



Waheed Anjum Mughal

MEng. Design and Development in
Automotive and Mechanical
Engineering

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Mechanical Engineer and M.Eng. graduate specializing in Automotive and Mechanical Engineering with industrial experience in fuel cell system testing, validation, assembly and electrochemical characterization. Skilled in **EIS**, **MATLAB**, **CANoe**, **SAP DM** and test bench development. Seeking a full-time role in automotive testing, fuel cell systems or validation engineering.

SKILLS

• **Testing Tools:**

- Vector CANape
- CANoe
- HIL Hardware in the Loop
- INCA
- ProCos
- Acquire FRT
- ZView 4

- **Programming Skills:**
- MATLAB & Simulink

• **Digital Skills**

- Microsoft Office
- Microsoft Excel
- Azure DevOps
- BI front-end software
- Power Bi
- Tableau
- SAP Digital Manufacturing
- SAP Enterprise Resource Planning & Product Lifecycle Management

EXPERIENCE
04.2026 – 09.2026

Scientific Research Assistant / Master Thesis Student
INEM (Institut für nachhaltige Energietechnik und Mobilität) Hochschule Esslingen.

- Electrochemical Impedance Spectroscopy (EIS)
- Proton Exchange Membrane (PEM) Characterization
- Nafion 212 Conductivity Testing
- Scribner 740 Membrane Test System (MTS)
- Nyquist Plot Interpretation
- Equivalent Circuit Modeling
- Through-Plane Conductivity Measurements
- Fuel Cell Water Management System analysis
- Experimental Design & Validation
- MATLAB & Microsoft Excel Data Analysis

EXPERIENCE
12.2025 – 03.2026

Intern Fuel Cell Bipolar Plates Testing Zentrum für Brennstoffzellen Technik GmbH Duisburg.

- Supported fabrication of PEM fuel cell bipolar plates via hot pressing with variable embossing configurations by using DOE approach
- Optimized flow-field geometries by adjusting embossing parameters to meet dimensional and functional requirements
- Performed high-precision thickness and surface measurements using FRT optical metrology systems in laboratory.
- Perform laboratory analysis and testing surface integrity to detect micro-cracks, defects and non-uniformities in bipolar plates
- Generated structured experimental datasets and measurement documentation for research traceability Contributed to development and execution of experimental procedures for manufacturing parameter studies
- Operated hot pressing machine and laboratory equipment for BPP production and testing workflows
- Prepared detailed inspection and testing reports including measurement data and quality assessment results.

EXPERIENCE
07.2024 – 09.2025

Intern Fuel Cell System Testing
Cellcentric GmbH

- Worked within the Assembly and Testing department to recommission and improve the operation of test benches for Insitu-testing of fuel cell components.
- Provides support in setting up the test infrastructure and carrying out test setup for Fuel Cell Systems.

- **Testing Skills**

- Test Strategies
- Performance Analysis
- Functional Testing
- Azure Data Bricks

- **LANGUAGES**

- Deutsch (B1)
- English (C1)
- Arabic

- **HOBBIES**

- Travelling
- Reading
- Paragliding

EXPERIENCE
09.2015 – 08.2021

- Develop test procedure and test protocols for SAP DM documentation
- Analyzing test results, documenting bugs and creating reports for internal and external stakeholders.
- Analyze the test results and make the Fuel Cell System more robust and set the End of Life.
- StackHei Testing of Stack Assembly Module SAM.
- High Voltage Testing of Stack Assembly Module SAM
- Leakage Testing of Stack Assembly Module and Fuel Cell System
- Factory Acceptance Test of Fuelcell System and End of Line testing.
- Complete Flashing of Fuelcell Control Unit, Fuelcell Interface Unit , Electric Turbo Charger, High Voltage Relay Box in FuelCell System.

Mechanical Engineer Testing
Quader Al Kher Est. Jeddah, Saudi Arabia

- Functional testing of car heaters using the Vector Tool CANape
- Development of the Car body, Car Battery Development vehicle suspension system and car chassis.
- Developing and designing different software and test tool Equipment (Solid Works, CAD CAM Vector tool chain (CANoe)
- Build individual projects with a larger team, also worked independently on my specific duty
- Maintained accurate documentation of tested device and data analysis of the measured heaters.

EDUCATION
09-2021 – 09.2026

MEng. Design and Development in Automotive and Mechanical Engineering
Hochschule Esslingen, Germany

09-2010 – 06.2014

BS Mechanical Engineering
The University of Lahore, Pakistan

**Certificates
&
Trainings**

Fundamentals of Fuelcell System
Cellcentric GmbH.

Electric Vehicle and Mobility
École des Ponts ParisTech

Projects

Creation of dashboard for FAT Testbench by using Tableau software.
EU Production shop floor Dashboard by using Power Bi.
Production order and Performance dashboard by using SAPDM digital manufacturing software.