

# Aftab Hussain Arain

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📍 **Work:** Department of Petroleum Engineering University Road, 75270 Karachi (Pakistan)

## WORK EXPERIENCE

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### Assistant Professor

**NED University of Engineering & Technology** [ Mar 2018 – Current ]

City: Karachi | Country: Pakistan

- Teaching the following undergraduate courses to the Third and Final year:
  - Natural Gas Engineering
  - Drilling Engineering-II
  - Oil and Gas Field Production Facilities
- Supervising Final Year Design Projects (FYDP) on different topics of Petroleum Engineering.
- Taught different undergraduate courses:
  - Drilling Engineering-I
  - Drilling Engineering-II
  - Natural Gas Engineering
- Supervised Final Year Projects (FYP) on different topics of Petroleum Engineering.
- Worked as Class Advisor and FYP Coordinator.

### Research Scientist

**Universiti Teknologi PETRONAS (UTP)** [ May 2023 – May 2024 ]

City: Seri Iskandar | Country: Malaysia

- Worked on the research project, "Artificial Neural Network (ANN) Algorithm for Prediction of Recovery Factor in a Porous Media."

### Lecturer

**NED University of Engineering & Technology** [ Mar 2008 – Feb 2018 ]

City: Karachi | Country: Pakistan

- Taught different undergraduate courses:
  - Drilling Engineering-I
  - Drilling Engineering-II
  - Reservoir Petrophysics
  - Natural Gas Engineering
  - Computer Programming and Applications
  - Petroleum Geology
  - Petroleum Refinery Engineering
  - Thermodynamics
  - Corrosion Control Engineering
- Supervised Final Year Projects (FYP) on different topics of Petroleum Engineering.
- Worked as Class Advisor and FYP Coordinator.
- Member of Duty Society.

## Teaching Assistant

**Norwegian University of Science & Technology (NTNU)** [Jan 2015 – Apr 2015]

City: Trondheim | Country: Norway

- Assisted Prof. Milan Stanko in the course of "Field Development and Operations".

## Interne under National Internship Program (NIP)

**Mehran University of Engineering & Technology** [Sep 2007 – Apr 2008]

City: Jamshoro | Country: Pakistan

- Taught Following Courses:
  - Applied Geology
  - Reservoir Fluid Properties

## EDUCATION AND TRAINING

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### Doctor of Philosophy (PhD) - Petroleum Engineering

**Universiti Teknologi PETRONAS (UTP)** [Nov 2018 – Sep 2023]

City: Seri Iskandar | Country: Malaysia | Thesis: Development and Performance Evaluation of Biodiesel-Based Drilling Fluid using Calophyllum Inophyllum Oil for Improved Drilling in Shale Formation

### Master of Science (MSc) - Petroleum Engineering

**Norwegian University of Science & Technology (NTNU)** [Sep 2013 – Aug 2015]

City: Trondheim | Country: Norway | Thesis: Theoretical study of Osmotic and Swelling Pressures with Experimental Investigation of Threshold Capillary Pressure in Shales

High Deviation Drilling, Drilling Fluid, Drilling Techniques Pressure Control, & Field Development and Operations.

### Post Graduate Research Fellowship

**AGH University of Science & Technology** [Oct 2009 – Mar 2010]

City: Krakow | Country: Poland | Thesis: Modeling of Multiphase Flow in Natural Gas Condensate and Volatile Oil in Porous Media (EOR-CO<sub>2</sub>/EGR-CO<sub>2</sub> Models)

### Bachelor of Engineering (BE) - Petroleum & Natural Gas Engineering

**Mehran University of Engineering & Technology** [Jan 2003 – Dec 2006]

City: Jamshoro | Country: Pakistan | Thesis: Well Stimulation Design

## NETWORKS AND MEMBERSHIPS

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[ Sep 2023 – Current ]

**Graduate Engineer - Board of Engineers Malaysia (BEM)**

[ Dec 2007 – Current ]

**Registered Engineer - Pakistan Engineering Council (PEC)**

## PUBLICATIONS

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[Arain, A. H., Negash, B. M., Farooqi, A. S., & Alshareef, R. S. \(2024\). Improving Oil Recovery through Low Salinity Waterflooding and Nanoparticles: A Mini Review. Energy & Fuels.](#)

[Arain, A. H., Negash, B. M., Yekeen, N., Farooqi, A. S., & Alshareef, R. S. \(2024\). Synergising nanoparticles and low salinity waterflooding for enhanced oil recovery: A state-of-the-art review. Journal of Molecular Liquids, 124495.](#)

[Arain, A. H., Ridha, S., Suppiah, R. R., Irawan, S., & Ilyas, S. U. \(2022\). Developing an efficient ester-based drilling fluid based on Calophyllum Inophyllum oil for eco-friendly drilling of unconventional shale formation. Journal of Petroleum Science and Engineering, 219, 111141.](#)

