

Dr Azim Kalantariasl

Mollasadra St., Faculty of Chemical and Petroleum Engineering,

Shiraz University, Shiraz, Iran

Email: azim.kalantari@shirazu.ac.ir, a_k_asl@yahoo.com

Updated on Aug. 2017

Education/Qualification

1. **Mar 2011 to Jan 2015:** Australian School of Petroleum (Enhanced Oil and Gas Recovery and Formation Damage Research Group), Adelaide University, Adelaide, Australia.

PhD: Petroleum Engineering:

Thesis title: Advanced Analytical Models for Well Injectivity Decline

2. **2003-2005:** Tehran University, Iran

MSc: Petroleum Reservoir Engineering:

Thesis title: Experimental Investigation of Block to Block Interaction in a Fractured System during Lean Gas Injection.

3. **1999-2003:** Petroleum University of Technology, Iran

BSc: Petroleum Reservoir Engineering:

Dissertation title: Prediction of Reservoir Properties Using Artificial Neural Networks.

Guest Lecturer

May 2016- Now: The University of Adelaide (Australia), teaching Reservoir Engineering for master students as invited lecturer.

Executive Editor

July 2015 to now: Journal of Natural Gas Science and Engineering (IF=2.7), Elsevier, (<http://www.journals.elsevier.com/journal-of-natural-gas-science-and-engineering/editorial-board>)

Employment history (Academic)

1. **Sep 2015-Now:** Assistant professor, department of petroleum engineering, Shiraz University

Teaching:

- ✓ Drilling Engineering (Bachelor of Petroleum Engineering)
- ✓ Production Engineering (Bachelor of Petroleum Engineering)
- ✓ Reservoir Management (Bachelor of Petroleum Engineering)
- ✓ Formation Damage and Productivity/Injectivity Enhancement (Bachelor of Petroleum Engineering)
- ✓ Introduction to Petroleum Engineering (Bachelor of Petroleum Engineering)
- ✓ Advanced Natural Gas Reservoir Engineering (Master of Petroleum Engineering)
- ✓ Advanced Reservoir Simulation (Master of Petroleum Engineering)
- ✓ Advanced Formation Damage and Productivity/Injectivity Enhancement (Bachelor of Petroleum Engineering)

Research:

- ✓ Homa Gas Field Development (joint project with RIPI)
- ✓ Formation damage during water injection (RIPI)
- ✓ Working (team member) on a giant long term project: Enhanced Oil Recovery (EOR) in Mansouri Oilfield (south west of Iran)
- ✓ Establish a research group for near wellbore problems: Drilling fluid , Formation Damage and Well Stimulation

2. **Feb 2016- Now:** invited lecturer, Australian School of Petroleum, Adelaide University.

Teaching:

- ✓ Advanced Reservoir Engineering

3. **Feb 2015- July 2015:** Lecturer, Australian School of Petroleum, Adelaide University.

Teaching:

- ✓ Drilling Engineering & Well Completion (Master of Petroleum Engineering)
- ✓ Reservoir Engineering (Master of Petroleum Engineering/ Undergraduate students (20%))
- ✓ Introduction to Petroleum Engineering (Master of Petroleum Engineering)
- ✓ Well Testing & Pressure Transient Analysis (Undergraduate students)

4. **Mar 2011- Jan 2015:** Australian School of Petroleum, Adelaide University: responsibilities include;

- ✓ Working on an industry project of Fines-Assisted Enhanced Oil Recovery Studies during Low Salinity Water-flooding (Origin Energy, Australia).
- ✓ Working on an industry project of Prediction of Injectivity Decline during Produced Water Re-Injection into a Low Permeable Formation (RWE Dea, Germany).
- ✓ Development and implementation of mathematical models and a software code for estimation of injectivity decline during low quality water injection.
- ✓ Co-supervising Honors Petroleum Engineering students in Adelaide University
 - Development of a data-bank for injectivity decline parameters
 - Modelling of Mud Filtrate Invasion and Clean-up Performance in the Pacoota Sandstone, Central Australia
- ✓ **Lecturing and teaching assistance (TA)**
 - “Petroleum Production Engineering”, Semester 2, 2014.
 - “Formation Damage and Productivity Enhancement”, Semester 1, 2012-2013, 2015.
 - “Reservoir Simulation”, Semester 2, 2012-2014.
 - “Introduction to Petroleum Engineering” (Reservoir and Production Engineering sections), Undergraduate program, Semester 2, 2012, 2014.
- ✓ Tutor of Eclipse and MBAL software for Honors and Master students, Adelaide University.
- Excellent presentation skills obtained during regular meetings with project sponsors and participation in some corresponding courses.

