

## **Reza Azin**

Professor

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### **Summary**

Senior lecturer and researcher in reservoir and chemical process engineering. More than 20 years of teaching and consultation experience in the university and industry. Focus on experimental, as well as theoretical and numerical solutions to oil and gas industry. Developing solutions to reservoir and process engineering problems using advanced and hi-tech approaches. Expert in oil and gas reservoir simulation, PVT analysis and modeling, surface facility design, carbon management, and process simulation.

### **Qualifications**

- Fluid and Rock Analysis, SCAL, PVT Analysis, Equation of State Development
- Expert in English Writing, editing, communication
- Excellent presentation and communication skills demonstrated through presenting the results of projects to Oil and Gas Industry with frequent industry meetings and conference presentations
- Experience in dynamic reservoir and PVT modeling with **Eclipse** (E100, E300, PVTi), **CMG** (GEM, IMEX, Winprop), PVTsim, Surface Network Solutions (Pipesim)
- Experience in process modeling and simulation with ASPEN Plus, HYSYS

### **Education**

2002- 2007	<b>Ph.D. in Petroleum/Reservoir Engineering</b> Sharif University of Technology; Tehran, Iran (British Council Scholarship)
1996-1998	<b>M.Sc. In Chemical Engineering</b> Shiraz University, Shiraz, Iran
1992-1996	<b>B.Sc. In Chemical Engineering</b> Petroleum University of Technology, Abadan, Iran

### **Current Research Activities**

- Carbon Capture and Sequestration: Simulation, Geoscience (Geological, Geophysics, Geochemical reactions), Thermodynamics, Flow in porous media (Convection, diffusion)
- Gas condensate: PVT and phase behavior, compositional grading, simulation, well deliverability, mass transfer coefficient, flow in porous media (Pre-Darcy flow)

- Advanced technologies: nano/bio technologies, CT scanning and image processing with applications in wettability alteration for EOR/EGR, biosurfactant synthesis for EOR, wax/asphaltene precipitation inhibition
- Energy and Exergy: energy and exergy analysis for chemical and petrochemical processes, gas refineries, gas boosting systems, flare gas recovery, etc.

### **Professional Association**

- Member of Iranian Association of Chemical Engineering (IACHE) Since 1996.

### **Thesis**

MS. Thesis: Modeling of the industrial furnaces using the Zone method; Supervisor: Prof. Mahmood Moshfeghian

Ph-D thesis: Investigation of the VAPEX process in fractured carbonate reservoirs; Supervisors: Dr. Riaz Kharrat; Prof. Cyrus Ghotbi

### **Languages:**

Persian: Native

English: Fluent, IELTS score: 7 out of 9

Arabic: Basic

German: Basic

### ***Experiences***

#### **Educational Experiences**

##### **Undergraduate Courses**

- Basic Reservoir Engineering I, Reservoir Engineering II, Rock Properties courses, Sharif University of Technology, 2007-8
- Basic Thermodynamics, Applied thermodynamics, Physical Chemistry, Principles of Petroleum Refining, Applied Numerical methods in Chemical Engineering, Engineering Mathematics, Plant Design and Economics for Chemical Engineers, Water and Waste Water Treatment, Technical English for Chemical Engineers, Basic Reservoir Engineering, Mass Transfer, Environmental Engineering, Principles of Petroleum Engineering, Persian Gulf University, 1998-present.

- Chemistry of Petroleum and Polymers, Laboratory for Chemistry of Petroleum and Polymers, Technical English for Chemical Engineering Students, Principles of measurement, Al – Zahra School of Technical and Professional Educations for 9 semesters (1998-2003)
- Computer Fundamentals and Application for Management and Accounting, Elementary Differential Equations, Mathematics, Programming with Fortran, Numerical Analysis, Payam- e- Noor University, Bushire section (2005-6)

### **Graduate Courses**

- Advanced Reservoir Engineering (Master), Advanced Reactor Engineering (Master), Optimization of Chemical Processes (Master), Phase Behaviour of Hydrocarbons (Master), Naturally Fractured Reservoirs (Master), Advanced Reservoir Engineering (Master), Fluid Flow through Porous Media (Master), Special Topics in Petroleum Engineering (Master), Advanced Transport Phenomena (PhD), Persian Gulf University, 2007-present.

### **Research Experiences**

- ١) Investigator of the Project: *Kinetic Study of Condensate Mercaptan Oxidation in presence of IVKAZ Catalyst*, Artin Azma, Contract No. 275-0016, 2022-present
- ٢) Investigator of the Project: *Comprehensive HAZOP and HAZID studies in Site 2 of Bushehr Petrochemical Complex (BUPC)*, Bushehr Petrochemical Complex, Contract No. 52-00/554, 2021-Present
- ٣) Principal Investigator of the Project: *Technology development for Production Optimization and Enhanced Oil Recovery in Nowrooz Oil Field*, PGU/IOOC Joint Project, Contract No. 0020710099037, 2021-present
- ٤) Investigator of the Project: *Technology development for Production Optimization and Enhanced Oil Recovery in Nowrooz Oil Field, Economic Studies*, PGU/IOOC Joint Project, Contract No. 0020710099037, 2021
- ٥) Investigator of the Project: *Technology development for Production Optimization and Enhanced Oil Recovery in Nowrooz Oil Field, Production Studies*, PGU/IOOC Joint Project, Contract No. 0020710099037, 2021
- ٦) Investigator of the Project: *Technology development for Production Optimization and Enhanced Oil Recovery in Nowrooz Oil Field*,

