

ABDUL RASHID ABDUL NABI MEMON

The Research Committee,  
UNICAM, Italy

**Sub: - Application for the post of Doctoral (Ph.D.) Position**  
**(Multidisciplinary characterization of the structural, petrophysical and geophysical properties of fault zones for groundwater and green energies applications)**

Dear Sir / Madam,

Concerning your advertisement for the above-mentioned post, I believe, I possess the necessary attributes to make a role successful. As you will see from my resume, I have gained an **International Master's degree in Petroleum Engineering** from the **Technical University of Denmark (Denmark)** and a **Bachelor's degree in Chemical Engineering** from **Dr. BATU (India)**. Besides, I am 10+ years experienced reservoir engineer & consultant skilled in **core flooding experiments, dynamic reservoir modelling, reservoir simulations**, and other areas of petroleum engineering and have an interest in the above-mentioned topic for a doctoral position in your esteemed university.

As a reservoir engineer, I have played various roles in both organization **and research department** and possess professional experience in **laboratory experiments, dynamic modelling, and simulation studies**. I have practical experience in **experimental design**, measuring physical properties of reservoir fluids, measurement of HPHT Interfacial Tension (IFT), and carries out **HPHT core flooding experiments for water flooding / low salinity (IOR), EOR, and gas injection projects**. Also, I have worked on several projects in laboratories like **imbibition experiments**, experimental characterization of oil, and possess knowledge of using **CT scanner to determine oil, gas, and water saturation profile in the rock samples** to be able to follow the recovery processes **in-situ**. These experiences have provided me to work on both matured and non-matured assets. These significant abilities, I have acquired in the areas of project and department management and performed a wide variety of activities, including strategic planning, innovative development, and implementation of creative thinking to new systems and technologies following the **HSE guidelines**.

Apart from technical abilities, I have developed a **high degree of team skills** in a diversified working environment throughout many practical experiences of my learning, while working in international countries. Also, as a researcher and reservoir engineer consultant, I conduct talks with technical teams, clients, and business units required to liaise with management by providing information during decision gates and decision-making processes to existing issues in form of **research papers, reports, drafts, and presentations**. I am also a very motivated and independent person, especially interested in a doctoral position in a private society in a foreign country. The above Ph.D. position would allow me to enhance my scientific and technical skills in the new area of technology to discover another way of life. It will also be an opportunity for me to learn new techniques and share my own experiences and knowledge in another context.

Thus, I believe in taking early responsibilities with a **CAN DO** attitude, self-starter, strategic thinking, imagination, professionalism, problem-solving, and result-oriented smart work. I also organize and plan, adapts to change, learns and share knowledge, and delivers results. The accompanying resume gives you an idea of my potential for making a worthwhile contribution to the research work. I believe it is mutually beneficial for us to contact and discuss out the possibility of a meeting and hope that you will respond positively to my application.

Thank you for your time and consideration.

Yours Sincerely,

Abdul Rashid

Dated 21/6/2021

# ABDUL RASHID ABDUL NABI MEMON

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## SUMMARY

- ✓ Dynamic Reservoir Modelling
- ✓ Reservoir Simulation Studies
- ✓ PVT Analysis, EOS Characterization
- ✓ Field Development Planning
- ✓ Well Test Interpretation
- ✓ Production Forecasting
- ✓ MBAL Modelling
- ✓ HPHT IFT & Core-flooding Experiments

## PROFILE

**Jan 2016 – Till date** HB Consultancy, Bangalore, INDIA (Free Lance position)

As a "Senior Reservoir Engineering consultant", my working profile includes



- Carry out studies related to CO<sub>2</sub> flooding and Chemical EOR
- Well Test Design and Interpretation
- Dynamic Modelling and Simulation studies using E100 and E300
- Decline Curve Analysis, Production Forecasting and Reserves Estimation
- Documenting drafts, reports, and presentations for client submission.

**Aug 2012 – Dec 2015** SHELL – INDIA, Bangalore, INDIA (Seconded position)

As a "Reservoir Engineer", my working profile includes



- The primary objective was to QA / QC the operators work and validate the model inputs
- Review operator Eclipse Black oil model - E100
- PVT - EOS modeling to estimate condensate to gas ratio (CGR)
- Well test interpretation to determine reservoir parameters, reservoir & boundary models
- Contribution to porosity & permeability determination.
- Knowledge in Analyzing and Interpreting well logs for fluid saturation, porosity, density, and lithology.
- Residual Gas saturation determination
- Aquifer characterization
- Construction and Maintenance of Material Balance (MBAL) Model

**Achievement:** Successfully achieved the project outline and improved the earlier results and developed MBAL model for Gas Condensate reservoir which results in the estimation of remaining hydrocarbon resource potential.

