



### *Personnel Profile*

<b>Name:</b> Hamidreza	<b>Family Name:</b> Saghafi
<b>Birth Date:</b> 1979/08/22	
<b>Organization level:</b> - Managing Director of Drilling International Limited Co. - Agent of research & Development of Upstream Oil industry Institute	
<b>Email:</b> h.saghafi@nioc.ir saghafi.saghafi@gmail.com	<b>Phone No.:</b> 091530588016

### *EDUCATION*

Hydrocarbon –Petroleum Engineering reservoir	Amir Kabir University of technology	Doctor of Philosophy (Ph.D)	Sep 2011- Feb 2016
Hydrocarbon – Petroleum Engineering reservoir	University of Kansas/The petroleum University of Technology	Master’s Degree	Sep 2002- Sep. 2006
Petrochemical – Chemical Engineering industry	The petroleum University of Technology	Bachelor’s Degree	Sep 1998- Sep. 2002

### *Experience*

<b>1</b>	PEDCO/Drilling International Co.	From May. 2019- Present
<b>2</b>	RIPI/Upstream Oil industry campus	From Sep. 2016- Present
<b>3</b>	Iranian Offshore Oil Company (IOOC)	From Sep. 2006-Sep. 2016
<b>4</b>	Tertiary Oil Recovery Project, Kansas.  (TORP)	From Dec. 2002-July 2006

- More than a decade of continues activity in different operational units of Persian Gulf (SIRI, Lavan, Bahregan, Kharg, Gheshm)

## *Research Projects*

Experimental Study on Water Shut-off By Preformed Particle Gels (PPG) and Designing Conceptual Pilot Plan for Balal Oil Field	Administrator Of Project	From Oct. 2017- Present
Company: IOOC		
Experimental research & production of Preformed Particle Gel in reservoirs with high thermal & Salinity resistant	Administrator Of Project	From Jun. 2017- to Jun. 2018
Company: Daco Co.		
Presentation of technological methods in EOR from the water, oil and gas areas of Asmari Reservoir in Bibi Hakimeh field	Administrator Of Project	From. 2016- to. 2019
Company: NISOC		

## *Operational Projects*

Oil sweetening towers optimization in Lavan island	2006
Company: IOOC	
Design & Construction of inner parts of Separation unit- Production unit of Qeshm island	2008
Company: IOOC	
Design & construction supervision of dehydration separators in Siri island- Nasr production unit Feasibility Study of using compressors belonging to the gas station to receive feed with lower molecular weight	2013
Company: IOOC	
Investigation & technical proposal of compressors commissioning of Siri NGL facilities	2014
Company: IOOC	
Preparation of independent in partnership whit Worley Parson company in position of direct technical supervisor with the title of “Capabilities of NIOC regarding gas export include of reservoir potential assessment, drilling and completion of related well to project(48 wells), pipeline & compressor station	2016
Company: NIOC- IOOC- POGC	
Basic design and supervision of required changes in refinery output in purpose to gas export to Persian Gulf	2016
Company: NIOC-POGC	
Investigation & providing technical solutions regarding to troubleshooting of process & production facilities in Siri, Lavan, Kharg, Bahregan & Gheshm, referred to technical management department	2006 to 2016
Company: IOOC	
Administrator of Sweet Gas transmission from Asaluye to Mobarak platform include of the biggest offshore pipeline pig running in Persian Gulf, Removal of Gas condensate from mentioned pipeline, Commissioning of the compressor station for the first time with South Pars sweet gas and delivery of Mobarak Gas with target pressure in presence of Worely Parson as an administrator of project	2017
Company: NIOC- IOOC- POGC- NIGC	
Definition & administration of P&PM system to 8 level & PIMS system in related to gas export facilities of IOOC	2019
Company: IOOC-NIOC	
Full administration of the design and execution of the Siri to Mobarak pipeline & application of PIMS system	2019
Company: IOOC-NIOC	
Project Manager of “Provision of technical services, procurement, drilling & commissioning of Esfand, Dena & Civand wells with provision of financial sources as EPDF project in Siri field	2019 to Present
Company: IOOC	
Project Manager of integrated drilling services	2019 to Present
Company: POGC	

