

**KHALIL REHMAN MEMON**

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**Academic Qualification**

S#	Degree/ Certificate	Year of Passing	Division	Major Subjects	University/Institution
1.	<b>Ph.D.</b>	Feb-2021	3.9 C.G.P. A	Petroleum Engineering	<b>MUET Jamshoro Pakistan.</b>
<b>Thesis Title</b>		INFLUENCES OF CRYOGENIC LIQUID NITROGEN ON PETREOPHYSICAL AND MORPHOLOGICAL CHARACTERISTICS OF SHALE GAS RESERVOIRS: AN EXPERIMENTAL AND SIMULATION APPROACH.			
2.	<b>MS By Research</b>	Feb-2014		Petroleum Engineering	<b>University TEKNOLOGI PETRONAS Malaysia</b>
<b>Thesis Title</b>		LABORATORY INVESTIGATIONON PERFORMANCE OF CEMENT USING DIFFERENT ADDITIVES SCHEMES BASED ON MECHANICAL PROPERTIES.			
3.	<b>PGD</b>	2009	First	Petroleum Engineering	<b>MUET Jamshoro Pakistan</b>
4.	<b>B. E</b>	2002	First	Petroleum & Natural Gas Engg.	<b>MUET Jamshoro Pakistan</b>
5.	<b>HSC</b>	1994	First	Pre-Engineering	<b>BISE Hyderabad, Pakistan</b>
6.	<b>SSC</b>	1992	First	Science	<b>BISE Hyderabad Pakistan</b>

**Work Experience**

S#	Name of Organization	Post held	From	To	Duties
1	Mehran UET, Jamshoro, Sindh Pakistan.	Assistant Professor	19-03-2015	Till-to-date	Teaching and Research
2		Lecturer	14-08-2009	19-03-2015	Teaching and lab Supervision
3		Lab Lecturer	28-01-2008	14-08-2009	
4		Research Assistant	14-09-2004	28-01-2008	

**Project Supervision Post Graduate ME.**

Research Titles
Laboratory Investigation of Oil Well Cement To Evaluate Integrity By Using Different Additives.
Laboratory Based Investigation To Develop Environment Friendly Oil Based Drilling Mud.
Simulation Study of Cutting and Transport in Vertical Wells
Study the temperature viscosity behavior of gas condensate in critical temperature ranges of phase transfer.
Comparative study of Rheology of Heavy and Light Crude oil for Pipeline Transmissibility.
Formation Evaluation of Drill Cuttings of Conventional & Unconventional Reservoirs.
Modeling of drilling optimization rate of directional wells in Lower Indus Basin.
Evaluation of Oil Well Cement Integrity Using Different Additives.
Comparative Study & Performance Analysis of Diesel Oil Base Mud with Vegetable Oil Base Mud.

### **Internal Evaluator of Post Graduate Seminars (ME).**

Research Titles
Forecasting production enhancement in tight gas reservoirs by horizontal wells using 3-D, 2-phase simulation model
Effects of porous media by the use of air injection to improve oil recovery from heavy oil reservoirs.
To investigate appropriate technique for formation evaluation for knowing reservoir behavior using simulation.
Oxidation Reaction Kinetics during air injection into medium oil reservoirs
Dry Gas Reservoir Management With Integrated Asset Modeling Approach

### **Project Supervision BE to Various Batches (Petroleum & Natural Gas Engineering)**

1.	Prediction of Sand Production and Multiple Sand Control Technique.
2.	Innovative Water Control for Production Enhancement.
3.	Nuclear magnetic Resonance as a Tool for Predicting Reservoir Flow and Well Stimulation Job.
4.	Gravel Pack Completion in Horizontal Wells.
5.	Work Over Operation ‘A Case Study’.
6.	Analysis of Horizontal well completion for production optimization (case study).
7.	A case study of hydraulic fracturing and its optimization in low permeable gas reservoir.
8.	A simulation approach of gas lifts optimization and its comparison with other artificial lift methods.
9.	Diagnostic information of water producing zone by production logging tool.
10	Using Simulation Approach Productivity Enhancement Through Performance Techniques.