- RCAL/SCAL Studies**, PGU/IOOC Joint Project, Contract No. 0020710099037, 2021
- ٧) Investigator of the Project: ***Process Simulation and Energy Optimization in Gas Condensate separation (unit 200) unit of Nouri Petrochemical Complex***, Noori (Borzouyeh) Petrochemical Complex, Contract No. G96/23, 2017
- ٨) Investigator of the Project: ***Development of Intelligent Techniques for Predicting Gas Condensate Physical Properties and Application to CO<sub>2</sub> Injection into Gas Condensate Reservoirs***, Iran National Science Foundation (INSF), Contract No. 94000003, 2016
- ٩) Investigator of the Project: ***Technology Roadmap for Carbon Capture and Sequestration (CCS)***, Pars Special Economic Energy Zone (PSEEZ), Contract No. 76898, 2016
- ١٠) Innovation Project: ***Design of a Gas Properties Software***, Persian Gulf Science and Technology Park (PGSTP), Contract No. P/94/102984, 2016
- ١١) Innovation Project: ***Synthesis of nanoparticle for wettability alteration of gas condensate reservoirs***, Persian Gulf Science and Technology Park (PGSTP), Contract No. P/94/102039, 2015
- ١٢) Investigator of the Project: ***Flaring Status and Environmental Impacts in South Pars (Assaluyeh) Region***, 2014, funded by Bushehr Environmental Protection Department, Contract No. 122-15111
- ١٣) Investigator of the Project: ***Study of Geochemical Reactions of Acid Gas-Saline Aquifer Systems in Carbonated Formations***, 2013, funded by Bushehr Governor Department of Training and Research
- ١٤) Investigator of the Project: ***Analysis of Production Data in South Pars Gas Condensate Field***, 2012, funded by NIOC-EOR institute (Pardis Reserach Park), Contract No. 91/10956
- ١٥) Co-Investigator of the Project: ***Fluid Characterization in South Pars Gas Condensate Field***, 2012, funded by NIOC-EOR institute (Pardis Reserach Park), Contract No. 91/10951
- ١٦) Investigator of the project: ***Study of Acid Gas Solubility in formation water***, 2011, funded by Persian Gulf University in a joint program with National Elite Foundation, contract no. 19/1302

- ١٧) Co-investigator of the project: *Design of a framework for corporate social responsibility in Oil, Gas, and Petrochemical Industries-Case Study: Pars Special Energy Economic Zone (PSEEZ)*, 2010, funded by Pars Special Energy Economic Zone (PSEEZ)
- ١٨) Investigator of the project: *Underground Sour Gas Storage in a depleted Gas Reservoir*, 2010, funded by Persian Gulf University, contract no. 19/987
- ١٩) Co-Investigator of the project: *Prediction of Crude Oil Density using Gaussian Process*, 2010, funded by Persian Gulf University, contract no. 19/263
- ٢٠) Co-Investigator of the project: *Enhanced Oil Recovery through Application of Nano-Particles for wettability alteration of reservoir Rocks*, 2010, Research and Development office of National Iranian Oil Company (NIOC-R&D), Institute of Petroleum Engineering, University of Tehran
- ٢١) Investigator of the Project: *Feasibility Study of Acid Gas Disposal into Underground Reservoirs*, 2009, funded by Research and Development office of National Iranian Oil Company (NIOC-R&D)
- ٢٢) Co-Investigator of the project: *Design and Work plan of Strategic Studies and Hi-tech Technologies Research Institute*, 2009, funded by Bushehr Governor Department of Human Resource
- ٢٣) Investigator of the Project: *Simulation study of Underground Gas Storage in a fractured gas reservoir*, 2009, funded by Persian Gulf University, contract no. 19/131
- ٢٤) Investigator of the Project: *Prediction of Undersaturated Oil Density for Iranian Oil Fields*, 2008, funded by Research and Technology office of National Iranian Oil Company (NIOC-R&T), contract no. 81-87011
- ٢٥) Investigator of the Project: *Simulation study of Underground Gas Storage in a depleting gas reservoir*, 2008, funded by Persian Gulf University
- ٢٦) Co- Investigator of the project: *The investigation of Using Thermal Methods for Heavy Oil Recovery*, Petroleum University of Technology, funded by NIOC-R&D, 2002-2006
- ٢٧) Investigator of the Project: *Design and Work plan of Persian Gulf Oil and Gas Research Institute*, 2006, Foroozan Research Group, Funded by Persian Gulf University

- ۲۸) Investigator of the Project: *Feasibility Study of Base Oil Production Plant*, Darya Danesh Consulting Engineers, 2006
- ۲۹) Investigator of the Project: *The Oil Industry in Bushire Province*, Darya Danesh Consulting Engineers, funded by IRIB, 2006
- ۳۰) Investigator of the project: *Development of Auxiliary Industries in Bushehr Province with respect to Oil, Gas, and Petrochemical Development Plants in Pars Special Energy Economic Zone*, Darya Danesh Consulting Engineers, funded by Bushehr Management and Planning Organization, Bushehr, 2003-4
- ۳۱) Investigator of the project: *Environmental Aspects of the Oil, Gas, and Petrochemical Development Plans in Bushehr Province*, Darya Danesh Consulting Engineers, funded by Bushehr Management and Planning Organization, Bushehr, 2003-4
- ۳۲) Co- Investigator of the project: *Corresponding- states correlation for compressed liquid densities*, 2003, funded by Persian Gulf University
- ۳۳) Co- Investigator of the Project: *Small-Scale Petrochemical plants*, Persian Gulf University, funded by Bushehr Management and Planning Organization, 2001
- ۳۴) Co- Investigator of the project: *Desalination of Brackish Water using the carrier gas process*, 2002, funded by Persian Gulf University
- ۳۵) Investigator of the project: *Experimental study on the deodorization of shark liver oil*, 2001, funded by Persian Gulf University

### **Supervision of Industrial/Research Projects**

- ۱) Project: *Accredited Environment Laboratory using Portable Equipments for Air and Sound Pollution Measurements*, funded by Persian Gulf Research and Technology Park, 2013
- ۲) Project: *Feasibility and experiments of water recovery from humid air in Coastal zones of Bushehr Province*, Funded by Bushehr Water Company, 2011
- ۳) Project: *Bench-Scale study of Salt Production by Re crystallization Process using Drains of Desalination Plants at PSEEZ*, funded by Pars Special Economic Energy Zone (PSEEZ), 2009