## Research activities

Investigation of PPG Resistance at reservoir condition with high thermal & salinity	2016
EOR institute- RIPI	
Investigation of reservoir condition(Salinity & PH) impact on PPG swelling & rheology	2016
EOR institute- RIPI	
Evaluation of viscosity index of enhanced PPG	2016
EOR institute- RIPI	
Evaluation of retention index of improved PPG in porous media	2016
EOR institute- RIPI	
Effect of crosslink of PPG, temperature, salinity of reservoir on RF and RRF	2016
EOR institute- RIPI	
Effect of preformed gel particle size, flow rate, and permeability on resistance and residual resistance factors	2016
EOR institute- RIPI	
Water blockage by PPG method	2018
EOR institute- RIPI	
Investigation of experimental & modeling of PPG behaviour in pore media	2012
Advisor of doctorate thesis- student: Amir Ferasat- Tarbiat Modares	
Supervisor of conscript- Amir Azimi Yancheshme Subject of duty: EOR by PPG	2016
Investigation of operation parameters effect at retention of PPG in porous media and reservoir condition	2018
Supervisor of conscript- Arash Etemadi	
Investigation of EOR by PPG method , simulation of flow model in reservoir	2018
Supervisor of conscript- Mohammad Asghari	
The effect of injection parameters on the EOR by preformed particle gel method	2018
Supervisor of conscript- Ali Mohsenatabar	
Measuring of RF of Nano-PPG in porous media and investigation of flow rate effect at preventing of water production and improve EOR	2020
Advisor of Master's thesis- student: Majid Yaghuobi- Amir Kabir University	
Effect of temperature at rheological properties of PPG in carbonate reservoir	2021
Advisor of Master's thesis- student: Mahan Farhadian- Amir Kabir University	
Effect of PPG size at its passing mechanism in porous media	2022
Supervisor of conscript- Alireza Tajik Mansouri	

## Academic Teaching Records

Grade	Course	University
Master's Degree	Reservoir Stimulation	Amir Kabir University of technology
Master's Degree	Chemical EOR Method of Oil & Gas Reservoir	Amir Kabir University of technology

## Course Teaching Records

Course Title	Site
Preformed particle gel	EOR institute- RIPI
EOR by chemical method	EOR institute- RIPI
Reservoir Engineering	IOOC
3 days workshop & seminar of reservoir engineering & EOR	Mahalat Azad University

Design of Oil & Gas Pipeline	IOOC
New methods of EOR	IOOC
Oil & Gas well acidizing	NBPK
Gas compressor optimization	NBPK
Design of ESP pumps	NBPK
Design of ESP pumps	NBPK
Operation of Oil Production	IOOC
Design of Oil & Gas Pipeline	IOOC
Design of ESP pumps	IOOC
Design of ESP pumps	IOOC
Design of oil separator	IOOC
Operation of sour oil process & production	IOOC
Design of Oil & Gas Pipeline	IOOC

## *Training Course*

Course Subject	Educational Institution	Date
Key management skills in oil industry -1	NIOC	2018
Key management skills in oil industry -2	NIOC	2018
Negotiating principles & techniques in oil industry contracts	NIOC	2011
Terms & condition of international transactions	NIOC	2015
Negotiating principles & techniques-Advance		2011
Petroleum Standards	IOOC	2008
Psychology principles for supervisory & management	IOOC	2008
Problem analyzing in supervisory & deaccessioning	IOOC	2008
EOR-advance	Kansas University	2006
Piping, Valve & Metering design-advance	Kansas University	2006
C.M.G Software	Kansas University	2002
Hysys Software	Kansas University	2003
Eclips, 100 Software	Kansas University	2004
Production Engineering	ENI	2004
Process Equipment Desing-1	SHELL	2005
Process & Production of offshore reservoir	SHELL	2005
2&3 phase separator- introduction & principles	SHELL	2005
Pump & Pipeline in petrochemical industry	IOOC	2009
Principle of fluid velocity calculation, pressure drop & pipeline sizing	IOOC	2010
OLGA software	Daneshgaran Sanat Pajouh	2010
simulation petrochemical process by ASPEN Software	IOOC	2012
2&3 phase separator- introduction & principles	IOOC	2008
Production Engineering	IOOC	2008
Process Equipment Desing-2	IOOC	2008
Natural Gas Processing	IOOC	2008
Gas sweetening & Gas Dehydration	Hydrocarbhone Pars	2007