### **Short Course Certificates**

S #	Course Name
	“Fractured Reservoir and Enhanced Oil Recovery” Organized by Total Professeurs Associes (Tpa), UNIVERSTI TEKNOLOGI PETRONAS.
1	“Well Testing” conducted by Dr Obaid-ur-Rehman Paracha, Chief Reservoir Engineer, OGDCL Pakistan; organized by SPE Mehran Student Chapter at Mehran University of Engineering & Technology, Jamshoro Sindh Pakistan.
2	“Wireline Logging & Interpretation” conducted by Mr Masatoshi Nishi, Country Manager, and Schlumberger Pakistan; organized by SPE Mehran Student Chapter at Mehran University of Engineering & Technology Jamshoro Sindh Pakistan

3	“Staff Development Course” organized by Higher Education Commission Pakistan.
4	“Reservoir Simulation” conducted by Mr Hashim Abbasi, Reservoir Engineer, Senergy Ltd Aberdeen, United Kingdom; organized by SPE Mehran Student Chapter at Mehran University of Engineering & Technology, Jamshoro Sindh Pakistan.
5	Enhanced oil Recovery and natural Fractured Reservoir Conducted by Total Oil TPA Malaysia.
6.	Three-day work shop on reservoir simulation conducted by Mustafa Onur at UTP Malaysia.

### **Professional Affiliation**

Ph.D country directory (PCD.No:24177)  
 Member, Pakistan Engineering Council (PETGAS/593)  
 Member, Society of Petroleum Engineers Int.

### **Research Area**

Unconventional Resources of Energy.  
 Cement Rheology.  
 Early and Late age Cement Compressive Strength.

### **Journal Publications**

S#	Author Name & title
1	<b>Memon Khalil Rehman</b> , Muhammad Ali, Faisal Ur Rahman Awan, Aftab Ahmed Mahesar, Ghazanfer Raza Abbasi, Udit Surya Mohanty, Hamed Akhondzadeh, Abdul Haque Tunio, Stefan Iglauer, Alireza Keshavarz, Influence of cryogenic liquid nitrogen cooling and thermal shocks on petro-physical and morphological characteristics of Eagle Ford shale, Journal of Natural Gas Science and Engineering, Volume 96, 2021, 104313, ISSN 1875-5100, <a href="https://doi.org/10.1016/j.jngse.2021.104313">https://doi.org/10.1016/j.jngse.2021.104313</a> .
2	<b>Memon Khalil Rehman</b> , Temoor Muther, Ghazanfer Raza Abbasi, Abdul Haque Tunio, Feroz Shah, Aftab Ahmed Mahesar, Udit Surya Mohanty, Usman Nasir, “Analysis of Mancos Shale gas production scenarios under various stress mechanisms” <b>Arab J Geosci 14, 1872 (2021)</b> . <a href="https://doi.org/10.1007/s12517-021-08190-0">https://doi.org/10.1007/s12517-021-08190-0</a> . <b>Linked at springerlink.com.</b>
3	<b>Memon Khalil Rehman</b> , Muhammad Ali, Faisal Ur Rahman Awan, Aftab Ahmed Mahesar, Ghazanfer Raza Abbasi, Udit Surya Mohanty, Hamed Akhondzadeh, Abdul Haque Tunio, Stefan Iglauer, Alireza Keshavarz, “Influence of cryogenic liquid nitrogen cooling and thermal shocks on petro-physical and morphological characteristics of Eagle Ford shale”, Journal of Natural Gas Science and Engineering, Volume 96, 2021, 104313, ISSN 1875-5100, <a href="https://doi.org/10.1016/j.jngse.2021.104313">https://doi.org/10.1016/j.jngse.2021.104313</a> .
4	Tariq Ali Chandio, Muhammad A. Manan, <b>Khalil Rehman Memon</b> , Ghulam Abbas, and Ghazanfer Raza Abbasi “Enhanced Oil Recovery by Hydrophilic Silica Nanofluid: Experimental Evaluation of the Impact of Parameters and Mechanisms on Recovery Potential” Energies 2021, 14, 5767. <a href="https://doi.org/10.3390/en14185767">https://doi.org/10.3390/en14185767</a> .
5	<b>Memon, Khalil Rehman</b> , Aftab Ahmed Mahesar, Muhammad Ali, Abdul Haque Tunio, Udit Surya Mohanty, Hamed Akhondzadeh, Faisal Awan, Stefan Iglauer, Alireza Keshavarz. Influence of Cryogenic Liquid Nitrogen on Petro-Physical Characteristics of Mancos Shale: An Experimental Investigation. Energy Fuels 2020, 34, 2, 2160–2168 Publication Date: January. 2, 2020.