- ξ) Project: *Intelligent Fire Alarm and Extinguish system Based on Nano Technology*, funded by Persian Gulf Research and Technology Park, 2009
- ο) Project: *Feasibility Study of Gas Recycling in Naturally Fractured Gas Condensate Reservoirs-South Zagros*, funded by Iranian Central Oil Fields Company (ICOFC), 2008
- ϖ) Project: *Experimental Study of Gas Injection Effects on Rock and Fluid of Sarajeh Reservoir During Underground Gas Storage Process*, funded by Iranian Central Oil Fields Company (ICOFC), 2008

## **Postdoc**

- ϗ) Zirrahi, Mohsen, Reza Azin, Shahriar Osfour, and Hassan Hassanzadeh, 2016, **Modeling and Synthesis and asphaltene inhibitors for production well and crude oil pipelines**, INSF, Grant number 94027618

## **PhD Thesis Contribution**

- Ϙ) **Investigation of parameters affecting capillary trapping mechanisms in gas condensate reservoirs and its elimination to enhance gas condensate recovery**, Fatemeh Kazemi, Persian Gulf University, 2021
- ϙ) **Biofuel production by hydrothermal liquefaction of selected Persian gulf algae**, Ziba Borazjani, Persian Gulf University, 2020
- Ϛ) **Experimental and modeling investigation of physical properties, corrosion of disulfide oil and its effect on the prevention of asphaltene deposition**, Farid Mehraban, Persian Gulf University, 2019
- ϛ) **Fabrication of dye-sensitized solar cells (DSSCs) sensitized with extracted pigments from plants of Persian Gulf zone based on electrospun nanofibers**, Maliheh Golshan, Persian Gulf University, 2018
- Ϝ) **Fabrication and Characterization of Alginate-based drug loaded nanofibers for wound dressing**, Maryam Najafi Asl, Persian Gulf University, 2018

- ٦) **Improvement of rheological and filter cake properties of water-based drilling fluid using nanoparticles**, Ehsan Pakdaman, Persian Gulf University, 2016
- ٧) **Experimental investigation and mathematical modeling of transport and retention of bio-nanoparticles into oil reservoir in water flooding**, Raziye Ahmadi, Persian Gulf University, 2017
- ٨) **Investigation of Mass Transfer through Revaporization of Condensate into Gas Phase during Gas Injection**, Mohammad Mohammadi Baghmollaei, Persian Gulf University, 2016
- ٩) **Experimental Study of PPD's, Thermodynamic and Hydrodynamic Modeling of Wax Deposition in Oil and Stabilized Condensate Pipelines**, Mojtaba Mansourpour, Persian Gulf University, 2016
- ١٠) **Development of Simulation of Asphaltene Deposition in Production Wells**, Seyed Abdollah Shojaei, Persian Gulf University, 2015
- ١١) **Wettability Alteration in Gas Condensate Reservoirs using Nanoparticles**, Rahmatollah Saboori, Persian Gulf University, 2015
- ١٢) **Modeling Development of Compositional Grading in Hydrocarbon Reservoirs**, Mahboobeh Kiani Zakheradi, Persian Gulf University, 2014

### **MSc/BSc Thesis Contribution**

#### **Critical Drilling Depth Determination Using Machine Learning Methods, A Case Study of One of the Oilfields in Southwest of Iran**

- ١) **Critical Drilling Depth Determination Using Machine Learning Methods, A Case Study of One of the Oilfields in Southwest of Iran**, Hamed Azadian, 2021
- ٢) **Feasibility of filter dryer production using hydrophilic Gilsonite nanoparticles**, Reza Sadeghi, 2020
- ٣) **Production of Biofuel from Persian Gulf Algae using Hydrothermal Liquefaction Method**, Farzad Bayat, 2020
- ٤) **Experimental investigation of oil and gas trapping in gas condensate reservoirs**, Fatemeh Seifi, 2019
- ٥) **Numerical simulation of CO<sub>2</sub> storage and methanation in a depleted gas reservoir in the presence of microorganism**, Zohreh Safari, 2019

- 7) **Experimental study of the effect of rock ingredients on enhanced oil recovery using low salinity/ smart water**, Fatemeh Babaeian, 2019
- ٧) **Study of Rock Type Effect Upon Condensate Reservoirs Recovery Through Gas Injection Operation**, Azitha Ghaderi, 2019
- ٨) **Study of Asphaltene Stability in Oils and their Blends in the Presence of Various Additives**, Mehdi Noorabadi, 2019
- ٩) **Study of the Impact of Carbon Dioxide Gas Injection on Porosity and Permeability of Aquifer Using Imaging Technology**, Fatemeh Famoori, 2019
- ١٠) Advisor thesis entitled: **“Investigation of scale precipitation reduction in MEG regeneration unit using silica nanoparticles”** by Samira Soleymani, Persian Gulf University, 2017
- ١١) Advisor thesis entitled: **“Implementation of the Double-Scale Method for Simulation of Near Wellbore Flow in Gas-Condensate Reservoir in Open-Source Software MRST”** by Niloofar Salmani, Persian Gulf University, 2017
- ١٢) Supervisor of thesis entitled: **“Effect of Carbonate Rock Type on Wettability Alteration of Gas-Condensate Reservoirs Using Silica Nanofluid”** by Arefeh Naghizadeh, Persian Gulf University, 2017
- ١٣) Supervisor of thesis entitled: **“Investigation of the effect of relative permeability on oil and gas recovery factor and productivity in one of South Zagros fields”** by Zohreh Farmani, Persian Gulf University, 2017
- ١٤) Supervisor of thesis entitled: **“Investigation of Reserves, Reservoir Quality and Productivity of Aquifer in Jahrum Formation”** by Mehdi Owji, Persian Gulf University, 2017
- ١٥) Supervisor of thesis entitled: **“Investigation of formation's geological and reservoir features in Gulf coastal zone, zagros basin, surmeh and lali mountain”** by Danial Farokhian, Persian Gulf University, 2017
- ١٦) Supervisor of thesis entitled: **“Experimental study of the effects of nanoparticles on the efficiency of chemical demulsifiers”** by Ahmad Khorrani, Persian Gulf University, 2017
- ١٧) Supervisor of thesis entitled: **“Investigation of Effective Parameters Involving in Condensate Recovery Using Nanoparticles”** by Zahra Sakhaei, Persian Gulf University, 2017

