



SHEHROZE TAHIR KHAN

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CAREER OBJECTIVE

A self-motivated mechanical engineer with diverse experience in industry and academia, seeking a challenging position in a reputed and progressive R & D organization that provides career growth.

RESEARCH INTERESTS

- ❖ Fabrication and characterization of Micro-Electro-Mechanical Systems (MEMS) devices.
- ❖ Stretchable and flexible electronics.
- ❖ Mechanical characterization techniques related to stretchable and flexible thin film devices.
- ❖ Triboelectric and piezoelectric nanogenerators.
- ❖ Smart materials.

ACADEMIC CREDENTIALS

❖ **Doctor of Philosophy (Ph.D.)**

Department of Mechanical Engineering, NED University of Engineering and Technology, Karachi, 2023

Thesis: Dynamic Mechanical Characterizations of Thin Film Materials for Micro-Electro-Mechanical Systems.

❖ **Master's in Engineering Management (M.E.M.)**

Department of Industrial and Manufacturing Engineering, NED University of Engineering and Technology, Karachi, 2015.

❖ **Bachelor of Engineering (B.E.)**

Department of Mechanical Engineering, NED University of Engineering and Technology, Karachi, 2013.

PROFESSIONAL EXPERIENCE

ASSISTANT PROFESSOR MECHANICAL ENGINEERING DEPARTMENT NED University of Engineering & Technology

November 2023 to Present

- Teaching the undergraduate course of Mechanical Vibrations to final-year mechanical engineering students.
- Conducting lab of Machine Design and Vibration.
- Propose and supervise undergraduate final year projects related to mechatronics and stretchable and flexible thin film devices.

LECTURER MECHANICAL ENGINEERING DEPARTMENT NED University of Engineering & Technology

Sep 2016 to November 2023

- Taught Engineering Drawing, Engineering Mechanics, Computer Aided Engineering Graphics, Production Engineering-I, Machine Design, Mechanics of Machines and Mechanical Vibrations.
- Propose and supervise undergraduate final year projects related to mechatronics and

stretchable and flexible thin film devices.

- Supervising students' academic matters as a second-year class advisor.
- Department coordinator for Summer Session 2017 Courses.

PRODUCTION ENGINEER GALVANIZING PLANT-I International Steels Limited

Jul 2014 to Sep 2016

Led an operations team of twelve people including operators, supervisors, and contract staff my core responsibilities are as follows:

- Oversee quality control and safety matters on the plant.
- Perform root-cause analysis to solve operation and quality-related problems.
- Carry out Hazard Identification of the plant through Risk Assessments.
- Plan, schedule, and supervise workforce as well inventory to successfully meet the production targets. Also, supervise the maintenance team and furnace staff in shift operations.
- Planning and procurement of raw materials and consumables.

MECHANICAL ENGINEER CRM-I COMPLEX International Steels Limited

Jan 2014 to Jun 2014

Overlooked the operations and maintenance of the Tension Leveler and Skin Pass Mill with the following responsibilities:

- Carry out preventive maintenance of the different plants.
- Provide engineering support to the operations team in achieving required goals.
- Assist in the development of operational standards and procedures.
- Provide engineering support to the operations team in achieving required goals.

OTHER OFFICIAL ASSIGNMENTS

Lab In-Charge, Material Testing Lab, Mechanical Engineering Department, NEDUET (Sep 2023 – Present).

PROJECTS

❖ **At NEDUET:**

- Currently working on the Digitalization of Hydraulic Spring Testing Machine funded by Ministry of Science and Technology (MoST) Endowment Fund.
- Design and fabrication of thin film vibration testing machine.
- Design and fabrication of a multi-axis solar tracking system.
- Design and fabrication of computer-controlled thin film tensile tester.
- Design and fabrication of a two-axis CNC hot wire foam cutter.
- Design, fabrication, and development of Internal Combustion Engine Test Bench.
- Automation of a household generator on different fuels.

❖ **At International Steels Limited:**

- Installation and commissioning of chemical coater system at Galvanizing Plant-I.
- Up gradation of SCADA at Galvanizing Plant-I.
- Implementation of 5S methodology at Galvanizing Plant-I.

PUBLICATIONS

❖ **Peer-Reviewed Journal Articles:**

- **S. T. Khan**, M. Akhtar, M. Mehdi, N. Malik, S. Hashmi, and Faaz Butt (2022). Characterizations of a Cost-Effective Single Component Polymer for Stretchable and Flexible Microelectromechanical Systems Applications. *Journal of Testing and Evaluation*, 495-508. DOI: doi.org/10.1520/JTE20220161
- **S. T. Khan**, M. Mehdi, and T. Jamil (2023). Electromechanical characterizations of PEDOT:PSS and its nanocomposite thin films on a cost-effective polymer substrate for microelectromechanical systems (MEMS) applications. *Express Polymer Letters*, 806-818. DOI: doi.org/10.3144/expresspolymlett.2023.60
- **S. T. Khan**, M. Mehdi, T. Jamil, and A. Qadir. Dynamic electromechanical characterizations of poly(vinylidene fluoride) based nanocomposite films on ultra-low modulus polymer substrate. *Journal of Applied Polymer Science*, e56314. DOI: doi.org/10.1002/app.56314

❖ **Conference Proceedings:**

- **S. T. Khan**, M. Mehdi, T. Jamil, and A. Qadir (March 2024). Fabrication and characterizations of a low-cost thermal actuator for micro-electro-mechanical systems (MEMS) applications. In *Proceedings of 13th International Mechanical Engineering Conference - Industry 4.0 and Allied Digital Trends: Current Perspective and Future Direction*, NED University of Engineering and Technology, Karachi, Pakistan.
- A. Qadir, **S. T. Khan**, M. Mehdi, M. A. Shah (March 2024). Piezoelectric Testing Of Commercial PvdF Thin Film Sensor. In *Proceedings of 13th International Mechanical Engineering Conference - Industry 4.0 and Allied Digital Trends: Current Perspective and Future Direction*, NED University of Engineering and Technology, Karachi, Pakistan.
- M. U. Yousuf, M. Umair, and **S. T. Khan**, (December 2018). Optimum Tilt Angles for Energy Policy Making of a City-Case Study of Karachi. In *Proceedings of 1st International Conference on Carbon Neutral Built Environment*, NED University of Engineering and Technology, Karachi, Pakistan.

SOFTWARE SKILLS

- ABB Process Graphic Editor
- AutoCAD 2015
- Origin Pro
- LabView VISA
- MS-Project
- Minitab
- Arduino IDE

SKILLS & COMPETENCES

- Good knowledge of Hydraulic and Pneumatic Systems.
- Good knowledge of working and development of entry-level embedded systems.
- Good communication skills.
- Quick learner with a passion for continuous improvement.

ACHIEVEMENTS

- Won research grant of PKR 2.3 million for digitalizing hydraulic spring testing machine.
- Successfully organized Eight Mechanical Engineering Conference (IMEC-2018) as Conference Coordinator, held at I.E.P. Center, Karachi.

- Successful implementation of 5S methodology on Galvanizing Plant – I as an assignment in my Master’s Degree which provided better visual control of not only raw materials but also the tools and accessories related to different parts of the plant.
- Train and help others within the organization about lean manufacturing methods.
- Develop Standard Operation Procedures (SOPs) for various equipment of the plant for the operator’s reference.

PROFESSIONAL MEMBERSHIPS

- Pakistan Engineering Council (PEC).
- Institute of Engineers Pakistan (IEP).