## *Research & job honors*

The second rank of the national examination of the master's level- Petroleum engineering
The first rank of the doctorate examination(Written & interview)- Petroleum engineering-Amir Kabir University of technology-1390
Technical assistant of gas export o Persian gulf project
Technical consultant of IOOC Director
Selected member of professional committee & technical management department agent in some of research project of IOOC-1392
Appreciation Letter for research week- 1394- IOOC
Appreciation letter for brilliant performance in position of production engineering supervisor- IOOC-1394
Letter of commendation from R&D department of IOOC regarding to stripper towers optimization of Salman onshore unit- Lavan island
Certification from Total Co. in title of "Production of CO <sub>2</sub> Emissions by Capture and Storage"
Certification from Total Co. in title of "Managing Corrosion in Oil & Gas Industry"
Certification from Total Co. " Fundamental of Modern Production "
<b>Arbitration of papers in international journals(ISI):</b> Peer review process of manuscripts submitted toACS Publications-2022 Journal of petroleum science and engineering (Elsevier Journals) – 2022 Journal of Molecular Liquids (Elsevier Journals)– 2020 Journal of natural gas science and engineering (Elsevier Journals)– 2020 International of Journal Greenhouse Gas Control (Elsevier Journals)– 2020 International of Journal Multiphase Flow (Elsevier Journals)- 2020 Journal of petroleum science and engineering (Elsevier Journals)– 2019 Journal of petroleum science and engineering (Elsevier Journals)– 2018 Journal of natural gas science and engineering (Elsevier Journals)– 2017 Peer review process of manuscripts submitted to <u>Hindawi journal</u> about advances in polymer technology
Manager of drilling educational group, Well completion & Hydrocarbon reservoirs in NBPK Co. Manager & administrator of updated technical knowledge transfer to Iran in Delco company Superior professor of petroleum training courses in NBPK
Technical & research consultant of project entitled” Comprehensive plan review & Road map for the creation of Green Industrial Island of Siri with the aim of preparation & approving the foundation document of special oil & gas field in IOOC
Project management of production engineering in IOOC
Implementation and representation of IOOC in Netherland international Exhibition of OIL & Gas Industry
Technical member in contract & reservoir group for investigation and analyzing of Esfandiar field development plan
Administrator & drilling manager in drilling operation of -F7 . SIC-F6 . E1P6 . E10 . E6 , E4 .E9 .E10 .E11 .E3P4 &SIC-F3 in Siri EPDF project(On of the most difficult fields to drill)
Supervision of design & construction of drilling fluid vertical agitator for the first time in Drilling International Co. on DCI-1 rig in Siri EPDF project
Supervision of design & operation of 26” threated conductor pipe regarding to Siri EPDF project for the first time in Iran
More than 85% progress in EPDF Siri Project from the beginning of the position of project manager till now
Managing of negotiations to sign a contract of drilling rig with Mapna Co. & with the highest price
Managing of negotiations to sign a contract with POGC for provision of Integrated Drilling Services
Administrator of Independent report provision for presentation in The Hague Court
Presence in Landon international Court as technical expert & field witness of operation in oil & gas industry
Presence in Paris international Court as technical expert & field witness of operation in oil & gas industry
Managing of Sproule international technical team for preparation & effective presence in international court of Paris & Landon

## *Design & Commissioning of Labs and professional workshops*

Title	Site
Delvar Afzar (Daco)	Foundation of Cementing lab include of equipment design & commissioning
Institute of EOR	Nano gel production for stream consistency in high temperature & pressure reservoirs
Institute of EOR	Lab setup commissioning for investigation of PPG viscosity in fracture
Institute of EOR	Lab setup commissioning for investigation of resistance factor & PPG waste resistance in pore media

## Skills/Professional Abilities

General Software	Windows- ICDL- Microsoft Office
Professional software	Matlab(advance)-FORTRAN programming(advance)
Petroleum Software	Hysys(advance)- Pipephase(professional)- Olga(advance)- Eclipse(intermediate)- Well test 200(advance)

## Languages

English	Excellent
Arabic	intermediate
French	intermediate

## Publication

Papers in international publications	18 papers
Papers in internal publications	5 papers
Registered patents	1 patent
Papers published in international conferences	5 papers
Papers published in national conferences	10 papers

## Other Authorizations

Authors	Book Name
Hamidreza Saghafi- Abbas Naderi far	Improve oil recovery by Preformed Particle Gel Injection
Hamidreza Saghafi- Shahab Gerami	Nanocomposite of Preformed Particle Gel

