



Abdul Rauf Khan

Date of birth: 30/09/1999 | **Phone number:** (+31) 629154883 (Mobile) | **Email address:** abdulraufkhan@gmail.com | **Address:** Delft, Netherlands (Home)

WORK EXPERIENCE

PWNT HOLDING B.V. – ANDIJK, NETHERLANDS

GRADUATION INTERN – 02/02/2025 – 01/09/2025

- Research on inline coagulation and conventional coagulation pre-treatment for fouling control and improved backwashing with ultrafiltration systems
- Performed extensive literature review
- Conducted laboratory and pilot scale experiments to identify optimal coagulation conditions for UF fouling control
- Performed data analysis for UF fouling and resistance using excel and Python.

N.V. PWN WATERLEIDINGBEDRIJF NOORD-HOLLAND, NETHERLANDS – VELSERBROEK, NETHERLANDS

INTERN – 17/06/2025 – 09/08/2025

- Performed a statistical analysis on drinking water quality parameters to identify microbial hot spots in the drinking water distribution network of PWN.
- Mapped water quality parameters geographically by creating maps for the distribution network (GIS, Tableau).

WORLD WILDLIFE FUND (WWF) – ONLINE, PAKISTAN

INTERN – 01/07/2022 – 31/07/2022

- Applied the 3R (Reduce, Reuse, Recycle) approach to create daily-use products to reduce natural resource burden.
- Spread awareness regarding the importance and benefits of trees through plantation activity.
- Led an awareness campaign on water scarcity digitally and in the locality with the help of posters on the importance, current challenges, and consequences of water scarcity.

ENGRO POWERGEN THAR LIMITED – THARPARKAR, PAKISTAN

HEALTH, SAFETY AND ENVIRONMENT INTERN – 26/07/2021 – 05/09/2021

- Participated in daily EHS meetings, inspections and documentation process, and fortnightly EHS training.
- Had a briefing on DuPont accreditation.
- Had a detailed overview of health and safety measures at the site, mining, stacking and reclaiming, UF filtration, RO filtration, wastewater treatment, boiler, power generation, maintenance, operations, ash disposal, solid waste disposal, SOx NOx capture and control measures and power transmission.
- Did a project of analysis of coal dust mitigation practices at Engro Power Plant (660 MW mine-mouth coal-fired power plant) to analyze the cost savings the company can achieve by managing coal dust

EDUCATION AND TRAINING

18/09/2023 – 17/09/2025

MSC INTERNATIONAL MASTERS OF ENVIRONMENTAL TECHNOLOGY AND ENGINEERING (IMETE) - ERASMUS MUNDUS UCT Prague, IHE Delft, UGent

Theoretical and Design courses on:

- Surface/Ground/Brackish/Saline water treatment
- Conventional treatment technologies (Sand Filtration, Coagulation, Sedimentation, DAF)

- Advanced water treatment (MF, UF, NF, RO, CCRO, Electrodialysis, Ion Exchange)
- Managed Aquifer Recharge, Dune Infiltration, Wetlands

Website <https://www.imete.eu/> | **Final grade** Thesis Grade: 8.7/10 |

Thesis "Inline Coagulation for Fouling Control and Improved Backwashing for Ultrafiltration Systems: A Pilot Scale Study using Lake Ijssel Water" - Supervisor: "Prof. Maria D. Kennedy"

15/10/2018 – 28/11/2022

B.E. ENVIRONMENTAL ENGINEERING Mehran University of Engineering and Technology Jamshoro (Pakistan)

Website <https://www.muete.edu.pk/> | **Final grade** CGPA: 3.98 / 4.00 (Summa Cum Laude - 2 Gold Medal & 1 Silver Medal)

● **SKILLS**

Microsoft Office Specialist - (Word, Excel, PowerPoint, Outlook, Access) | MATLAB (Programming, Data Analysis, Plotting) - Intermediate Level | Scientific Research & Writing - Advanced Level | Data Driven, Mechanistic Modelling - Intermediate Level | Python Language - Basic knowledge | Endnote, Mendeley (Reference Management - Advanced User | ArcGIS - Intermediate level | Project Management - Intermediate Level | 2D AutoCAD - Experienced Level | CropWat (Determining Water Needs) - Basic User | SimaPro (Life Cycle Assessment) - Basic User | SewerCAD - Basic User | WaterCAD - Basic User | Machine Learning - Basic Knowledge | OpenLCA - Intermediate User | Tableau (Data Analysis) - Intermediate User | Desalination Plant Design - Expert

