

Engr. Muhammad Anique Azam

Lecturer and PhD Scholar

NED University of Engineering & Technology, Karachi, Pakistan

anique@neduet.edu.pk (Ext: 2706 - RAC Lab)

 <https://linkedin.com/in/maniqueazam>

 <https://orcid.org/0000-0002-9754-6135>

1. Biography

An early career researcher in unconventional water resources and decentralised water generation. Having worked in proximity to UN bodies, IGOs, federal and local governments, industrialists and academicians, exploring technology-governance consortiums, the incumbent carries intuitive thinking of the water-energy nexus. Also carries course design experience for undergraduate programmes.

2. Academic Qualifications



Doctor of Philosophy (PhD) – *in progress*

2022 – date (GPA 3.93/4.00)

NED University of Engineering & Technology, Karachi

Research: Modeling and Performance Evaluation of Sustainable Atmospheric Water Generation using Water-selective Metal-organic Frameworks (Approved)

Courses: Desalination System Design, Research Methodologies, Advanced Experimental Design, Applied Computational Fluid Dynamics (Python-based), Advanced Machine Learning, Nanomaterials for Energy and Mass Transport, Extreme Events Modelling, Unconventional Water Resources (Completed)



Masters of Engineering (M Engg) – Energy Systems

2020 – 2022 (CGPA 3.84/4.00)

NED University of Engineering & Technology, Karachi

Thesis: Design of Experiments and Sensitivity Analysis of Plain Finned Tube Heat Exchangers (PFTHE) under Dehumidification

Courses: Energy Modelling and Forecasting, Project Management, Renewable Energy, Advanced Fluid Mechanics, Advanced Thermodynamics, Advanced Heat Transfer, Advanced Statistics



Bachelor of Engineering (BE) – Mechanical

2016 – 2020 (CGPA 3.807/4.00)

NED University of Engineering & Technology, Karachi

Coursework and *Final Year Project:* Design and Parametric Optimization of Atmospheric Water Generator (AWG) for Köppen B Climatic regions

3. Scientific Publications



Parametric Evaluation of Condensate Water Yield from Plain Finned Tube Heat Exchangers in Atmospheric Water Generation (Journal article)

Published: May 12th, 2022, <https://doi.org/10.1007/s13369-022-06832-3>
The Arabian Journal for Science and Engineering, Springer (IF 2020: 2.334)



Current trends on extraction of water from air: an alternative solution to water supply (Journal article)

Published: April 02nd, 2022, <https://doi.org/10.1007/s13762-022-03965-8>
International Journal of Environmental Science and Technology, Springer (IF 2020: 2.860)

4. Work Experience



Lecturer - Mechanical Engineering Department

March 2023 till date
NED University of Engineering & Technology, Karachi

Courses taught: Refrigeration and Air-Conditioning (Theory & Practicals), Heat and Mass Transfer (Practicals), Computer Aided Drawing, Materials and Metallurgy (Practicals)

Lab Incharge of Refrigeration and Air-Conditioning Laboratory

Designed Practical Workbooks on RAC & HT Lab, and CAD

Designed and compiled Final Year Design Project Guidelines, MED

<https://med.neduet.edu.pk/>



Research Assistant

July 2021 till May 2023
Mechanical Engineering Department, NED UET, Karachi
Funding Authority: Sindh Higher Education Commission

Research Project: Water Condensation from Tropospheric Humidity via Hydro-solar Nexus

An early participant in the proposal development stage, budgeting, and planning. Currently executing the day-to-day activities of the project, product design and modelling, timely procurement and management of the stores and reporting to the Chairperson/Principal Investigator. Project aims include the installation of public-use Atmospheric Water Generator machines at NED Main campus while subsequent data analysis from the trends of use and quality control.



Intern – OPP Slitter Department

July 2020 - August 2020
Tri-pack Films Limited Karachi

During the 6-week deployment at Port Qasim South-West Industrial Zone, Karachi planned and executed a pneumatic trim handling system according to international

standards via CAD. Planned a speedometer for film trimming machines and revision of S.O.P's for slitter department.



Intern – Mechanical Engineering

July 2018 - August 2018

NESPAC Karachi

During the 4-week deployment at Karachi Head Office, deployed a VBA based excel plugin for selection of Elevator shaft dimensioning for the Architecture Department according to ISO 4190-1:2010 and piping network evaluation for natural gas according to NFPA 54. Studied Medical Gas Routing according to ISO 7396-1:2016. Selection of Trelleborg berthing fender for Port Qasim.

5. Conferencing Roles

In reverse chronological order for the past year



United Nations 2023 Water Conference

Formally called the Midterm Comprehensive Review of Implementation of the UN Decade for Action on Water and Sanitation (2018-2028)

Held at United Nations Head Quarters, New York, USA during March 23rd - 25th, 2023 attended in-person

The International Water Association-Grundfos Youth Action for SDG 6 fellow at the conference.