6	<b>Memon, Khalil Rehman</b> , Aftab Ahmed, Shahzad Ali Baladi, Muhannad Talib Sukar: Analyzing Cement Rheological Properties Using Different Additive Schemes at High Pressure and High Temperature Conditions. <b>Mehran University Research Journal of Engineering and Technology</b> , v. 39, n. 3, p. 466-474, July 2020. ISSN 2413-7219
7	Mahezar, A. A., Ali, M., Shar, A. M., , <b>Memon, Khalil Rehman</b> , Mohanty, U. S., Akhondzadeh, H., ... & Keshavarz, A. (2020). Effect of Cryogenic Liquid Nitrogen on the Morphological and Petrophysical Characteristics of Tight Gas Sandstone Rocks from Kirthar Fold Belt, Indus Basin, Pakistan. <i>Energy &amp; Fuels</i> , 34(11), 14548-14559.
8	<b>Memon, Khalil Rehman</b> , Mahezar, A. 12517-021-08190-0 A, Abdul Haque Tunio, Shahzad Ali Baladi Laboratory Investigation to Assess the Impact of Pore Pressure Decline and Confining Stress on Shale Gas Reservoirs. <b>Mehran University Research Journal of Engineering and Technology</b> , v. 37, n. 1, p. 10, Jan. 2018. ISSN 2413-7219
9	Shar, A.M., Mahezar, A.A. & <b>Memon, Khalil Rehman</b> . Could shale gas meet energy deficit: its current status and future prospects. <i>Journal of Petroleum Exploration and Production Technology</i> 8, 957–967 (2018). <a href="https://doi.org/10.1007/s13202-017-0399-y">https://doi.org/10.1007/s13202-017-0399-y</a> . link at <a href="http://springerlink.com">springerlink.com</a>
10	MAHESAR, Aftab Ahmed, <b>Memon Khalil Rehman</b> , Memon HUR, A, Abdul Haque Tunio, Comparison of Klinkenberg-Corrected Gas and Liquid Permeability in Kirthar Fold Belt Tight Gas Sands. <i>Mehran University Research Journal of Engineering and Technology</i> , [S.I.], v. 36, n. 4, p. 8, Oct. 2017. ISSN 2413-7219.
11	MAHESAR, Aftab Ahmed, Shar, A. M, <b>Memon Khalil Rehman</b> , HUR and Baladi S.A (2017). Experimental Study on Gas Slippage of Tight Gas Sands in Kirthar Fold Belt Sindh, Pakistan. <i>Mehran University Research Journal of Engineering and Technology</i> , [S.I.], v. 36, n. 3, p. 719-732, July 2017. ISSN 2413-7219
12	Abdul Majeed Shar, Aftab Ahmed Mahezar, A.A CHANDIO <b>Memon Khalil Rehman</b> , “Impact of confining stress on permeability of tight gas sands an experimental study” <i>J Petrol Explor Prod Technol</i> , DOI 10.1007/s13202-016-0296-9. link at <a href="http://springerlink.com">springerlink.com</a>
13	Ghulam Abbas, Sonny Irawan, Sandeep Kumar, <b>Memon Khalil Rehman</b> , “Characteristics of oil well Cement Slurry Using HYDROXYPROPYLMETHYLCELLULOSE (HPMC)” <i>Journal of Applied Science</i> 14(11): 1154-1160, 2014, ISSN 1812-5654/DOI: 10.3923/Jas.2014.1154.1160.
14	Abbas, G., Irawan, <b>Memon Khalil Rehman</b> , Javed Khan “Application of cellulose-based polymers in oil well cementing” <i>Journal of Petroleum Exploration and Production Technology</i> 10, 319–325 (2020). <a href="https://doi.org/10.1007/s13202-019-00800-8">https://doi.org/10.1007/s13202-019-00800-8</a> . link at <a href="http://springerlink.com">springerlink.com</a>
15	<b>Memon Khalil Rehman</b> , Muhammad Talib Shuker, Muhammad Khan Memon, Arshad Ahmed Lashari and Ghulam Abbas, Durability and Rheological Evaluation of cement Slurries from Atmospheric to High Thermal Condition, <i>Journal of Applied Science</i> 14(11):1204-1209, 2014 ISSN 1812-5654/DOI 10.3923/Jas.2014.1204.1209
16	Muhannad Talib Shuker, <b>Memon Khalil Rehman</b> , Saleem Qadir Tunio and Muhammad Khan Memon, Laboratory Investigation on Performance of Cement Using Different Additives Schemes to Improve Early Age Compressive Strength, <i>Research Journal of Applied Sciences, Engineering and Technology</i> 7(11): 2298-2305, 2014 ISSN: 2040-7459; e-ISSN: 2040-7467
17	Muhammad Khan Memon, Saleem Qadir Tunio, <b>Memon Khalil Rehman</b> and Arshad