**Sep 2008 – Aug 2011** CSIRO Petroleum Resources, Perth, AUSTRALIA

As a "Research Reservoir engineer", my working profile includes



- Analyze and perform experimental design and maintenance of facilities
- Carryout HPHT core flooding experiments to determine relative permeability for water flooding (IOR), EOR, MEOR and gas injection projects with and without the use of X-ray CT.
- Carryout HPHT experiments related to interfacial tension determination.
- Determination of porosity & permeability with the help of Poro-Perm meter.
- Measuring and evaluation of micro-emulsion in oil and water system and effect of them on EOR.
- Documenting drafts, reports, and presentations for client submission, papers, and conferences

**Achievement:** Successfully achieved the project outline, developed core flooding apparatus for X-ray CT and produced results which are published as research papers and in a conference presentation.

*Key Accountabilities*

**Mentorship:** Assist Ph.D. and Master student to achieve the project goals designed by Line Manager

**HSE Management:** Recognize and act on the duty to both self and teammates and those around to ensure that safe practice is performed at all times in the laboratory. In addition to any specific accountability for HSSE adopt exemplary safe behaviors.

*Training Undergone*

- 13 Dec – 15 Dec 2009 Core drilling and core preparation for core flooding experiments (Work Safe) – Australia
- 10 Nov 2009 Gas Handling and Safety Course (BOC) – Australia
- 27 Oct 2009 Fire Fighting Course (Protector Fire Service Pvt. Ltd) - Australia
- 15 May 2009 The radiation safety course (RadSafe) – Australia
- 11 Nov 2008 Senior first Aid course & Emergency Course (St. John's Hospital) – Australia

**Feb 2006 – Jul 2008 Horizon Energy Partners B.V. (HEP), The Hague, THE NETHERLANDS**

As a "Reservoir Engineer", my working profile includes

- Well Test Analysis for determination of permeability, skin and reservoir boundary
- Estimates of Resources in place using FLOW grid software.
- Construction and Maintenance of well and field simulation models (black oil) for reservoir development and decision making using E100
- Field development planning by deciding the number of wells, spacing and optimizing perforation intervals for production forecasting.
- Contribution to fluid and rock properties determination.
- Maintain reservoir pressure database management using OFM.
- Determination of well/reservoir characteristics using **decline curve analysis** for oil wells.



**Achievement:** Successfully achieved the project outline and constructed ECLIPSE reservoir model and delivered to Client.

*Training Undergone*

- 12 June – 13 June 2006 Petrel Reservoir Engineering Course (Schlumberger) – The Hague, The Netherlands

 **Sep 2003 – Dec 2005 Technical University of Denmark (DTU), DENMARK**



- M Sc in Petroleum Engineering; (GPA: 9/13 ~ 73%, B)
- Thesis: "**Simulation of CO<sub>2</sub> Injection in Weyburn for EOR and Sequestration** GPA (10/13 ~ 84%, B+)

The aim of the thesis is to study; " the impact of grid refinement through numerical sensitivity calculations when applied on reservoir scale using compositional simulator *Eclipse 300*. The key component to this study includes Equation of State (EOS) modelling to match experimental PVT properties and Minimum Miscibility Pressure (MMP) of Weyburn reservoir fluid - CO<sub>2</sub> mixture with Pedersen et al (1989) characterization procedure and SPECS PVT program developed by IVC-SEP, Technical University of Denmark. The study also examines the effect of various tuning and lumping of components on PVT properties and MMP to minimize the computational requirements. A large 3-D reservoir model containing 44,530 grid blocks, which encompasses 215 wells is developed to predict the future reservoir performance and to optimize the sequestration of CO<sub>2</sub> gas under various operating strategies and development scenarios. Various operating strategies are considered including Continuous CO<sub>2</sub> flood, Water Alternating Gas (WAG) and Hybrid WAG"

**Sep 2001 – Sep 2003 Ravi Dye Ware Company Limited, INDIA**

As a "Chemical Process Engineer", my working profile includes

- Monitor daily production of Malachite Green (M.G.) product.
- Handled troubleshooting during operation.
- Monitored start-up and shut down of process batch plant and maintained shift records.



**Achievement:** Increased in the recovery of M.G product (Powder + crystals) from M.G mother liquor, which results in gained production quantity and decreased effluent concentration by increasing revenues.

**Jul 2000 – Aug 2001**                      **Allana Pvt. Ltd, INDIA**

As a “Chemical Engineer”, my working profile includes

- Monitor daily production of Fats and Meat & Bone Meal product.
- Handled troubleshooting during operation.
- Monitored start-up and shut down of process batch plant and maintained shift records.