- ۱۸) Supervisor of thesis entitled: **“Investigating the various mechanisms of wettability alteration and dynamic spreading of nanofluids on solids”** by Mitra Abbaspour, Persian Gulf University, 2017
- ۱۹) Supervisor of thesis entitled: **“Study the effect of compositional gradient on production data in the gas-condensate reservoirs”** by Fatemeh Torkashvand, Persian Gulf University, 2016
- ۲۰) Advisor thesis entitled: **“Feasibility study of smart water (low salinity water) injection in one of Iranian oil reservoirs”** by Mohammad Taghi Rezaee, Persian Gulf University, 2016
- ۲۱) Advisor of thesis entitled: **“Technical and Economic Evaluation of the South Pars Gas Transmission to Nearby Depleted Reservoir In Order To Manage Consumption”** by Shahin Rameshi, Petroleum University of Technology, 2016
- ۲۲) Supervisor of thesis entitled: **“Investigation of the Optimum Strategy for Quality Control of PVT Data, Fluid Characterization and EOS Tuning for Gas Condensate Fluids”** by Seyyedeh Fatemeh Mousavi, Persian Gulf University, 2016
- ۲۳) Supervisor of thesis entitled: **“Study of optimum production rate from a gas condensate reservoir”** by Hassan Sedaghati, Persian Gulf University, 2016
- ۲۴) Supervisor of thesis entitled: **“Wettability Alteration in Oil Reservoir by Nanoparticles”** by Iman Amareh, , Persian Gulf University, 2016
- ۲۵) Supervisor of thesis entitled: **“Numerical and Experimental Evaluation of CO<sub>2</sub> Sequestration in Saline Aquifers”** by Yasin Gholami, Persian Gulf University, 2014
- ۲۶) Supervisor of thesis entitled: **“Feasibility and simulation of CO<sub>2</sub> gas sequestration and storage in saline aquifers”** by Masoud Asgari, Persian Gulf University, 2014
- ۲۷) Supervisor of thesis entitled: **“An Investigation into Integrated Modeling of Hydraulic Fracture Initiation Process in a Wellbore Using Finite Elements Approach”** by Abbas Movassaq, Persian Gulf University, 2014
- ۲۸) Supervisor of thesis entitled: **“Extension of the four-coefficient model for a gas condensate Reservoir in South of Iran”** by Amin Mohammad Rezaei, Persian Gulf University, 2014

- ۲۹) Supervisor of thesis entitled: “**An investigation into Integrated Modeling of Hydraulic Fracture Initiation Process in a wellbore using Finite Element Approach**” by Abbas Movassaq, Persian Gulf University, 2014
- ۳۰) Supervisor of thesis entitled: “**Modeling solubility of CO<sub>2</sub> in formation water by SAFT equation of State**” by Hassan Rezaei Haghighi, Persian Gulf University, 2014
- ۳۱) Co-Supervisor of thesis entitled: “**Simulation and Optimization of Mercaptane Removal unit in South Pars Gas Complex (SPGC)-Phase 5**” by Mohammad Haqiqat Manesh, Tehran University, 2013
- ۳۲) Supervisor of thesis entitled: “**Well Flow Modeling in Gas Condensate Reservoir**” by Mohammad Hossein Khosravi Boushehri, Leoben University of Austria, 2014
- ۳۳) Supervisor of thesis entitled: “**Synthesis of nanoparticles using reverse micelle system for enhanced oil recovery application**” by Mahshid Nateq, Persian Gulf University, 2014
- ۳۴) Supervisor of thesis entitled: “**Flow behavior of well and surface facilities in Gas Condensate Reservoirs**” by Robab Chahshoori, Persian Gulf University, ۲۰۱۳
- ۳۵) Supervisor of thesis entitled: “**Production Data Analysis in Gas Condensate Reservoirs**” by Foroozan Sadeghi, Persian Gulf University, 2013
- ۳۶) Supervisor of thesis entitled: “**Development of thermodynamic models for prediction of gas hydrate formation conditions in the presence of CO<sub>2</sub>**” by Samira Mardaneh, Persian Gulf University, 2013
- ۳۷) Supervisor of thesis entitled: “**Simulation of acid gas injection into fractured aquifers**” by Hamid Reza Amiri, Persian Gulf University, 2013
- ۳۸) Supervisor of thesis entitled: “**Modeling and Simulation of the VAPEX Process for Enhanced Oil Recovery**” by A. Khalegh Keshtgar, Semnan University, 2011
- ۳۹) Supervisor of thesis entitled: “**Geochemical Reactions for Acid Gas/Formation Water System**” by Najmeh Mehrabi, Persian Gulf University, 2011
- ۴۰) Supervisor of thesis entitled: “**Mathematical Modeling of Acid Gas Injection into Aquifer Reservoirs**” by S. Mostafa Jafari Raad, Persian Gulf University, 2011

