Dr. Tariq Rehman

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	All	Since 2020
Citations	284	255
h-index	8	7
i10-index	6	5

Research & Professional Profiles

Google	:	https://scholar.google.com/citations?user=y_ITvlAAAAAJ&hl=en
ORCID	:	https://orcid.org/0000-0003-0953-9259
Scopus	:	https://www.scopus.com/authid/detail.uri?authorId=57190005164
LinkedIn	:	linkedin.com/in/dr-tariq-rehman-94bab528

Professional Summary

PhD in Electrical Engineering with specialization in Soft Robotics. Accomplished educator and researcher with proven expertise in innovation, mentorship, and academic excellence. Skilled in quality assurance and institutional performance evaluation to enhance operational outcomes.

Educational Credentials

Doctor of Philosophy **2015 – 2020**
Electrical Engineering
Universiti Teknologi Malaysia (UTM), Malaysia

Master of Engineering **2009 – 2012**
Electronic Engineering
NED University of Engineering & Technology, Karachi

Bachelor of Engineering **2005 – 2008**
Industrial Electronics Engineering
NED University of Engineering & Technology, Karachi

Higher Secondary Certificate **2002 – 2004**
Board of Intermediate Education Karachi

Secondary School Certificate **2000 – 2002**
Board of Secondary Education Karachi

Professional Experience

Deputy Director **2023 – till date**
Quality Enhancement Cell (QEC)
NED University of Engineering & Technology, Karachi

Assistant Professor **2020 – till date**
Department of Electronic Engineering
NED University of Engineering & Technology, Karachi

Lecturer **2009 – 2020**
Department of Electronic Engineering
NED University of Engineering & Technology, Karachi

Research & Supervision

- **Co-Principal Investigator:** Awarded PKR 1.8 million under Sindh HEC Research Support Programme for the project *"Smart IoT-enabled Ground Bird Farming"* (2022–2024).
- **PhD Co-Supervisor** (2024–ongoing): "*Design and development of efficient 3D colored mapping system using low-cost laser scanning and sensor fusion technologies"* (PhD funding: PKR 0.5 million).
- **Master's Thesis Supervision**:
  1. Developing an Architecture of SCADA/DCS for Process Industry (2023)
  2. Effect of Air Jet Assist Turbocharging on 1980 kW Islanded Gen-set under Stochastic Load (2023)
  3. Simulation-Based Optimization of Energy Management System for Industrial Facilities (2023)
  4. Development of Multilevel Inverter with MPPT Controller for Photovoltaic Systems (2023)
  5. AI-Based Energy Optimization Using Smart Camera (2023)
  6. Effect of Air-Jet Assist Turbocharging on 8.7 MW Islanded Gen-set under Stochastic Load (2022)
  7. SCADA/DCS Architecture Incorporating Industry 4.0 for Process Industry (2022)

Honors & Recognitions

- **PhD Scholarship** (PKR 4.25 million), *Mega-M3 Scheme*-NED University of Engineering and Technology (NEDUET), for doctoral studies at Universiti Teknologi Malaysia (UTM).
- **Best Paper Award Finalist,** 17th Asia Simulation Conference, UTM & Malaysian Simulation Society.
- **Peer Review Recognition**, International Bhurban Conference on Applied Sciences & Technology.
- **Organizer & Session Chair Memento**, 2nd International Conference on Emerging Trends in Electronic and Telecommunication Engineering, NEDUET.
- **Session Chair Mementos,** 7th & 8th International Electrical Engineering Conferences, NEDUET.
- **Participant**, 1st Pak-German Workshop on Field Robotics, Lahore University of Management Sciences.
- **Certificate of Presentation**, 7th Electrical Engineering Research Colloquium, UTM.
- **Professional Development Certificate**, Professional Competency Enhancement Program for Teachers by Higher Education Commission (HEC).
- **Workshop Participation, UTM**: Student–Supervisor Relationship, Research Management, CAD & 3D Printing.
- **Participant,** 1st National Certified Reviewers (NCR) Training, Sindh-HEC.

Academic & Administrative Roles

- Contributed to institutional ranking enhancement through academic program evaluations and performance assessments.
- Led Internal Quality and HSE audits; supported external quality audit processes.
- Participated in academic boards including Board of Faculty, QEC Board of Review, and University Board of Review.
- Conducted faculty and staff training; handled additional tasks assigned by the Director QEC.
- Supervised M.Eng. research and B.Eng. Final Year Design Projects (FYDPs).
- Served as class advisor and PLC lab in-charge for B.Eng. students.

Courses Taught

Undergraduate (B.Eng.) Courses

- Basic Electronics
- Digital Electronics
- Electronic Design and Workshop
- Electronic Devices and Circuits
- Instrumentation and Control
- Industrial Electronics
- Power Electronics

Postgraduate (M.Eng.) Courses

- Introduction to Mechatronics
- Introduction to MEMS
- Sensors and Systems
- Measurement & Calibration of Electronic Systems
- Data Acquisition and Microcontroller
- Industrial Control Systems
- Random Variables and Stochastic Process

Technical Skills

Software:

- Computer Aided Design *(Design SolidWorks®)*
- Finite Element Analysis *(MARC® Mentat)*
- Layout Editor
- Plotting *(Origin)*
- Citation Manger *(Mendeley, EndNote)*
- Microsoft Office Suite *(Excel, Word, PowerPoint)*

Hardware:

- CNC Milling *(Roland® MDX-40A)*
- 3D Printer *(Flashforge® Dreamer)*
- Vacuum desiccator *(PELCO® Mini Hot Vac)*
- Ultrasonic Bath *(Fisherbrand™)*
- Spin Coater *(Laurell® WS-650MZ)*
- Laser Writer *(Heidelberg® µPG-101)*
- Mask Aligner *(MIDAS® MDA-400M-6)*

Research Publications

[1] Sri Abinesh Pillal Murugesh, 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. https://doi.org/10.37934/araset.62.2.220230

[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. https://doi.org/10.37934/araset.42.2.197208

[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. https://doi.org/10.3390/engproc2023046026

[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. https://doi.org/10.5755/j02.eie.33884 (IF: 1.059)

[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. https://doi.org/10.1088/1361-6439/ab8832 (IF: 2.23)

[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). https://doi.org/10.30534/ijatcse/2020/0191.42020

[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.https://doi.org/10.11591/ijeecs.v16.i2.pp669-677

[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.https://doi.org/10.1088/1361-665X/ab4ac1 (IF: 3.453)

[9] 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.* https://doi.org/10.1109/ICSIMA47653.2019.9057345

[10] 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. https://doi.org/10.1109/ICSIMA47653.2019.9057338

[11] 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. https://doi.org/10.1109/TED.2019.2920898 (IF: 2.704)

[12] **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. https://doi.org/10.1109/TRANSDUCERS.2019.8808254

[13] **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. https://doi.org/10.1007/s00170-017-0891-z (IF: 2.496)

[14] **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. https://doi.org/10.1007/978-981-10-6463-0_34

[15] **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. https://doi.org/10.11113/jt.v78.9267

[16] 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. https://doi.org/10.11113/jt.v78.9268

Memberships

- Registered Engineer, Pakistan Engineering Council (PEC) - Electro/11069.

References

- Available upon request.