 **1997 – 2000**                      **Dr. Babasaheb Ambedkar Technological University, INDIA**

- B Tech in Chemical Engineering (First Class with Distinction); 72.11%.
- Thesis: “Design of Cyclone Separator and Fabric Filter for Air Pollution Control”.



 **1994 – 1997**                      **S.H. Jondhale Polytechnic, INDIA**

- Diploma in Chemical Engineering (First Class); 72.27%.
- Ranked 3<sup>rd</sup> in Polytechnic and 38<sup>th</sup> in Maharashtra state.
- Thesis: “Extraction & Distillation of Oil by Solvent Extraction Method”.



 **March 1994**                      **Mahila Samiti English High School, INDIA**

- Distinction grade; 78%.

### PROFESSIONAL MEMBERSHIP

2009 – 2011	Member of Formation Evaluation Society of Australia	<i>Australia</i>
2003 – 2005	Member of Society of petroleum engineers (SPE), Copenhagen	<i>Denmark</i>
1998 – 2000	Student member of American Oil Chemist Society (AOCS) the	<i>USA</i>
1997 – 2000	Student member of Indian Institute of Chemical Engineering (IICHE)	<i>INDIA</i>

### COMPUTER APPLICATIONS

Reservoir Simulators Software's	Eclipse 100 & 300 (Schlumberger); 3DSL (Stanford University). Ecrin (Kappa), ShoeBox v 4.01, Serafim Future (V0.11.0.21) (Basic Knowledge), OFM (Schlumberger), Also Familiar with SAP
<b>Programming</b>	<b>MATLAB (Basic)</b>
PVT Simulators	PVT Sim, MI – PVT; SPECS (IVC-SEP)
Viscosity Simulators	VISCO-CHECK
Working environment	Windows

### EQUIPMENT'S OPERATED

Core flooding Apparatus (TEMCO)	Inverted Pendant Drop Apparatus (TEMCO)
Density Meter (DE – 40) (METTLER TOLEDO)	Viscometer VISCOLAB 4000 (CAMBRIDGE)
Permeameter & Porosity meter (TEMCO)	
X- Ray CT scanner (SIEMENS – 4 <sup>th</sup> Generation), (TOSHIBA – 3 <sup>rd</sup> Generation)	

### CONFERENCE PRESENTATION

M. Bahar, K. Liu, A. Rashid; **Laboratory Core Flooding Experiments Using Bio-Surfactant and Molasses: Implications for Microbial EOR; IEA – EOR; 21 – 23 September 2009, Canberra, Australia.**

### PUBLICATIONS CONTRIBUTED

M. Bahar, K. Liu, and A. Rashid, **Stimulation of Stable Micro-Emulsion at Oil-Water Interface Using Co-Surfactants as an alternative method for Enhanced Oil Recovery**, SPE 158801, SPE Oil and Gas conference, Perth, Australia, 22-24 October 2012.

Keyu Liu et al, **Laboratory Investigation of Factors Affecting CO<sub>2</sub> Enhanced Oil and Gas Recovery**, SPE – 165270-MS, SPE EOR conference, 2 – 4 July, KL, Malaysia, 2013.

Xiaoyi Wang et al; **Effect of Nutrient Addition on an Oil Reservoir Microbial Population: Implications for Enhanced Oil Recovery**; J Pet Environ Biotechnol 3:118. doi:10.4172/2157-7463.1000118.

Liu, K., Tang, X., Rashid, A. and Wei, X., 2012; **Petroleum migration and accumulation models revisited from a reservoir engineering perspective**; AAPG 2012 International Conference & Exhibition, 16-19 September 2012, Singapore

Bahar, M., Liu, K., Rashid, A., Wei, X. and Wang, X., 2009; **Laboratory core flooding experiments using bio-surfactant and molasses: implications for microbial EOR**; Presented at the 30th IEA Workshop and Symposium on Enhanced Oil Recovery, Sept. 20-23, 2009, Canberra, Australia.

Liu, K., Sayem, T., Bahar, M., Ghafam Al Shahri, Rashid, A., Wei, X. and Volk, H.; **Analysing the success factors behind various EOR techniques using laboratory core flooding experiments**; Invited presentation the IQPC EOR 2009, June 23-25, 2009, K.L., Malaysia.

Liu, K., Rashid, A. and Clennell, B.; 2011; **Laboratory investigation of the behaviour of supercritical CO2 displacing N2 gas in sandstone under reservoir conditions**; A report to Shell Australia. CSIRO Confidential Report No. EP111780, 45 pp.

Li, D., Hendry, P., Sutherland, T., Chyb, M., Sriskantha, S., Wang, X., Ahmed, M., Gong, S., Zabaraz, D., Liu, K., Bahar, M., Rashid, A., Wei, X. and Volk, H.; 2009; **Microbial characteristics of fluids from the Bokor oilfield and their potential applications**; A report to PETRONAS Research Sdn Bhd. CSIRO Petroleum Confidential Report No. 09-008, 54 pp.