- ξ١) Supervisor of thesis entitled: “**Optimization of Performance of Gas Condensate Stabilization unit by Prediction of the Components Thermodynamic Properties**” by Ebrahim Dianat, Persian Gulf University, 2011
- ξ٢) Supervisor of thesis entitled: “**Thermodynamic Modelling of Acid Gas Solubility in Aquifers**” by Zeinab Alizadeh, Persian Gulf University, 2010
- ξ٣) Co-Supervisor of thesis entitled: “**Modelling and Simulation of Non-Darcy Flow During Underground Gas Storage in one of Iranian Depleted Reservoirs**” by Hamzeh Dehqan, Sharif University of Technology, 2010
- ξ٤) Supervisor of thesis entitled: “**Design of Cement and Well Cementing for Underground Gas Storage Wells**” by Adib Shah Vali, Islamic Azad University, Omidyeh Branch, 2011
- ξ٥) Co-Supervisor of thesis entitled: “**Effect of Solvent Mixtures and Solvent Injection Rate on Vapour Extraction Process**” by Abdolkarim Hosseinipour, University Technology Malaysia (UTM), 2011
- ξ٦) Supervisor of thesis entitled: “**Simulation of Artificial Lift and Production Optimization for an Iranian Southwest Oil Field**” by Reza Heidari, Islamic Azad University, Omidyeh Branch, 2011
- ξ٧) Supervisor of thesis entitled: “**Simulation Study of Flare Gas Injection into a depleted oil reservoir**” by Saeid Hashempour, Islamic Azad University, Omidyeh Branch, 2010
- ξ٨) Supervisor of thesis entitled: “**Simulation Study of Acid Gas Injection into a depleted oil reservoir**” by Seyyed Mostafa Moravvej Al-e-Ali, Islamic Azad University, Omidyeh Branch, 2010
- ξ٩) Supervisor of thesis entitled: “**Application of Artificial Lift for increasing recovery factor in Dena Oil Field**” by Alikaram Kianizadeh, Islamic Azad University, Omidyeh Branch, 2010
- ο٠) Supervisor of thesis entitled: “**Modeling selective hydrogen sulfide absorption using MDEA solution in a packed column**” by Morteza Afkhamipour, Persian Gulf University, 2009
- ο١) Co-Supervisor of thesis entitled: “**Underground Gas Storage in a Depleted Fractured Gas Reservoir**” by Reza Malakuti, Petroleum University of Technology, 2009

- ۲) Supervisor of thesis entitled: “**Thermodynamic Modelling and Experimental Study of Asphaltene Precipitation in Strategic Underground Petroleum Reservoirs**” by Mohammad Hossein Panahbar, Islamic Azad University, Omidiyeh Branch, 2009
- ۳) Supervisor of thesis entitled: “**Modelling Wax Precipitation in Strategic Underground Petroleum Reservoirs**” by Niaz Neisani Samani, Islamic Azad University, Omidiyeh Branch, 2009
- ۴) Supervisor of thesis entitled: “**Well test analysis in an underground gas storage reservoir**” by Davood Faravash, Islamic Azad University, Omidiyeh Branch, 2009
- ۵) Advisor of thesis entitled: “**Determination of Dispersion Coefficient in VAPEX Process Through Mathematical Modeling**” By Somayeh Goodarzi, Petroleum University of Technology, 2006
- ۶) Advisor of thesis entitled: “**Experimental Study of VAPEX Process for Fractured Reservoirs**” By Ehsan Marzbanfard, Petroleum University of Technology, 2005
- ۷) Advisor of thesis entitled: “**Investigation of the VAPEX Process in High-Pressure Fractured Reservoirs**” By Behzad Rostami, Petroleum University of Technology, 2005
- ۸) Supervising about 25 BS Projects at Persian Gulf University, 1998-present

## **Professional Experiences**

- Deputy of Research, Technology and International affairs, Faculty of Petroleum, Gas and Petrochemical Engineering (FPGPE), PGU, 2021-present
- Head of Oil and Gas Research Center, Persian Gulf University, 2020-present
- Vice Chair in Forum F14-Technology Innovation in Mid- and Downstream Gas, 23rd World Petroleum Congress Self-employed, Huston, USA, Dec. 2021
- Scientific Secretary of the 3<sup>rd</sup> International Oil, Gas, and Petrochemical Conference (OGPC 2020), Persian Gulf University, Dec. 2020
- Scientific Secretary of the 2<sup>nd</sup> International Oil, Gas, and Petrochemical Conference (OGPC 2018), Persian Gulf University, Nov. 2018

- Head of National Elites Foundation, Bushehr Province, 2014-2019
- Scientific Secretary of the first Underground Oil & Gas Conference and Exhibition, Tehran University, 20-21 May 2014
- Executive Secretary of the first Conference on Nanotechnology in Oil, Gas and Petrochemical Industries, Persian Gulf University, Bushehr, Iran, 14 May 2014
- Member of the Gas Industry Council, University of applied science, 2012-2014
- Secretary of the 2<sup>nd</sup> National Persian Gulf Knowledge Award, Bushehr, Iran, 2012
- Secretary of the 2<sup>nd</sup> National Persian Gulf Knowledge Award, Bushehr, Iran, 2011
- Deputy of Technology and innovation at Persian Gulf Research and Technology Park, 2010-2012
- Secretary of the 1<sup>st</sup> National Persian Gulf Knowledge Award, Bushehr, Iran, 2010
- Member of research council at Pars Special Energy Economic Zone, 2009-present
- Member of Bushehr Science Road Map Project, 2009
- Member of Persian Gulf Science and Technology Park, 2009-present
- PGU Representative at research council of Bushehr Gas Company, 2008-present
- PGU Representative at PGU office of Technical-Scientific affairs, Pars Special Energy Economic Zone, 2007-9
- Member of Bushehr University of applied science and distinguished committee, 2007-present
- Tehran Energy Consultants, 2007-8 (Project: Underground Gas Storage)
- Daryadanesh Consulting Engineers, 2003 -2006
- Chairman of the Iranian Association of Chemical Engineering-Bushehr Branch, 2005 –present
- Member of the Persian Gulf University Research Council, 2002
- Member of the committee for Applied Research Projects, Bushehr Department of Managing and Planning, 2002

- Fajr Gas Refinery, Kangan, summer 1996, winter 2001
- Padena Consulting Engineers, 1997
- Kharg Petrochemical Complex, Kharg Island, summer 1995