Youth Speaker at an external side-event titled “Transformative Futures for Water Security” organized by International Water Management Institute (IWMI).

UN DESA Youth Rapporteur at a special side-event titled “Radical Collaboration for Water Resilience: Action with our greatest Allies in the Climate Crisis”.

<https://sdgs.un.org/conferences/water2023>



Pakistan Water Week 2022 - International Conference on the Role of Water-Energy-Food Ecosystem (WEFE) Nexus for a Climate Resilient Pakistan

Held at Islamabad, Pakistan during October 24th - 28th, 2022, attended virtually and in-person

Organized by: International Water Management Institute (IWMI) and Pakistan Council of Research in Water (PCRWR)

Youth Representative for Thematic Area 2: Politics, Policy and Institutions - Good Governance and Strengthening Capacities

Panelist at the session titled “Transformative Futures for Water Security Initiatives”

<https://pcrwr.gov.pk/pakistan-water-week-2022/>



Youth Water Conference at Pakistan Water and Energy Expo 2022

Held at EXPO Center Karachi, Pakistan during October 06th, 2022, attended in-person (co-organizer)

Organized by: Pakistan Water and Energy Expo and International Water Association Young Water Professionals Pakistan (IWA YWP Pakistan)

Co-Organizer for the conference

Moderator for the Panel Discussion: Narratives on Water Multidisciplinarity

Workshop Trainer for Reflections from Scandinavia – Call to Actions for Youth

<https://pakwaterexpo.com/>



Seminar on Climate Change Effects on Water Scarcity and Food Insecurity in Sindh and Baluchistan: Way Forward

Held at University of Karachi, Pakistan *during* September 26th, 2022, *attended* in-person

Organized by: Department of Economics, UoK and Global Youth Climate Network (GYCN)

Youth Provocateur on behalf of the International Water Association Young Water Professionals Pakistan

<https://www.nation.com.pk/27-Sep-2022/we-have-imported-representatives-of-foreign-institutions-to-run-our-country-claims-dr-kaiser-bengali>



World Water Congress and Exhibition

Held at Copenhagen, Denmark *during* September 11th – 15th, 2022, *attended* in-person

Organized by: the International Water Association and DANVA

Representative of IWA YWP Pakistan.

Co-chair in three Technical Sessions for Thematic Area 3: Drinking Water and Potable Reuse in Session 3.1: Technologies & Operations I, and Session 3.2: Technologies & Operations II. Thematic Area 6: Water Resources and Large Scale Water Management in Session 6.8: Water resource management and adaptation to climate change impacts.

Rapporteur for Workshop 1.1: Non-Revenue Water Management In Low And Middle-Income Countries- A

Forum observer and rapporteur for International Water Regulators Forum IV and V

<https://worldwatercongress.org/>



Asia Water Forum 2022 – Resilient and Water-secure Asia and the Pacific

Held Internationally, Online *during* August 08th – 11th, 2022, *attended* virtually

Organized by: Asian Development Bank

Rapporteur for Session S5A: Youth Leadership in Water - Putting Words into Actions

<https://www.adb.org/news/events/asia-water-forum-2022>

6. Certifications and Licenses



Registered Engineer, Pakistan Engineering Council

Registered Mechanical Engineer (MECH)



NEBOSH International General Certificate for Occupational Safety and Health

NEBOSH @ CORSHE, Karachi

Level 3 OSH Certification and eligibility for TechIOSH.



Microsoft Office Specialist - PowerPoint® 2016 (December 2018)

Awarded by Microsoft Corporation @ NEDUET

Certified Specialist – cleared the test in first attempt owing to self-taught experience.

7. Volunteering and Memberships



Country Chair and Founder

The International Water Association Young Water Professionals Pakistan Chapter (IWA YWP Pakistan) - June 2022 till date



Partnership Coordinator

The Youth and Young Water Professionals Platform (YYPP), Global Water Partnership South Asia (GWP-SAS) - December 2022 till date



Open-Access (OA) Ambassador

International Water Association Publishing - 2023

8. Skillset

Lingual: English – Advanced C1 اردو . مکمل عبور/مادری زبان

Soft/Interpersonal: Creativity, Leadership Readiness, Cultural Sensitivity, Presentation Etiquettes, Team Polymorphism, Risk Assessment, Safety Consciousness

Technical:

Office

Word, Excel, PowerPoint

Programming

Python, MATLAB

CAD & Simulation

SolidWorks, COMSOL

Statistical

Minitab



9. Awards and Honors



The International Water Association-Grundfos Youth Action for SDG-6 fellow at UN Water Conference 2023



Workshop Facilitator Momento at Youth Water Conference



Momento from Department of Economics, University of Karachi



Award of Valuable Contribution from Ministry of Climate Change, Pakistan



Laptop Awardee from Prime Minister's Youth Programme, Higher Education Commission



National Scholarship Awardee from Pakistan Telecommunication Limited



Beginner Winner Artist from Colored Pencil Magazine, North Carolina, USA