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Dated: 21/6/2021

# Individual Contribution to Research Projects (CSIRO) & Publications

Sep 2008 – Aug 2011 **Research Reservoir engineer, CSIRO Petroleum Resources, Perth, AUSTRALIA**

**1. Project Name:** The research project between (**PETRONAS + CSIRO**) which deals with the study of key factors affecting the change in mobility ratio through change in IFT, Bio-clogging, Micro-emulsion techniques and by-products produced in reservoir by selecting right microbes and their nutrients to increase the oil production from the **Bokor Field - Malaysia** using **MEOR** technique.

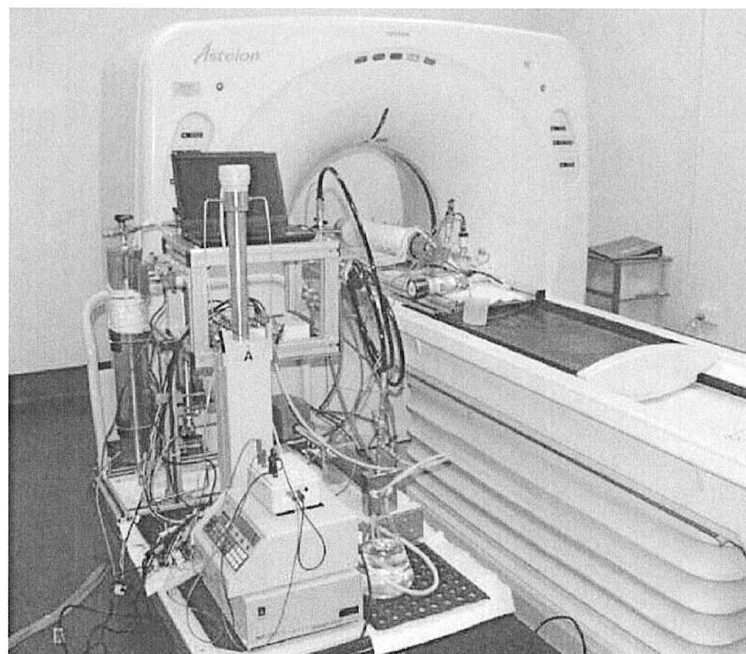
My individual working profile includes

- Operating and Maintenance of HPHT Core flooding apparatus without X Ray CT.
- Operating and Maintenance HPHT Inverted Pendant apparatus for measurement of Interfacial tension (IFT).
- Operating and Maintenance of apparatus for measurement of physical properties of reservoir fluids and core samples.
- Measurement and evaluation of micro-emulsion in oil and water system and effect of them on EOR
- Preparing draft reports and presentations for the client & conferences.

**2. Project Name:** A joint collaborative consulting research project among (**SHELL + UWA + CSIRO**) which deals with the study of displacement of  $N_2$  by supercritical  $CO_2$  in the tight sandstone reservoir of Browse Basin, Australia

My working profile includes

- Design equipment and contribution to development of rig for X-Ray CT as shown below.
- Operating and Maintenance of HPHT core flooding experiments related to gas injection in the tight sandstone rock samples using X-ray CT.
- Preparation & Measurement of Permeability and Porosity of provided rock sample for core flooding experiments.
- **Analyzing results and images of rock samples obtained from CT using image analysis software (IMAGE-J).**
- Documenting report and presentation for the client submission.



## Individual Contribution to Research Projects (CSIRO) & Publications

### CONFERENCE PRESENTATION

1. M. Bahar, K. Liu, A. Rashid; **Laboratory Core Flooding Experiments Using Bio-Surfactant and Molasses: Implications for Microbial EOR**; IEA – EOR; 21 – 23 September 2009, Canberra, Australia.

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1. M. Bahar, K. Liu and A. Rashid; **Stimulation of Stable Micro-Emulsion at Oil Water Interface Using Co-Surfactants as an alternative method for Enhanced Oil Recovery**; SPE 158801; SPE Oil and Gas conference, Perth, Australia, 22-24 October 2012.
2. Keyu Liu, et al; **Laboratory Investigation of Factors Affecting CO<sub>2</sub> Enhanced Oil and Gas Recovery**; SPE – 165270-MS; SPE EOR conference, KL, Malaysia, 2013.
3. Xiaoyi Wang, et al; **Effect of Nutrient Addition on an Oil Reservoir Microbial Population: Implications for Enhanced Oil Recovery**; J Pet Environ Biotechnol; 3:118. doi:10.4172/2157-7463.1000118.
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## References

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