-style-type: none"> Monitor the quality of pipeline construction of LNG (42inch Dia.) pipeline project of SSGC as per ROW specifications. Coordinating the team of Engineers for inspection of weld joints quality, collection of data for RT, UT, and Hydrostatic testing and resolving pipeline construction problems. Instruct the team of Engineers to monitor the work of SSGC subcontractor as per work-order, issue NCRs if any Non-compliance is observed. And submit daily project status reports. Maintain safe and clean working environment by enforcing API standards. 	

ADMINISTRATIVE POSITIONS

i. **DIRECTOR, Office of Research Innovation & Commercialisation**, Mehran University of Engineering & Technology, Jamshoro (05-04-2024 till to-date)

Responsibilities

- Develop and implement strategies to promote research, innovation, and commercialization activities within the University.
- Identifying funding opportunities and partnerships to support research projects.
- Overseeing the intellectual property and technology transfer processes.
- Managing a team to support researchers and innovators in their projects.
- Collaborating with industry partners to bring research ideas to market.
- Ensuring compliance with relevant regulations and policies related to research and commercialization.
- Building relationships with stakeholders, including government agencies, industry partners, and academic institutions.
- Monitoring and evaluating the success of research and commercialization initiatives.
- Supporting the development of a culture of innovation and entrepreneurship within the organization.

ii. **ADVISOR to Vice Chancellor on Student Affairs and Career Counselling**, Mehran University of Engineering & Technology, Jamshoro, Pakistan. (22-02-2017 till 16-04-2024)

Responsibilities

- Lead, direct, and administer overall functions of student counselling, hostel residence, student societies and discipline in order to enhance the quality of student life both in and outside of the classroom.
- Supervise the team of Class advisors to help students to recognize and achieve their educational goals, help students to examine University programs, recognize their academic strengths, and opt for future career.
- Supervise the team of counsellors to help students with job-related issues, such as finding work, setting career goals, and dealing with stress on the job.
- Provide proactive support and capacity building services to promote co- curricular activities to enhance interpersonal skills of the students.

iii. **Co-Director, Postgraduate Studies** Mehran University of Engineering & Technology, Jamshoro, Pakistan. (22-01-2015 to-21-02-2017)

Responsibilities

- Implementing postgraduate education policy as determined by the University and ensuring compliance with university policies and regulations.
- Schedule, Conduct Exams of all Masters and Ph.D. Programs, Overall monitor and supervise the team of Exam- Invigilators and Exam-Head Invigilators
- To arrange pre-admission test and interviews for prospective Postgraduate.
- To monitor the progress of Postgraduate students and deal with any issues arising in connection to their postgraduate research studentship.

viii. **Quality Coordinator** at Dean Faculty of Science Technology and Humanities, Mehran University of Engineering & Technology, Jamshoro, Pakistan. (11-09-2006 to 02-11-2007)

Responsibilities

- To Implement ISO-9001 standards at the faculty and the departments' level.
- Ensuring that all quality standards are delivered, and the customer needs are met at their high quality.
- Interact with the department heads and departmental quality coordinators for the implementation of ISO standards and proper documentation of all functions. Set and document workflow/ procedures for all departments.
- Monitor effectiveness of the Quality Assurance process/ workflow for continuous quality improvement.

ix. **Warden (14-02-2004 to 25-07-2005)** Mehran University of Engineering & Technology, Jamshoro, Pakistan (Foreigner Students' Hostel)

Job Responsibilities

- To manage and monitor students' activities and provide basic facilities to the hostel residents.
- Welfare of students, provide pastoral support to the students.
- Actively participate to enhance the social and cultural life of the Hostel.

RESEARCH AND TEACHING EXPERIENCE

Teaching Assistant
(14-02-2008 to 10-12-2011)

During My PhD Studies at the University of Nottingham (UoN), England, UK, I worked as Teaching Assistant in the School of Mechanical, Materials & Manufacturing Engineering, UoN. Where my role was:

- To teach CAD software Pro-E Wildfire 2.0 to the undergraduate students of Mechanical Engineering.
- To conduct solid Mechanics Lab at undergraduate Level.

Research and Teaching Experience at the Department Mechanical Engineering, Mehran University of Engineering & Technology, Jamshoro, Pakistan	
Professor, (27-10-2016 till to-date)	<ul style="list-style-type: none"> • Taught subjects such as: "Engineering Materials", Engineering Drawing and Graphics", "Manufacturing Processes", "Computer Aided Design", Design for Manufacturing & Assembly" and "Automobile Engineering" • Initiating research activities, guide students for research, research proposal writing for research funding • Students counselling for academic matters and career decisions • Provide professional consultative services to government, industry and private individuals. • Conducting research, fieldwork, and investigations, and writing up reports. • Publishing research, attending conferences, delivering presentations, and national and the international universities for learning opportunities and networking with others researchers.
Associate Professor, (15-04-2013 to 26-10-2016)	
Assistant Professor, (16-07-2012 to 14-04-2013)	
Lecturer / Lab. Lecturer, (27-09-2003 to 15-07-2012)	
Demonstrator, (24-04-2003 to 26-09-2003)	

