

DR. TARIQ REHMAN

Assistant Professor

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PROFESSIONAL PROFILES

Google : <https://scholar.google.com/citations?user=yITvIAAAAAAJ&hl=en>

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PROFESSIONAL SUMMARY

PhD in Electrical Engineering with extensive experience in teaching, research, and innovation. Demonstrated excellence in mentorship and academic performance, complemented by expertise in quality assurance and institutional performance evaluation.

PROFESSIONAL EXPERIENCE

Deputy Director, Quality Enhancement Cell (QEC) NED University of Engineering & Technology, Karachi	March 2023 – to date
Assistant Professor, Department of Electronic Engineering NED University of Engineering & Technology, Karachi	May 2020 – to date
Lecturer, Department of Electronic Engineering NED University of Engineering & Technology, Karachi	Dec 2009 – May 2020

EDUCATIONAL CREDENTIALS

Doctor of Philosophy (Electrical Engineering) Universiti Teknologi Malaysia (UTM), Malaysia	Feb 2015 – May 2020
Master of Engineering (Electronic) NED University of Engineering & Technology, Karachi	July 2009 – Dec 2012
Bachelor of Engineering (Industrial Electronics) NED University of Engineering & Technology, Karachi	Jan 2005 – Dec 2008
Higher Secondary Certificate (Pre-Engineering) Board of Intermediate Education Karachi	Aug 2002 – Aug 2004
Secondary School Certificate (Science) Board of Secondary Education Karachi	April 2000 – July 2002

RESEARCH PUBLICATIONS

Journal Papers

1. Sri Abinesh Pillal Muruges, Ili Najaa Aimi Mohd Nordin, Ahmad Athif Mohd Faudzi, Nurulaqilla Khamis, Noraishikin Zulkarnain, and **Tariq Rehman**. "IoT-Enabled Instrumented Glove for Real-Time Monitoring of Finger Pinch Strength." *Journal of Advanced Research in Applied Sciences and Engineering Technology* 62, no. 2 (2024): 220–230.
2. Mohamad Khairul Aiman Daud, Ili Najaa Aimi Mohd Nordin, Tuan Noor Hasanah Tuan Ismail, Effendy Adam, Noraishikin Zulkarnain, Muhammad Rusydi Muhammad Razif, and **Tariq Rehman**. "Development of Smart Chopper Composting Monitoring System." *Journal of Advanced Research in Applied Sciences and Engineering Technology* 42 no. 2 (2024): 197–208.
3. Rizwan Aslam Butt, **Tariq Rehman**, and Muhammad Amir Qureshi. "A Smart IoT-Enabled Cage for the Farming of Ground Birds." *Engineering Proceedings* 46, no. 1 (2023): 26.
4. **Tariq Rehman**, Asif Ahmed, Muhammad Shahzad Siddiqi, Asad Hayat, and Tehniyat Saeed. "Slum Terrain Mapping Using Low-Cost 2D Laser Scanners." *Elektronika ir Elektrotechnika* 29, no. 2 (2023): 19-27.
5. Farah Afiqa Mohd Ghazali, Md Nazibul Hasan, **Tariq Rehman**, Marwan Nafea, Mohamed Sultan Mohamed Ali, & Kenichi Takahata. "MEMS Actuators for Biomedical Applications: A Review." *Journal of Micromechanics and Microengineering* 30, no. 7 (2020): 073001.
6. Muhammad Rusydi Muhammad Razif, Go Ling Zhi, Ili Najaa Aimi Mohd Nordin, Hairulazwan Hashim, Amirul Syafiq Sadun, and **Tariq Rehman**. "Bellow Soft Gripper for Agriculture." *International Journal of Advanced Trends in Computer Science and Engineering* 9, no. 1.4 (2020).
7. Muhammad Rusydi Muhammad Razif, Ahmad Athif Faudzi, Ili Najaa Aimi Mohd Nordin, **Tariq Rehman**, and Dyah Ekashanti Octorina Dewi. "Two-Chambers Soft Actuator Bending and Rotational Properties for Underwater Application." *Indonesian Journal of Electrical Engineering and Computer Science* 16, no. 2 (2019): 669-77.
8. **Tariq Rehman**, Marwan Nafea, Ahmad Athif Faudzi, Tanveer Saleh, and Mohamed Sultan Mohamed Ali. "PDMS-Based Dual-Channel Pneumatic Micro-Actuator." *Smart Materials and Structures* 28, no. 11 (2019): 115044.
9. Krishna Veni Selvan, **Tariq Rehman**, Tanveer Saleh, and Mohamed Sultan Mohamed Ali. "Copper–Cobalt Thermoelectric Generators: Power Improvement through Optimized Thickness and Sandwiched Planar Structure." *IEEE Transactions on Electron Devices* 66, no. 8 (2019): 3459-65.
10. **Tariq Rehman**, Ahmad Athif Mohd Faudzi, Dyah Ekashanti Octorina Dewi, and Mohamad Sultan Mohamad Ali. "Design, Characterization, and Manufacturing of Circular Bellows Pneumatic Soft Actuator." *The International Journal of Advanced Manufacturing Technology* 93 (2017): 4295-304.
11. **Tariq Rehman**, Ahmad Athif Mohd Faudzi, Dyah Ekashanti Octorina Dewi, K Suzumori, Muhammad Rusydi Muhammad Razif, and Ili Najaa Aimi Mohd Nordin. "Design and Analysis of Bending Motion in Single and Dual Chamber Bellows Structured Soft Actuators." *Jurnal Teknologi* 78, no. 6-13 (2016): 17-23.
12. Ili Najaa Aimi Mohd Nordin, Ahmad Athif Mohd Faudzi, MZ Kamarudin, Dyah Ekashanti Octorina Dewi, **Tariq Rehman**, and Muhammad Rusydi Muhammad Razif. "Grip Force Measurement of Soft-Actuated Finger Exoskeleton." *Jurnal Teknologi* 78, no. 6-13 (2016): 25-30.