	Ahmed Lashari, A Comparative Study of Liquefied Natural Gas: An Overview; Research Journal of Applied Sciences, Engineering and Technology 7(17): 3522-3528, 2014, ISSN: 2040-7459; e-ISSN: 2040-7467.
18	Saleem Qadir Tunio, Swapan Kumar Bhattacharya Universiti Teknologi P, <b>Memon Khalil Rehman</b> , Sonny Irawan, Aung Kyaw, “Investigating Methane Adsorption Potential of Malaysian Coal for Coal Bed Methane (CBM) Study” Mediterranean Journal of Social Sciences MCSER Publishing, Rome-Italy. ISSN 2039-2117 (online); ISSN 2039-9340 (print) Vol 5 No 27 December 2014.
19	Ghulam Abbas, Sonny Irawan, <b>Memon Khalil Rehman</b> , S.Kumar, Ahmed A.I. IL rayah “Hydroxypropylmethylcellulose as a Primary Viscosifying Agent in Cement Slurry at High Temperature” International Journal of Automotive and Mechanical Engineering. Volume 8, July-December 2013, pp 1215-1222. Publisher: The Automotive Engineering Centre (AEC), Universiti Malaysia Pahang ISSN:2229-8649E-ISSN:2180-1606
20	<b>Memon, Khalil Rehman</b> , Muhannad Talib Shuker, Saleem Qadir Tunio, Arshad Ahmed Lashari and Ghulam Abbass. Investigating Rheological Properties of High-Performance Cement System for Oil Wells, Research Journal of Applied Sciences, Engineering and Technology 6(20): 3865-3870, 2013 ISSN: 2040-7459; e-ISSN: 2040-7467.
21	Arshad Ahmed, Muhannad Talib Shuker, <b>Memon Khalil Rehman</b> , Hassan Bahrami and Muhammad Khan Memon, “Reducing Mechanical Formation Damage by Minimizing Interfacial Tension and Capillary Pressure in Tight Gas” 2nd International Conference on Mechanical Engineering Research (ICMER 2013) IOP Publishing IOP Conf. Series: Materials Science and Engineering 50 (2013) 012019 doi:10.1088/1757-899X/50/1/012019.

### Conferences Proceedings and Presentations

S#	Author Name & title
01	<b>Memon, Khalil Rehman</b> , Muhammad Talib Shuker, Muhammad Khan Memon, Arshad Ahmed Lashari and Ghulam Abbas, “Rheological Evaluation of cement Slurries for HPHT conditions. IOGC Saba Malaysia.
02	Sunder Sham Jeswani <b>Memon, Khalil Rehman</b> , Ahmed Mahesar, “Experimental Study of Oil Based Mud For Minimize Impact on Environment By Using Different Vegetable Oils “ 4 <sup>th</sup> International Conference on Energy Environment and Sustainable Development 2016 ( EESD, 2016).
03	Khalique wazir, Aftab Ahmed Mahesar, <b>Memon, Khalil Rehman</b> , “Comparative Study of Rheology of Heavy and Light Crude Oil for Pipeline Transmissibility” First International Conference on Industrial Engineering and Management Applications 2017.
04	Abdul Samad, <b>Memon, Khalil Rehman</b> , “laboratory Investigation of Cement Permeability By Using Different Chemical Additive” Presented in 1st International Conference on Chemical Engineering and Exhibition (CCE-2015) held at MUET, Jamshoro Sindh Pakistan, January, 2016

### Teaching Activities

Various Subjects to Postgraduate as well as Undergraduate Students.

### **Departmental Development Responsibilities**

Member Board of Faculty.

Departmental Management Review Committee.

Member Industrial Liaison Committee.

### **External Examiner**

Dawood Engineering University Karachi.

QUEST, Nawabshah.

### **Conferences, Workshops Attended**

Australian Oil and Gas Exhibition and Conference, <b>Perth, Australia</b> , 2019.
International Oil and Gas Conference, <b>Houston, America</b> , 2017.
International Oil and Gas Conference (IOGC), Universiti <b>Malaysia Sabah</b> , 2013.
International Conference on Oil and Gas Engineering and Technology ( <b>ICOGET</b> ), <b>Kuala Lumpur, Malaysia 2012</b> .
4 <sup>th</sup> International Conference on Energy Environment and Sustainable Development 2016 (EESD, 2016), <b>Pakistan</b> .
Annual Technical Conference (ATC, 2015), <b>Islamabad, Pakistan</b>

### **Core Competencies**

- Cryogenic Liquid Nitrogen Fracturing.
- Morphological Characterization of Shale Gas Reservoir.
- Properties of Reservoir Engineering.
- Cement Rheology & its Compressive Strength.

### **Languages**

English, Sindhi, Urdu.