## (Annex-1)

### International Journals

1. HR Saghafi, " Retention characteristics of enhanced preformed particle gels (PPGs) in porous media: Conformance control implications ", Journal of Petroleum Science and Engineering 166 (July 2018), Pages 962-968, 2018.
2. A Farasat, MV Sefti, S Sadeghnejad, HR Saghafi, " Effects of reservoir temperature and water salinity on the swelling ratio performance of enhanced preformed particle gels ", Korean Journal of Chemical Engineering 34 (5), 1509-1516, 2017
3. A Farasat, MV Sefti, S Sadeghnejad, HR Saghafi, "Mechanical entrapment analysis of enhanced preformed particle gels (PPGs) in mature reservoirs ", Journal of Petroleum Science and Engineering 157, 441-450, 2017.
4. HR Saghafi, A Naderifar, S Gerami, MA Emadi, "Improvement in thermo-chemical stability of Nano composite preformed particle gels for conformance control in harsh oil reservoir conditions", The Canadian Journal of Chemical Engineering 94 (10), 1880-1890, 2016.
5. HR Saghafi, MA Emadi, A Farasat, M Arabloo, A Naderifar, " Performance evaluation of optimized preformed particle gel (PPG) in porous media ", Chemical Engineering Research and Design 112, 175-189, 2016.
6. HR Saghafi, A Naderifar, S Gerami, A Farasat, " Performance evaluation of viscosity characteristics of enhanced preformed particle gels (PPGs) ", Iranian Journal of Chemistry and Chemical Engineering (IJCCE) 35 (3), 83-92, 2016
7. H. Yarveicy, H. Saghafi, M. M Ghiasi, A. H Mohammadi, "Decision Tree-based Modeling of CO2 Equilibrium Absorption in Different Aqueous Solutions of Absorbents" Environmental Progress & Sustainable Energy, 2018.
8. H Saghafi, M Arabloo, "Development of genetic programming (GP) models for gas condensate compressibility factor determination below dew point pressure ", Journal of Petroleum Science and Engineering, 2018.
9. HR Saghafi, " Gas hydrate stability conditions: Modeling on the basis of gas gravity approach ", Petroleum Science and Technology, 2018.

10.	Hamidreza Saghafi, Mohammad M. Ghiasi, Amir H. Mohammadi, " Analyzing the experimental data of CO <sub>2</sub> equilibrium absorption in the aqueous solution of DEA + MDEA with Random Forest and Leveragemethod ", <i>International Journal of Greenhouse Gas Control</i> 63 (2017) 329–337
11.	H Saghafi, M Arabloo " Estimation of carbon dioxide equilibrium adsorption isotherms using adaptive neuro-fuzzy inference systems (ANFIS) and regression models ", <i>Environmental Progress &amp; Sustainable Energy</i> 36 (5), 1374-1382, 2017
12.	H Saghafi, MM Ghiasi, AH Mohammadi, " CO <sub>2</sub> capture with aqueous solution of sodium glycinate: Modeling using an ensemble method ", <i>International Journal of Greenhouse Gas Control</i> 62, 23-30, 2017.
13.	H Saghafi, M Arabloo, " Modeling of CO <sub>2</sub> solubility in MEA, DEA, TEA, and MDEA aqueous solutions using AdaBoost-Decision Tree and Artificial Neural Network ", <i>International Journal of Greenhouse Gas Control</i> 58, 256-265, 2017.
14.	Hamid Reza Saghafi, Alireza Rostami, Milad Arabloo, "Evolving new strategies to estimate reservoir oil formation volume factor: Smart modeling and correlation development", <i>Journal of Petroleum Science and Engineering</i> , 2019.
15.	Ali Mohsenatabar Firozjahi, Siyamak Moradi, Hamid Reza Saghafi, "Sensitivity Analysis on Effective Parameters on Water Alternative Gas (WAG) for Enhanced Oil Recovery (EOR)", <i>Journal of Gas Technology, JGT, Volume 4 / Issue 1 / March 2019</i>
16.	Review on chemical enhanced oil recovery using polymer flooding: Fundamentals, experimental and numerical simulation AM Firozjahi, HR Saghafi <i>Petroleum</i> , 2019
17.	Effect of Component of Preformed Particle Gels on Swelling Ratio HR SAGHAFI, <i>APPLIED RESEARCH IN CHEMICAL POLYMER ENGINEERING</i> 2 (400709), 3-17, 2019
18.	K Yaghoobi M, Kazemi A, Saghafi H, Ahmadi M, "An Insight Into The Water Shut-Off Application Of Nano-Sized Preformed Particle Gel Preflush In Heterogeneous Layers" <i>Journal of Chemical Engineering and Catalysis</i> .