Conference Papers

1. Marwan Nafea, Mohamed Sultan Mohamed Ali, **Tariq Rehman**, and Kamyar Mehranzamir. "Geometrical Analysis of Diffuser-Nozzle Elements for Valveless Micropumps." *IEEE International Conference on smart instrumentation, measurement and application (ICSIMA)*, 2019.
2. Marwan Nafea, Zaharuddin Mohamed, Mohamed Sultan Mohamed Ali, Kamyar Mehranzamir, and **Tariq Rehman**. "Hybrid PSO-Tuned PID and Hysteresis-Observer Based Control for Piezoelectric Micropositioning Stages." *IEEE International Conference on Smart Instrumentation, Measurement and Application (ICSIMA)*, 2019.
3. **Tariq Rehman**, Ahmad Athif Faudzi, Marwan Nafea, and Mohamed Sultan Mohamed Ali. "PDMS-Based Dual-Channel Pneumatic Microactuator Using Sacrificial Molding Fabrication Technique." *20th International Conference on Solid-State Sensors, Actuators and Microsystems & Eurosensors XXXIII (TRANSDUCERS & EUROSensors XXXIII)*, 2019.
4. **Tariq Rehman**, Ahmad' Athif Mohd Faudzi, Dyah Ekashanti Octorina Dewi, and Mohamed Sultan Mohamed Ali. "Finite Element Analysis for PDMS Based Dual Chamber Bellows Structured Pneumatic Actuator." *17th Asia Simulation Conference, AsiaSim 2017*, Melaka, Malaysia, August 27–29, 2017, Proceedings, Part I 17, 2017.

RESEARCH & TEACHING RESPONSIBILITIES

PhD Scholars (02) under my co-supervision

S.#	Name of Student	Research Title	Status
1.	Ms. Tehniyat Saeed	Design and development of efficient 3D colored mapping system using low-cost laser scanning and sensor fusion technologies	Research Phase
2.	Ms. Nurul Hasyimah Binti Mohd Mustapha	A new soft actuator design for loose palm oil fruit collector application driven by pneumatic control	Research Phase

M.Eng. Thesis (08) under my supervision

S.#	Name of Student	Research Title	Completion
1.	Mr. Deepak Lal	AI-based Model Predictive Control for Leak Detection and Control in Gas Pipelines	on-going
2.	Ms. Tazeen Liaquat	Development of Multilevel Inverter with MPPT Controller for Photovoltaic Systems	Aug 2024
3.	Ms. Fatima Riaz	AI-Based Energy Optimization Using Smart Camera	Aug 2024
4.	Mr. Aizaz Ahmed	Developing an Architecture SCADA/DCS for Process Industry	Jan 2024
5.	Mr. M. Khizer	Analysis of the Effect of Air Jet Assist Turbocharging on 1980 KW Islanded Gen-set with Stochastic Load Profile	Jan 2024
6.	Mr. Wahaj Shahid	Simulation-Based Optimization of an Energy Management System for Industrial Facilities	Jan 2024
7.	Mr. M. Hasnain Ansari	Analysis of the Effect of Air Jet Assist Turbocharging on 8.7 MW Islanded Gen-set with Stochastic Load Profile	Jan 2023
8.	Mr. M. Kamran Shaikh	Developing an architecture of SCADA/DCS Incorporating Industry 4.0 for Process Industry	Sept 2022