### **Awards and Honors**

- Distinguished provincial researcher in Engineering, Bushehr Province, Iran, 2021
- Distinguished researcher at the Faculty of Petroleum, Gas and Petrochemical Engineering, Persian Gulf University, 2020
- Visiting Professor at University Teknologi Malasia (UTM), 2011
- Young Assistant Professors' Grant of Iranian Elite Foundation, 2010
- Rank#1 for the Translation of the Book titled as" Applied Petroleum Reservoir Engineering" by Amirkabir University of Technology, Tehran, Iran, 2011
- Distinguished provincial researcher in Engineering, Bushehr Province, Iran, 2009, 2016
- Distinguished researcher at the School of Engineering, Persian Gulf University, 2009
- 1<sup>st</sup> PhD Graduate in Petroleum Engineering from Iranian Universities
- Partial Scholarship from British Council, Tehran Office, 2004
- Rank#2 in the Engineering section of the 4<sup>th</sup> Khawrazmi Scientific Festival(youth section), for design, construction and experimental studies on a desalination pilot plant operating on the carrier gas process, 2002
- Distinguished researcher at the School of Engineering, Persian Gulf University, 2001

### **Patents/ Innovations**

- ١) Chemical Formulation of Modified Water-wet Gilsonite and its nanoparticle preparation to improve performance of water-based drilling fluids for operation at high temperature, IR patent# 139850140003004367-100470, registered in Iran Patent Office, 2020/02/26, Islamic Republic of Iran
- ٢) Glass cell for acid gas dissolution and measurement of gas diffusion in liquid, IR patent no. 85870, registered 9/6/2015, Islamic Republic of Iran
- ٣) Formulation of a special fibered cement for underground gas storage wells, IR patent no. 72260, registered 4/11/2011, Islamic Republic of Iran

## Workshops attended

- ۱) New Trends in Managing Fractured Carbonates Reservoirs, by: Prof. Reza Fassihi, SPE-Iran Section, Tehran, Iran, 10-11 July, 2010
- ۲) Marketing and Commercialization of Research, presented by: Dr. Kurosh Shirvani, Persian Gulf University, 2009
- ۳) Reservoir Simulation of Fractured Carbonate Reservoirs, presented by: Dr. V. Haugse, NIOC, 2005
- ۴) Integrated Surface/Sub-surface Modelling: Impact on Field Planning, Ed-Leung Case, presented by: Prof. K. Ghorayeb, NIOC, 2005
- ۵) Geoframe Petrophysics course, Schlumberger, Tehran Office, 2002
- ۶) Eclipse: Black Oil (E100), Compositional (E300), PVTi, Schlumberger, Tehran Office, 2003
- ۷) Nano thermodynamics workshop, presented by Prof. G.A. Mansouri, Kashan University, 2002

## Workshops Presented

- ۱) **Mercaptan Removal and Condensate Sweetening**, Artin Azma, Tehran, Iran, March 2023
- ۲) **Writing Technical and Scientific Papers**, Pars Special Economic Energy Zone, Assaluyeh, Iran, August 2013
- ۳) **Writing and Presenting Technical Documents**, Persian Gulf Science and Technology Park, Bushehr, Iran, May 2012
- ۴) **Persian Gulf Oil Pollution**, Pars Special Economic Energy Zone, Assaluyeh, Iran, July 2009

## Book-Book Chapter

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## Journal Publications and Conference Presentations

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#### (a-1) Refereed English Language Journals:

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**(a-2) Refereed Persian Language Journals:**

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## **b- Conference Presentations**

### **(b-1) Refereed English Language Proceedings:**

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- Conference on Oil, Gas, and Petrochemical Engineering (OGPC 2022), Persian Gulf University, Bushehr, Iran .21-22 December
- ϣ. Kazemi, Fatemeh, Reza Azin, Shahriar Osfouri, 2022, ***Liquid Repellency in Gas Condensate Reservoirs Using Different Chemical Treatment Agents***, 4<sup>th</sup> International Biennial Conference on Oil, Gas, and Petrochemical Engineering (OGPC 2022), Persian Gulf University, Bushehr, Iran .21-22 December
  - ϔ. Hajizadeh, Abdollah, Reza Azin, Isa Heydari, and Mohamad MohamadiBaghmolaei, 2018, ***The Effects of Using Multi-Lean Amine Streams Approach in Gas Sweetening Plant Performance***, presented at the 2<sup>nd</sup> International Biennial Oil, Gas and Petrochemical Conference (OGPC2018) organized by Persian Gulf University and Iranian Association of Chemical Engineer, 14 November, Bushehr, Iran
  - ϕ. Ahmadi, Razieh, Shahriar Osfouri, and Reza Azin, 2018, ***Optimization of Factors Affecting Oil Recovery During Water Flooding by DE Algorithm***, presented at the 2<sup>nd</sup> International Biennial Oil, Gas and Petrochemical Conference (OGPC2018) organized by Persian Gulf University and Iranian Association of Chemical Engineer, 14 November, Bushehr, Iran
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  - ϗ. Famouri, Fatemeh, Reza Azin, and Shahriar Osfouri, 2018, ***A Method for Estimating Porosity of Asmari Rock Types using X-ray CT***