[Arain, A. H., Ridha, S., Mohyaldinn, M. E., & Suppiah, R. R. \(2022\). Improving the performance of invert emulsion drilling fluid using boron nitride and graphene nanoplatelets for drilling of unconventional high-temperature shale formations. Journal of Molecular Liquids, 363, 119806.](#)

[Arain, A. H., Ridha, S., Ilyas, S. U., Mohyaldinn, M. E., & Suppiah, R. R. \(2022\). Evaluating the influence of graphene nanoplatelets on the performance of invert emulsion drilling fluid in high-temperature wells. Journal of Petroleum Exploration and Production Technology, 1-25.](#)

[Arain, A. H., Ridha, S., & Ali, I. \(2022\). Development and performance evaluation of castor oil based biodiesel as an eco-friendly ester-based drilling fluid. Petroleum Science and Technology, 1-21.](#)

[Lalji, S. M., Khan, M. A., Haneef, J., Ali, S. I., Arain, A. H., & Shah, S. S. \(2021\). Nano-particles adapted drilling fluids for the swelling inhibition for the Northern region clay formation of Pakistan. Applied Nanoscience, 1-15.](#)

Arain, A. H., Irawan, S., Ibrahim, A., & Rajeswary, R. (2020). Experimental investigation of capillary threshold pressure in shale. International Journal of Advanced Science and Technology, 29(1), 129-140.

[Ali, I., Ahmad, M., Arain, A. H., Atashbari, V., & Zamir, A. \(2022\). Utilization of Biopolymers in Water Based Drilling Muds. In Drilling Engineering and Technology-Recent Advances, New Perspectives and Applications. IntechOpen.](#)

## CONFERENCES AND SEMINARS

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[ 10 Sep 2024 – 11 Sep 2024 ] Sabah, Malaysia

**International Conference on Subsurface Technology (ICSsT)**

[ 28 Aug 2023 – 30 Aug 2023 ] Langkawi, Malaysia

**3rd Energy Security and Chemical Engineering Congress (ESChE 2023)**

[ 9 Jun 2022 – 11 Jun 2022 ] Langkawi, Malaysia

**The 6th International Conference and Postgraduate Colloquium for Environmental Research (POCER 2022)**

[ 13 Jul 2021 – 14 Jul 2021 ] Malaysia

**The 6th International Conference on Oil & Gas Engineering and Technology (ICOGET)**

[ 24 Sep 2019 – 25 Sep 2019 ] Kuala Lumpur, Malaysia

**First International Conference on Sustainable Innovation in Engineering and Technology (SIET)**

[ 18 Sep 2019 – 19 Sep 2019 ] Kuala Lumpur, Malaysia

**ASEAN HSE Loss Prevention & Professional Development Conference**

[ 30 May 2016 – 31 May 2016 ] Islamabad, Pakistan

**International Conference on Unconventional Hydrocarbon Resources (ICOUR-1)**

[ 14 Sep 2012 – 16 Sep 2012 ] Karachi, Pakistan

**Hydrocarbon Phase Behaviour and PVT Analysis**

## HONOURS AND AWARDS

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[ Dec 2023 ] Centre for Graduate Studies (CGS), UTP Universiti Teknologi PETRONAS (UTP)

**Graduate Assistantship (GA) Publication Achievement Recognition 2023**

[ Dec 2022 ] Centre for Graduate Studies (CGS), UTP Universiti Teknologi PETRONAS (UTP)

**Graduate Assistantship (GA) Merit Award For FY 2022**

[ Oct 2008 ] Polish National Commission for UNESCO

**UNESCO/POLAND Co-Sponsored Post-Graduate Research Fellowship**

**DIGITAL SKILLS**

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Microsoft Office / Modelling / Artificial Intelligence / Machine Learning / Deep Learning

**PROJECTS**

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[ Jan 2015 – Jul 2015 ]

**Theoretical study of Osmotic and Swelling Pressures with Experimental Investigation of Threshold Capillary Pressure in Shales**

[ Sep 2014 – Dec 2014 ]

**Wellbore Strengthening in Shale**

[ Oct 2009 – Mar 2010 ]

**Modeling of Multiphase Flow in Natural Gas Condensate and Volatile Oil in Porous Media (EOR-CO<sub>2</sub>/EGR-CO<sub>2</sub> Models)**

**FIELD COURSE**

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[ 14 Aug 2014 – 25 Aug 2014 ]

**SVALEX-2014**

Field Course at Svalbard, organized by Norwegian University of Science & Technology (NTNU)

**LANGUAGE SKILLS**

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**Mother tongue(s):** Urdu

**Other language(s):** English