Courses Taught

Undergraduate	Postgraduate
1. Robotics	1. Introduction to Mechatronics
2. Industrial Electronics	2. Sensors and Systems
3. Power Electronics	3. Measurement & Calibration of Electronic Systems
4. Instrumentation and Control	4. Data Acquisition and Microcontroller
5. Electronic Devices and Circuits	5. Industrial Control Systems
6. Digital Electronics	6. Applied Programmable Logic Control
7. Basic Electronics	7. Adaptive Control Systems
8. Fundamentals of Analog and Digital Electronics	8. Optimal Control Systems
	9. Random Variables and Stochastic Process
	10. Advanced Digital Electronics & Interfacing
	11. Introduction to Micro-electro-mechanical Systems

- Supervised numerous B.Eng. Final Year Design Projects (FYDPs).
- Served as B.Eng. class advisor, laboratory coordinator and incharge.

DEPUTY DIRECTOR, QEC RESPONSIBILITIES

- Coordinated QEC functions in line with regulatory, ISO, QAA–HEC and stakeholder requirements.
- Contributed to the development and implementation of university-wide QA policies, QMS, Quality Policy, Quality Plan and related procedures.
- Reviewed and processed Document Change Requests (DCRs) to support continuous improvement.
- Conducted/supported internal, external (Surveillance, Recertification) and Health, Safety & Environment audit including follow-up actions and compliance reporting.
- Conducted training sessions on Quality Management Systems (QMS) and Health, Safety & Environment (HSE) Management Systems to build institutional capacity.
- Managed Board of Review (BoR) processes at both departmental and university levels and served as a Board of Faculty (BoF) member, contributing to academic quality decisions.
- Supported university ranking, QEC rating, KPI monitoring, and submission of Yearly Progress Reports.
- Facilitated NOC reviews for Master's and PhD programs through HEC and internal evaluations.
- Strengthened quality assurance functions in affiliated/constituent institutions.
- Performed additional tasks assigned by director QEC and senior management with flexibility and commitment.

QEC Trainings Conducted

S.#	Training Title	Date
1.	How to Conduct Audit (Accredited Colleges)	02 Oct 2025
2.	Health, Safety & Environment Management	27 Aug 2025
3.	Health, Safety & Environment (Experiment Based)	18 Nov 2024
4.	Quality Management System	25 Sept 2024
5.	How to Achieve Sustainable Development Goals	22 April 2024
6.	Workshop on design and conduct of effective assessments	17 April 2024
7.	Quality Management System: A process-based & Risk Assessment Approach	03 Aug 2023

GRANTS RECEIVED/ FUNDED PROJECTS

S.#	Project Title	Grant/Fund	Amount (PKR)	Contribution
1.	PhD Scholar Thesis: Design and development of efficient 3D colored mapping system using low-cost laser	NED Research Fund–2025	0.5 million	Co-supervisor
2.	Sindh HEC Research Support Program: Smart IoT-enabled Ground Bird Farming	HEC-SRSP 2022–2024	1.8 million	Co-Principle Investigator
3.	B.Eng. FYDP: Smart Cluster Development for EVs	DICE-FYDP Grant 2023-24	100,000	Supervisor
4.	B.Eng. FYDP: Smart Cluster Development for EVs	DICE-FYDP Grant 2022-23	100,000	Supervisor
5.	B.Eng. FYDP: Autonomous Helicopter Navigation	National Grass Root (ICT-R&D) – 2013	100,000	Supervisor