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  ٩. Farmani, Zohreh, Danial Farokhian, Reza Azin, Mohammad Mallahi, and Manouchehr Vallizadeh, 2018, ***New Correlation for Estimation of Water/Oil Relative Permeability Using Multi-Gene Genetic Programming***, presented at the 2<sup>nd</sup> International Biennial Oil, Gas and Petrochemical Conference (OGPC2018) organized by Persian Gulf University and Iranian Association of Chemical Engineer, 14 November, Bushehr, Iran
  ١٠. Zahedizadeh, Parviz, Abdollah Hajizadeh, Isa Heydari, Mohamad Mohamadi-Baghmolaei, and Reza Azin, 2018, ***Optimization of Gas Sweetening Plant with Specific Energy Consumption Approach***, presented at the 2<sup>nd</sup> International Biennial Oil, Gas and Petrochemical Conference (OGPC2018) organized by Persian Gulf University and Iranian Association of Chemical Engineer, 14 November, Bushehr, Iran
  ١١. Seifi, Fatemeh, Zohreh Farmani, Reza Azin, and Shahriyar Osfour, 2018, ***Measurements of Non-Wetting Phase Trapping in Porous Media using Sand Packs***, presented at the 2<sup>nd</sup> International Biennial Oil, Gas and Petrochemical Conference (OGPC2018) organized by Persian Gulf University and Iranian Association of Chemical Engineer, 14 November, Bushehr, Iran
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۱۵. Owji, Mehdi, Reza Azin, Masoud Riazi, and Ali Ranjbar, 2018, *Feasibility study of fresh water storage capacity in Asmari-Jahrum formation, Chahpir anticline*, presented at the 80<sup>th</sup> EAGE Annual Conference and Exhibition, 11-14 June, Copenhagen, Denmark
۱۶. Zarei, Fereshteh, Reza Azin, and Shahriar Osfouri, 2018, *Prediction of CO<sub>2</sub> diffusion coefficient in condensate by pressure decay method*, presented at the 80<sup>th</sup> EAGE Annual Conference and Exhibition, 11-14 June, Copenhagen, Denmark
۱۷. Farokhian, Danial, Reza Azin, and Ali Ranjbar, 2018, *Application of Medical and Dental CT-Scan For Characterizing Carbonate, Evaporates, Marl and Sandstone*, presented at the 80<sup>th</sup> EAGE Annual Conference and Exhibition, 11-14 June, Copenhagen, Denmark
۱۸. Hajizadeh, Abdollah, Fatemehsadat Mirghaderi, Reza Azin, Hamid Rajaei, 2018, *Optimization and Energy Efficiency Investigation of an Industrial Gas Condensate Separation Plant*, presented at the 16<sup>th</sup> International Conference on Clean Energy (ICCE-2018), May 9, Famagusta, Cyprus
۱۹. Soleymani, Samira, Shahriar Osfouri, Reza Azin, and Alireza Akbarzadeh, 2018, *Effect of Silica Nanoparticles on Decreasing Scale Deposition in Mono-Ethylene Glycol Solution*, presented at the 10<sup>th</sup> International Chemical Engineering Congress & Exhibition (IChEC2018), May 5-8, Isfahan, Iran
۲۰. Farmani, Zohreh, Reza Azin, Rouhollah Fatehi, and Mehdi Escrochi, 2018, *Investigation the Effect of Gas Flow Rate on Gas/Oil Relative*

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۲۱. Mirghaderi, Fatemehsadat, Abdollah Hajizadeh, Reza Azin, and Hamid Rajaei Abarghouei, 2018, *Simulation and Evaluation of Different Approaches of an Industrial Gas Condensate Prefractionation Unit*, presented at the 10<sup>th</sup> International Chemical Engineering Congress & Exhibition (IChEC2018), May 5-8, Isfahan, Iran
۲۲. Ahmadi, Raziieh, Shahriar Osfouri, and Reza Azin, 2017, *Self-production of CaCO<sub>3</sub> Nanoparticles from Persian Gulf Marine Resource*, 2nd international and 10th national Biotechnology conference of the Islamic Republic of Iran, August 29-31, Karaj, Iran
۲۳. Zahra Sakhaei, Reza Azin, Shahriar Osfouri, 2016, *Assessment of empirical/theoretical relative permeability correlations for gas-oil/condensate systems*, presented at 1st Biennial Conference on Persian Gulf Oil, Gas and Petrochemistry, 20 April, Bushehr, Iran
۲۴. Mohamadi-Baghmolaei, Mohamad, Ahmad Azari, Reza Azin, Ahmad Khorami, 2016, *Numerical Investigation on the Applicability of Silica/Water Nanofluids in Porous Medium for EOR Enhancement*, presented at 1st Biennial Conference on Persian Gulf Oil, Gas and Petrochemistry, 20 April, Bushehr, Iran
۲۵. Jafari Raad, Seyed Mostafa, Reza Azin, and Shahriar Osfouri, 2015, *Investigation of ion interactions effect on the diffusivity of CO<sub>2</sub> into saline aquifers*, CSCHE 2015 Conference and Exhibition, October 4th - 7th, Calgary, Canada
۲۶. Mohamadi-Baghmolaei, Mohamad, Reza Azin, Shahriar Osfouri, and Zeinab Zarei, 2015, *Finding proper combination of mixing rules and empirical correlations for predicting gas condensate Z-factor*, presented at 9th International Chemical Engineering Congress & Exhibition (IChEC 2015), Shiraz, 26-28 Dec., Iran
۲۷. Yazdani, Saeedeh, Reza Azin, Shahriar Osfouri, and Yasin Gholami, 2015, *A New Interpretation of Non-Fickian Transport Equation for Modeling Gas Diffusion in Heavy Oil*, presented at 9th International