### *Iranian Journals*

1.	Hamidreza Saghafi, Seyyed Mohammad javad Kazemi " Effect of Composition of raw material on swelling ratio of PPG ", <i>Research Journal of Applied engineering Chemistry- Polymer</i> , year Second Number3, Version1 winter ,2017.
2.	Hamid Reza Saghafi, Milad Arabloo; " Presenting an experimental relationship to estimate the amount of surface absorption of carbon dioxide gas on a porous medium ", <i>Scientific Journal of Oil and Gas Exploration and Production</i> , number ۱۴۰, pages ۹۳–۱۱۸, ۲۰۱۵ ,"
3.	Hamid Reza Saghafi; " Practice to prevent well blowout and the necessity of its regular implementation in drilling rigs ", <i>Scientific Journal of Oil and Gas Exploration and Production</i> , number ۸۶, ۲۰۱۹ ,"
4.	Hamid Reza Saghafi; " Synthesis of nano preformed particles gel and investigation of the effect of its ingredients on the swelling ratio", <i>Scientific Journal of Oil and Gas Exploration and Production</i> , number , " pages ۴۹–۵۴, ۲۰۱۸ ,۱۶۷
5.	Hamid Reza Saghafi; " Modeling of CO <sub>2</sub> solubility in MEA aqueous solution using Genetic Programming", <i>Scientific Journal of Oil and Gas Exploration and Production</i>

### Patent

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| 1. | Production of gel for conformance control in high pressure-temperature reservoir, 2016 , No. 90088 |
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### *International Conference*

1.	M.m Salehi, H.R Saghafi, M Teymaarishamasbi, " Optimizing Underbalanced Perforation Performance, a New Model to Precise Adjustments of Downhole Condition ", <i>International Petroleum Technology Conference</i> , Bangkok, Thailand, 2011
2.	A. Farasat, M. Vafaie Sefti, S. Sadeghnejad, H.R Saghafi, " Experimental Evaluation of the Effects of Temperature and Water Salinity on the Swelling Ratio of Performed Particle Gels ", <i>9th International Chemical Engineering Congress and Exhibition</i> , Shiraz, Iran, 2015.
3.	H.R Saghafi, "Development of GP models for gas condensate compressibility factor prediction below dew point pressures " <i>3th International Conference on Oil, Gas, Refining &amp; Petrochemical</i> , Shiraz, Iran, 2016.
4.	H.R Saghafi, "Effect of Cross-linker concentration of PPGs, Temperature and Salinity of Reservoir on Resistance and Residual Resistance", <i>4th International Conference on Oil, Gas, Refining &amp; Petrochemical</i> , Shiraz, Iran, 2016
5.	H.R Saghafi, "Effect of Temperature and Porous Medium Permeability on Preformed Particle Gels (PPGs) Retention", <i>4th International Conference on Oil, Gas, Refining &amp; Petrochemical</i> , Shiraz, Iran, 2016..

### *Iranian Conference*

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| 1. | Hamid Reza Saghafi , Modeling of CO <sub>2</sub> solubility in MEA aqueous solution using Genetic Programming; <i>National Conference of chemical Engineering</i> , Sarakhs, Iran, 2016 |
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2.	Hamid Reza Saghafi , Effect of flow rate and PPG size at retention factor in porous media; National Conference of chemical Engineering, Sarakhs, Iran, 2016
3.	Hamid Reza Saghafi , Measuring Viscosity of Preformed Particle Gels ; National Conference of chemical Engineering, Sarakhs, Iran, 2016
4.	Hamid Reza Saghafi et'al , Application of Novel methods of enhance oil recovery in fractured reservoirs; 2nd National Congress on the development of fractured reservoirs, with EOR approach, Ahwaz, Iran, 2018.
5.	Hamid Reza Saghafi et'al , Performance evaluation of retention factor of PPG in porous media; 4th National Conference in chemistry, chemical engineering & petroleum, Tehran, sep 2018.
6.	Hamidreza Saghafi, Alireza Tajikmansouri, Seyyed Majid Hashemi, Shima Ebrahimzadeh, Seyed Hamed Bolori, "Candidate well selection for PPG Injection: A Simulation Case Study" First National Conference and Exhibition on Technology Management of Knowledge-based Products in the Iranian Oil Industry, December 2022.
7.	Hamid reza Saghafi, seyed Mohammad javad Kazemi, " Experimental Investigation at Drop Size Distribution in a Pulsed Disc and Doughnut Extraction Column", sixth international conference on technology development in oil gas refinery and petrochemical, Tehran , 2022.
8.	Hamid Reza Saghafi et al, "the effect of injection rate of PPG in nano size on RF and RRF on porous carbonate medium to prevent water production and help to increase oil production" sixth international conference on technology development in oil, gas, refinery and petrochemical, Tehran, iran, july 2022,
9.	Hamid Reza Saghafi, "investigation of entrapment of improved preformed particle gel in mature reservoir" sixth international conference on technology development in oil, gas, refinery and petrochemical, Tehran, Iran, July 2022.
10.	Hamid Reza Saghafi, "the effect of reservoir temperature and water salinity on swelling ratio of improved preformed particle gel" sixth international conference on technology development in oil, gas, refinery and petrochemical, Tehran, iran, july 2022