AWARDS & FINANCIAL RECOGNITIONS

S.#	Award	Amount (PKR)	Sponsor	Purpose / Paper Title	Date
1.	Publication Reward	25,000	NEDUET	Slum Terrain Mapping Using Low-Cost 2D Laser Scanners (2023)	09 Oct 2023
2.	Publication Reward	100,000	NEDUET	Micro-Electromechanical System Actuators for Biomedical Applications: A Review (2020)	04 Jan 2021
3.	Publication Reward	100,000	NEDUET	PDMS-based Dual-Channel Pneumatic Micro-Actuator (2019)	04 Jan 2021
4.	Publication I Reward	50,000	NEDUET	Copper–Cobalt Thermoelectric Generators: Power Improvement Through Optimized Thickness and Sandwiched Planar Structure (2019)	04 Jan 2021
5.	Publication Reward	50,000	NEDUET	Correction to: Design, Characterization, and Manufacturing of Circular Bellows Pneumatic Soft Actuator (2018)	04 Jan 2021
6.	PhD Scholarship	4.25 million	NEDUET	Doctoral studies at Universiti Teknologi Malaysia (2015-20)	05 Nov 2014

HONORS, ACTIVITIES AND TRAININGS

Honors

1. Earned the title of “NED-Approved PhD Supervisor” for 2024–2027 upon completing the “Effective PhD Supervision” training conducted by ASRB and QEC-NEDUET. 07–14 Oct 2024
2. Recognized as an “HEC Approved PhD Supervisor” in the discipline of “Engineering & Technology” for 2021-24 by HEC Islamabad. 05 March 2021
3. Best Paper Award Finalist, 17th Asia Simulation Conference, Melaka, Malaysia 27–29 Aug 2017
4. Earned Professional Development Certificate: Professional Competency Enhancement Program for Teachers (PCEPT), HEC Islamabad. 08–30 Dec 2011

Activities (Conferences/Seminars/Participation/Presentations)

S.#	Activities	Date
1.	Attended the 2nd National Conference on “Safety Assessment”, PNRA, Karachi	11–12 Nov 2025
2.	Participated in 4th Colloquium at ILMA University, Karachi	17 Oct 2025
3.	Participated as Reviewer in 22th IBCAST Conference	19–22 Aug 2025
4.	Presented at 5th International Conference of PNQAHE & AGM, Lahore	14–16 Apr 2025
5.	Attended seminar “Revamped QA Framework: Collaborative Pathways to SDGs”, QEC-NEDUET, Karachi	05 Jun 2024
6.	Attended 4th International Conference of PNQAHE & AGM, Islamabad	3–5 Mar 2024
7.	Attended seminar “Ensuring Quality in Higher Education: A Prospect of HEC Graduate Policy 2023”, QEC-NEDUET, Karachi	05 Oct 2023
8.	Participated as Reviewer in 20th IBCAST Conference	22–25 Aug 2023
9.	Participated as an Organizer & Session Chair in INTERACT-2023, NEDUET, Karachi	15–16 Mar 2023
10.	Participated as Session Chair in 8th IEEC-2023, NEDUET & IEP, Karachi	25–26 Aug 2023
11.	Participated as Session Chair in 7th IEEC-2022, NEDUET & IEP, Karachi	25–26 Mar 2022
12.	Presented at TRANSDUCERS & EUROSENSORS XXXIII, Berlin, Germany	23–27 Jun 2019
13.	Attended workshop “Managing Research Towards GOT”, UTM, Malaysia	08 Mar 2017
14.	Attended workshop “How to Publish in High Impact Journals”, UTM, Malaysia	09 Jan 2017
15.	Attended workshop “Student–Supervisor Relationship”, UTM, Malaysia	10 Jan 2017
16.	Attended workshop “CAD & 3D Printing”, UTM, Malaysia	06–07 Mar 2015
17.	Presented at 7th Electrical Engineering Research Colloquium, UTM, Malaysia	24 Jun 2015
18.	Presented at IEEE-OES Student Research Colloquium, UTM, Malaysia	16 Oct 2015
19.	Participated in 1st Pak-German Workshop on Field Robotics, LUMS, Lahore	28–29 Oct 2011

Trainings Completed

S.#	Trainings	Date
1.	Lead Auditor Training Course on Quality Management Systems (QMS) ISO 9001:2015, Lloyd's Register Quality Assurance	13-16 Oct 2025
2.	Quality Management System, QEC-NEDUET , Karachi	02 Oct 2024
3.	Root Cause Analysis, QEC-NEDUET , Karachi	26 Jun 2024
4.	Odoo, QEC-NEDUET , Karachi	24–28 Mar 2024
5.	Power BI, QEC-NEDUET , Karachi	11–22 Mar 2024
6.	1st National Certified Reviewers (NCR) Training (Module I), Sindh HEC, Karachi	11–13 Dec 2023
7.	Health and Safety Management System, QEC-NEDUET , Karachi	29 Nov 2023

MEMBERSHIP

- Registered Engineer, Pakistan Engineering Council (PEC).