- Chemical Engineering Congress & Exhibition (ICHEC 2015), Shiraz, 26-28 Dec., Iran
۲۸. Saboori, R., R. Azin, I. Amareh, Sh. Osfouri, A. Bahramian, and S. Sabbaghi, 2015, *Wettability Alteration of Carbonate Cores by Alumina-Nanofluid*, presented at 9th International Chemical Engineering Congress & Exhibition (ICHEC 2015), Shiraz, 26-28 Dec., Iran
۲۹. Mousavi, Seyedeh Fatemeh, Shahriar Osfouri, and Reza Azin, 2015, *A New Approach for Modification of Constant Volume Depletion Data of Gas Condensate Fluids*, presented at 9th International Chemical Engineering Congress & Exhibition (ICHEC 2015), Shiraz, 26-28 Dec., Iran
۳۰. Azin, R., 2015, , presented at 9th International Chemical Engineering Congress & Exhibition (ICHEC 2015), Shiraz, 26-28 Dec., Iran
۳۱. Osfouri, Sh., M. Nategh, R. Azin, and S. M. Jafari Raad, 2014, *The effect of silica nanoparticles on gas diffusion rate in CO2 miscible injection method*, presented at 5<sup>th</sup> International Congress on Nanoscience and Nanotechnology, Tarbiat Modares University, Tehran, Iran, 22-24 October
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۳۵. Zirrahi, Mohsen, Reza Azin, and Reza Malakooti, 2011, *Prediction of Minimum Miscibility Pressure for Carbon Capture and Sequestration and Acid Gas Disposal Applications*, presented at the 7<sup>th</sup> International Chemical Engineering Congress & Exhibition (IChEC 2011) Kish, Iran, 21-24 November
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- ۸. Osfoury, Sh., A.A. Izadpanah, S. Mardaneh and R. Azin, 2013, *Utilization of Gas hydrate resources for environmental protection and reduction of CO<sub>2</sub> Emission*, Presented at the second gas hydrate conference, Semnan University, Semnan, Iran, 15-16 May
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- ۱۰. Amiri, H. R., R. Azin, R. Fatehi and Sh. Osfoury, 2013, *Prediction of acid gas water content during carbon capture and sequestration into saline aquifers*,

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١٢. Osfoury, Sh., R. Azin, and S. M. Taghavian, 2012, *A new Thermodynamic model based on functional groups*, presented at the 14<sup>th</sup> Iranian Chemical Engineering Congress, Sharif University of Technology, Tehran, Iran, 15-17 October
١٣. Jafari Raad, S. M., R. Azin, Sh. Osfoury, and R. Fatehi, 2012, *Simulation of natural convection in acid gas disposal into aquifers*, presented at the 4<sup>th</sup> conference on applications of CFD in chemical and petroleum industries, Tehran, Iran, 17 May
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١٨. Azin, Reza, A. Mosleh, A. Ahmadi, and Sh. Osfouri, 2011, *Acid Gas Management in Pars Special Energy Economic Zone (PSEEZ)*, presented at the 2<sup>nd</sup> National conference on Sustainable, Integrated, Knowledge-based development of Pars Special Energy Economic Zone (PSEEZ), Assaluyeh, Iran, 7-8 March

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٢٠. Azin, Reza, 2010, *Persian Gulf Oil pollution related to Oil and Gas Industry*, presented at the 1<sup>st</sup> National conference on Sustainable, Integrated, Knowledge-based development of Pars Special Energy Economic Zone (PSEEZ), Assaluyeh, Iran, 16-18 Jan.
٢١. Salimi, Ghasem, Reza Azin, and Shahab Kaske, 2009, *Quality Evaluation in University: Application of Internal Evaluation in University Development Planning*, presented at the National Seminar of Higher Education Supervision and Evaluation, Shahid Beheshti University, Tehran, Iran, 25<sup>th</sup> of March
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٢٣. Azin, Reza, Riyaz Kharrat, and Behzad Rostami, 2005, *Effect of Solubility and Diffusivity of Solvent in Heavy oil on the Performance of the VAPEX Process as an Enhanced Oil Recovery Process*, paper OP11-41, presented at the 10<sup>th</sup> national Iranian Chemical Engineering Congress (IChEC10), Zahedan, Nov. 15-17
٢٤. Marzbanfard, E., Riyaz Kharrat, and Reza Azin, 2005, *Experimental Studies of the VAPEX Process in Fractured Reservoirs*, paper OP11-949, presented at the 10<sup>th</sup> national Iranian Chemical Engineering Congress (IChEC10), Zahedan, Nov. 15-17
٢٥. Azin, R., A. M. Mosleh, and M. Yousefi, 2005, *Design of the Bushire Province Oil, Gas, and Petrochemical Incubator*, presented at the Bushire Province Knowledge-based Development Conference, Bushire, 27-28 April
٢٦. Azin, R., H. Bahrami, 2002, *Modelling the Performance of Gas Turbines*, the 7<sup>th</sup> Iranian Congress of Chemical Engineering, University of Tehran (IChEC7), Oct. 27-30

۲۷. Azin, R., A. M. Sanati, and M. M. Mohammadi, 2002, *The properties and applications of marine oils*, the 1<sup>st</sup> national conference on sea and medicine, Bushehr University of medical sciences, Jan. 30-Feb. 1
۲۸. Azin, R., A. M. Sanati, and M. M. Mohammadi, 2001, *Investigation of Pharmaceutical Properties of Lipids and fatty acids of livers and tissues of Persian Gulf sharks*, the 1<sup>st</sup> national conference on food and nutrition in Bushire Province, Nov. 13-14
۲۹. Azin, R., M. Moshfeghian, 1999, *Geothermal Energy: Problems and Methods*, Second Iranian Energy Congress, Tehran, May (abstract in English)

### **Computer Knowledge**

- Quite familiar with Reservoir Engineering and well flow modeling Soft wares, including Eclipse (Compositional and Black oil modules), Geoquest Package (Eclipse 100-300, PVTi), CMG Package ( IMEX, GEM, Builder, Winprop), PIPESIM
- Familiar with chemical engineering soft wares, including PRO II, ASPEN PLUS, HYSYS
- Familiar with MATLAB and FEMLAB mathematics softwares
- Familiar with Microsoft Windows operating system
- Expert in Microsoft Office package, including Power Point, Excel, and MS – Word

### **Special Interests**

- Thermodynamics of Hydrocarbon Systems
- Thermodynamics of Electrolyte Systems
- Reservoir Engineering and Simulation
- Underground Gas Storage
- EOR for heavy oil fields
- Acid Gas/Green House Gas Disposal
- Environmental studies, air, marine and water pollution
- Water desalination processes
- Regional studies on the development
- Corporate Social Responsibility

- Sustainable Development