SERVICES RENDERED TO GOVERNMENT AND EDUCATIONAL ORGANISATIONS

- i. **Curriculum Developer to-Date) NAVTTC, GIZ, and STEVTA (2014 till**
- Responsibilities**
- ✓ Responsible for working as part of a team of curriculum developers, Curriculum reviewers and learning technologists.
 - ✓ Ensuring the accuracy and standardization of all training materials and content.
 - ✓ Developing high-quality curriculum in the areas I am responsible for.
 - ✓ Reviewing vocational coursework to ensure alignment with curriculum standards.
 - ✓ Producing accurate, high-quality documentation within specified timeline.
 - ✓ Setting learning outcomes and the learning objectives.
 - ✓ Design content delivery and assessment methods
 - ✓ Determine ways to integrate technology in classrooms.
- ii. **Chairman Technical Committee (Mechanical Transport MTC-06) Pakistan Standards & Quality Control Authority Government of Pakistan (Ministry of Science and Technology) Standardization Wing (12-10-2017 till to-Date)**
- Role**
- ✓ Design Mechanical Division Quality Standard of "Mechanical Transport" as PAKISTAN NATIONAL STANDARDS.
 - ✓ Revision of Mechanical Division Quality Standard for further implementation in the Industries of Pakistan.
 - ✓ To advise the Government on standardization policies, programs, and activities to promote industrial efficiency and development, as well as for consumer protection.
- iii. **Urdu Language Teacher AL-ZAHRA FOUNDATION, Nottingham UK (07-06-2008 to 01-01-2012)**
- Responsibilities**
- During my stay at Nottingham England, I worked as "Urdu Language Teacher" in a Community Centre of Pakistani-British Nationals' named as "Al-Zahra Foundation". Where my responsibilities were to teach Urdu Language to British national Pakistani youth (week-end Classes) at Nottingham, England UK. In recognition to my services, I was honoured/awarded with a gold medal and a certificate of appreciation.

RESEARCH PROJECTS SUPERVISION AND AUTHORSHIP OF RESEARCH ARTICLES:

PhD Student Projects	03 (In-Process)
M.Eng Student Projects	43 (Completed), 02 (In-Process)
Journal Papers Published	60+
Conference Papers Presented	25+

SOFTWARE SKILLS

MS Word	MS PowerPoint	CREO	MATLAB	MS Visio
MS Excel	Ansys	Solid-works	COMSOL Multi-Physics	MS Access

MEMBERSHIPS

- Member Senate, Mehran University of Engineering and Technology, Jamshoro
- Member Syndicate, Mehran University of Engineering and Technology, Jamshoro
- Pakistan Engineering Council Lifetime Membership as Professional Engineer.
- Accreditation Council Member for the Pakistan Engineering Council Accreditation of Higher Education Institution.
- National Curriculum Review Committee member for Mechanical Engineering, and Energy Systems Engineering Programs under Higher Education Commission Pakistan.
- Member Expert Team, Chartered Inspection and Evaluation Council, Government of Sindh
- Member, Academic Council, Mehran University of Engineering and Technology, Jamshoro
- Member, Board of Studies, Mechanical Engineering Program Mehran University of Engineering and Technology, Jamshoro
- Member, Board of Studies, Energy Systems Engineering Program, Mehran University of Engineering and Technology, Jamshoro
- Member, Board of Studies, Nano Materials Program, Centre of Excellence in Nanotechnology and Materials Mehran University of Engineering and Technology, Jamshoro

LEAD FUNDED PROJECTS (COMPLETED)

S.#.	Project Title	Funded By	Funded Amount	Year of Award	Completion Year
01	Design and Development of Low Cost Stair Lift	EPICS of IEEE	USD 9800	Jan-2023	Jan-2024
02	Condition Monitoring of High Voltage Line Insulators Using Deep Learning Method	Sindh Higher Education Commission (HEC) under Sindh Research Support Program 2021-2022.	PKR 1.52 Million	July-2022	June-2024
03	Condition Monitoring Systems Research Lab", PKR 40 Million Funded by HEC Pakistan under the project National Centre for Robotics and Automation.	Higher Education Commission (HEC), Pakistan	PKR 40 Million	2019	2022
04	To design and Fabricate Wirelessly controlled Track recording vehicle.	ICT R&D in National Gross roots Research Initiative Program	PKR 82K	2022	2022
05	Design Analysis and Fabrication of Banana Waste Shredder.	ICT R&D in National Gross roots Research Initiative Program	PKR 60.64K	2021	2021
06	Edify Engineering, Consultancy Project under Research Incubation in Public sector University	Information Science & Technology Department, Government of Sindh (UN's Sustainable Development Goals (SDGs), Vision 2025)	PKR 0.6 Million	2017	2017