5. **2005-2009:** Head of Petroleum Engineering Department, Azad University, Marvdasht branch, Iran.

- ✓ Responsibilities: Courses planning, invitation of potential lectures, ordering and purchasing laboratory equipment, monthly meeting organizer, student’s internship organizer, invitation of technical speakers (academic and industrial).

6. **2005-2010:** Lecturer of several petroleum engineering courses at Azad University (Marvdasht, Shiraz and Firooz-Abad branches), Iran.

✓ **Course material development and lecturing:**

1. Reservoir Rock properties (Petrophysics), 2005-2010
2. Petroleum Reservoir Fluid Properties (PVT), 2006-2007
3. Reservoir Engineering (I, II), 2006-2010
4. Natural Gas Reservoir Engineering, 2008
5. Enhanced Oil Recovery, 2007

6. Petroleum Geology, 2006-2007
7. Reservoir Simulation, 2008-2010
8. Integrated Petroleum Reservoir Management, 2008
9. Gas Reservoir Engineering, 2007-2009
10. Reserve Estimation, 2009-2010
11. Fractured Reservoir Engineering, 2009-2010

7. 2009-2011: Co-Supervising MSc Reservoir Engineering students in Azad university (Science and Research branch, Tehran, Iran):

- Investigation of a fractured gas reservoir properties using rate transient analysis method (Decline Curve Analysis).
- Comparison of Black oil and Compositional simulation results of a lean gas condensate reservoir in south west of Iran.

8. 2003-2005: Tehran University

Working on industrial research projects:

- Investigation of Re-Imbibition Process during Gas Injection in Fractured Reservoirs for Pressure Maintenance.
- Investigation of Tracer Test Application in an Iranian Reservoir (Serajeh Gas Field).
- ✓ **Teaching assistance**
 - “Fractured Reservoir Engineering”, Master Students, Semester 1, 2005.
 - “Reservoir Simulation” Master Students, Semester 2, 2005.

Employment history (Industry)

- 1. 2009-2011:** Two-years work experience in National Iranian Oil Company (NIOC) as a reservoir engineer and participating in different related activities. The company produces 50% of total Iran natural gas production.

I have involved in several research projects and served as:

- Responsible person for R&D of technical affairs section, South Zagros Oil and Gas Production Company (Subsidiary of NIOC).
- Committee Member of NIOC R&D, South Zagros Oil and Gas Production Company and Shiraz University joint research projects.

Research projects:

- *Improving Gas / Condensate Relative Permeability Using Chemical Treatments*

- *Development of a Simulation Software for Iranian Lean Gas Condensate Reservoirs*
 - *Possible Sources of Associated Produced Water in an Iranian Gas Condensate (kangan) Field*
2. **May 2004-Dec 2004:** member of research team for integrated reservoir management project, Iran Technology Analysis Network (ITAN), Tehran, Iran.
 3. **July 2002-Sep 2002:** National Iranian Oil Company: working two months in Reservoir Studies and Production Engineering departments as summer internship.
 4. **July 2001-Aug 2001:** National Iranian Oil Company (NIOC): working in Drilling Engineering Department as summer internship.

Honors

Invited lecturer, the University of Adelaide

Executive editor, Journal of Natural Gas Science and Engineering

Dean's commendation for Doctoral Thesis Excellence

PhD fee waiver, the University of Adelaide, 2014-2015

Travel scholarship, Society of Petroleum Engineers, South Australia section

Best paper, 2nd national conference on technology development in petroleum industry