● **RESEARCH EXPERIENCE, PROJECTS**

MSc Research - Pilot and Lab Scale

- Jar testing for identifying optimal inline coagulation variables with for ultrafiltration fouling, using modified fouling index (MFI-UF) as surrogate parameter for fouling potential.
- Performed water quality analysis, membrane analysis and operated analytical instruments for 6 months (DOC, UV, FEEM, ICP-OES (Iron, Manganese), LC-OCD, pH, Turbidity, Particle Size, Zeta Potential, Iron Speciation, Particle Size, SEM-EDX, Microwave Digestions)
- Data Analysis on UF data for fouling and resistance quantification using Excel and Python.

Design of a Reverse Osmosis Plant for Drinking Water Application

- Investigation and Design of a suitable type of intake on the basis of produced water quality, capacity, O&M (open, beach well)
- Designing UF pretreatment (cycle duration, flux rate, backwash flux, CIP & CEBW regime, Capacity of feed and BW pumps)
- Estimating energy consumption for UF pretreatment and RO
- Investigation options to minimize energy consumption for RO plant (ERD, Windpower) and calculating the cost of RO plant
- Designing RO plant (possible recovery, concentration polarization, flux rate, CIP regime, staging and passing, scaling potential and mitigation - antiscalants)
- Post-treatment Design

Research Scholar, Microbiology Laboratory - Mehran University of Engineering and Technology

- Prepared bacterial slides using gram staining from bacterial culture.
- Performed experiment and research under guidance of professor.
- Captured microscopic images of bacteria from bacterial slides.
- Collected experimental data.
- Maintained Laboratory Equipment and Inventory.

Smartphone based portable microscope aided with machine learning to detect waterborne bacteria

- Designed simple glass bead lens based on Leeuwenhoek Microscope design.
- Designed simple portable microscope reusing plastic and cardboard.
- Collected water samples for multiple locations for growing culture of waterborne bacteria.
- Prepared bacterial slides using gram staining from bacterial culture.
- Trained Convolutional Neural Network for classifying bacterial image dataset.
- A research paper is under the process of publication (initial stage)

Design of Water Supply System for Hyderabad City, Pakistan

This was a personal project completed as complex engineering problem for water supply course.

- Daily water demand was re-calculated using current census data.
- An alternative current water supply system was designed where pumping stations were substituted with gravity flows.
- Design of upgraded water treatment plant with primary and secondary water treatment methods.

● **CERTIFICATIONS**

Basic Elements of Safety VCA (Basisveiligheid VCA)

IOSH Managing Safely v5.0

Microsoft Office Specialist: Master (Office 365, Office Suite 2019, Office Suite 2016)

ISO 14001:2015, 5001:2018, 9001:2015, 45001:2018 Awareness

● **HONOURS AND AWARDS**

Awarded 1st Position in Final Year Thesis Project Exhibition for my undergrad research project held by Institute of Environmental Engineering & Management, Mehran University

Provincial Coordinator Sindh for Sustainable Development by Youth Counselling & Development Network

Winner of Digital Marketing Bootcamp by MUET Bootcamps

● **WORKSHOP, CONFERENCE**

National Dialogue on Climate Change

- Strategies to spread climate literacy were formulated to reach target of 1 Million.
- Nature-Based solutions to combat climate change were discussed.
- Solutions for global environmental challenges were proposed.

Youth Leaders Talk by Youth Counselling & Development Network

- Group decisions were held on single targeted SDG to identify causes, challenges and propose solutions.
- Conference proceeding were drafted by all attendees and presented to Ministry of Environment and Climate Change, Pakistan.

● **VOLUNTEERING, EXTRA-CURRICULAR ACTIVITIES**

Director General, Mehran University Society of Environmental Engineers

- Leading and ensuring effective coordination between all departments of the student society.
- Organizing events, seminars, workshops regarding environmental challenges.

Head Volunteer Big Event 2019 (Community Service), Mehran University of Engineering and Technology

- Leading group of volunteers assigned at Medical Camp at the Big Event.
- Raising awareness regarding the medical camp in the locality through posters and area visits.

Graphic Designer, TEDxMUET 2022

- Designed all the print and digital media for TEDxMUET 2022 (Social Media Posts, Certificates, Speaker Profiles, Event Merchandize, Promotional Videos).

● **HOBBIES AND INTERESTS**

Cricket, Football, Table Tennis, Astronomy & Greek Mythology