Selected Training Courses and workshops

1. Well test analysis of hydraulically fractured wells, Australian School of Petroleum, 21-23 April, 2015, Adelaide, Australia.
2. Nanotechnology and Nano-Geoscience in Oil and Gas Industry workshop (4 days workshop, Society of Petroleum Engineers, SPE, Kyoto, Japan, 2014)
3. Adelaide University Integrated Bridging Program Research (IBP-R) workshops:
 - Reading & Note Taking for Researchers (June 2011)
 - Advanced Pronunciation for Researchers (June 2011)
 - Grammar for Researchers (May 2011)
 - Readability in Research Documents (May 2011)
 - EndNote Beginners IBP-R (April 2011)
4. Reservoir Simulation course (2 days, Total Professors Association, TPA, Shiraz, Iran, 2011)
5. Special Core Analysis course (one day, Research Institute of Petroleum Industry, Iran, 2010).
6. Oil and Gas Fluids Properties Measurement (one day, RIPI, Iran, 2010).
7. Eclipse(E 300) Compositional Simulation (4 days, CAPE Group, Shiraz, Iran, 2010)
8. PIPESIM (2 days, South Zagros Oil and Gas Co., Shiraz, Iran, 2010)
9. Integrated Carbonate Reservoir Management Course (one day, SPE, Iran, 2010)

10. Eclipse(E 100) Black Oil Simulation (4 days, CAPE Group, Shiraz, Iran, 2009)
11. Dynamic Reservoir Simulation (IMEX –CMG) (2 days, RIPI, Tehran, Iran,2009)
12. Pan Sys Well Test Software (3 days, South Zagros Oil and Gas Co, Shiraz, Iran, 2009)
13. AutoCAD for Petroleum Engineers (3 days, South Zagros Oil and Gas Co., Shiraz, Iran, 2009)
14. Petroleum Recovery, (4 days, Total Professors Association, TPA, Tehran, Iran, 2005)
15. Enhanced Oil Recovery Course (2 days, Research Institute of Petroleum Industry, Iran, 2005)
16. Geostatistics and Seismic Data Inversion, (2 days, EAGE, Iran, 2004)

IT Skills

Programming: Matlab programming, Excel Programming (VBA);

Software: Eclipse100 &300, PVTi, Pansystem, Saphir (KAPPA software), Rate Transient Analysis (Feket software), MBAL, PVTP, Prosper (Petroleum Experts software, IPM), CMG (GEM, IMEX), PIPESIM, CorelDraw, and MS Office.

Research Interests

- Colloidal flow and transport in porous media (modelling and experimental studies)
- Formation damage (drilling & completion, production and injection wells)-
(modelling and experimental studies)
- Well stimulation and productivity/injectivity enhancement
- Multi-phase flow in porous media (modelling and experimental studies)
- Enhanced Oil Recovery (low salinity waterflooding, polymer flooding)
- Analyzing field production/injection data
- Natural gas production engineering

Languages

English: Fluent

Persian (Farsi): Fluent

References

- ✓ **Prof. Pavel Bedrikovetsky**, Adelaide University (PhD supervisor)
Tel: +61-8-83133082
Email: pavel@asp.adelaide.edu.au
- ✓ **Prof. Steve Begg**, Adelaide University (head of school, Australian School of Petroleum)
Tel: +61-8-83138015
Email: steve.begg@asp.adelaide.edu.au

- ✓ **Dr. Zhenjiang You**, Adelaide University (PhD co-supervisor)

Tel: +61-8-83134290

Email: zhenjinag.you@asp.adelaide.edu.au

- ✓ **Prof. Shahab Ayatollahi**, Sharif University of Technology

Tel: (+98)-711-6474602

Email: shahab@shirazu.ac.ir

- ✓ **A/Prof. Manouchehr Haghghi (Manny)**, Adelaide University (MSc supervisor)

Tel: +61-8-83134292

Email: mhaghghi@asp.adelaide.edu.au

Publications

Journal papers

- 1 Akhondzadeh, H, Keshavarz, A, Sayfzadeh, M, Kalantariasl, A 2017 'Investigating the Relative Impact of Key Reservoir Parameters on Performance of Coalbed Methane Reservoirs by an Efficient Statistical Approach', submitted *Journal of Natural Gas Science and Engineeirng*
- 2 Abbasi, J, Raji, B, Riazi, M, Kalantariasl, A 2016 'Performance of Polymer Injection in Hydraulically Fractured Heterogeneous Reservoirs - A Simulation Approach', accepctd, *Journal of Petroleum Explorationa and Production Technology*, doi:10.1007/s13202-016-0295-x
- 3 Saboori, R , Sabbaghi, S, Kalantariasl, A, Mowla D 2016, Improvement of Rheological and Filtration Properties of Water-Base Drilling Fluid by Nano Carboxymethyl Cellulose/Polystyrene Core-Shell Nanocomposite', under review *Journal Petroleum Scienc.*
- 4 You, Z , Kalantariasl, A, Schulze, k, Storz, J, Burmester, C, Künckeler, S, Bedrikovetsky, P 2015, 'Injectivity Decline during Produced-Water Disposal into Closed Reservoir: compressible flow under given wellbore-pressure ', under review *Journal of Natural Gas Science and Engineering.*
- 5 Kalantariasl, A, Farajzadeh, R, You, Z & Bedrikovetsky, P 2015, 'Non-uniform External Filter Cake in Long Injection Wells', *Industrial & Engineering Chemistry Research.* vol. 54, no. 11, pp. 3051-3061.
- 6 Kalantariasl, A, Schulze, K, Storz, J, You, Z, Badalyan, A & Bedrikovetsky, P 2015, 'Produced Water Re-Injection (PWRI) and Disposal in Low Permeable Reservoirs', submitted *journal Petroleum Science and Engineeirng.*

- 7 Kalantariasl, A, Zeinijahromi, A & Bedrikovetsky, P 2014, 'Axi-Symmetric Two-Phase Suspension-Colloidal Flow in Porous Media during Water Injection', *Industrial & Engineering Chemistry Research*, vol. 53, no. 40, pp. 15763-15775.
- 8 Kalantariasl, A, Zeinijahromi, A & Bedrikovetsky, P 2014, 'Modelling of External Filter Cake Profile along the Well during Drilling', *Australian Petroleum Production & Exploration Association (APPEA) Journal*, vol. 54, pp. 319-328.
- 9 Kalantariasl, A & Bedrikovetsky, P 2013, 'Stabilization of External Filter Cake by Colloidal Forces in a "Well-Reservoir" System', *Industrial & Engineering Chemistry Research*, vol. 53, no. 2, pp. 930-944.
- 10 Zareenejad, MH, Kalantariasl, A & Nasriani, HR 2015, 'Analysis and Comparison of Decline Models, A Field Case Study of a Naturally Fractured Gas Condensate Reservoir', *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*, vol. 37, no. 4, pp. 392-400.
- 11 Nasriani, HR & Kalantariasl, A 2015, 'Choke Performance in High-rate Gas Condensate Wells Under Subcritical Flow Condition', *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*, vol. 37, no. 2, pp. 192-199.
- 12 Zareenejad, MH, Ghanavati, M & Kalantariasl, A 2014, 'Production Data Analysis of Horizontal Wells Using Vertical Well Decline Models, a Field Case Study of an Oil Field', *Petroleum Science and Technology*, vol. 32, no. 4, pp. 418-425.
- 13 Zareenejad, MH, Kalantariasl, A & Nasriani, HR 2012, 'Application of Decline Analysis in Fractured Reservoirs, Field Case Studies', *Journal of Chemical and Petroleum Engineering*, vol. 46, no. 1, pp. 53-62.
- 14 Keshavarz, A, Vatanparast, H, Zargar, M, Kalantariasl, A & Haghighi, M 2012, 'An Experimental investigation of the effect of pressure gradient on gas-oil relative permeability in Iranian carbonate rocks', *Petroleum Science and Technology*, vol. 30, no. 14, pp. 1508-1522.
- 15 Amiri, M & Kalantariasl, A 2010, 'Effect of Pressure on Calcium Carbonate Scale Tendency during Water Injection in Iranian Oil Fields', accepted for publication, *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*.
- 16 Keshavarz, A, Vatanparast, H & Kalantariasl, A 2011, 'Experimental study of flow rate and pressure gradient effects during immiscible gas injection in sandstone and carbonate rocks (Farsi)', *Exploration & Production (NIOC)*, vol. 64, pp. 19-25.
- 17 Keshavarz, A, Vatanparast, H, Zargar M, & Kalantariasl, A 2011, 'A new approach for minimizing End-effect from experimental data of oil and gas relative permeability (Farsi)', *Exploration & Production (NIOC)*, vol. 78, pp. 36-43.

Conference papers

- 1 Abbasi, J, Raji, B, Riazi, M, Kalantariasl, A 2016 Performance of Polymer Injection in Hydraulically Fractured Heterogeneous Reservoirs - A Simulation Approach',

paper presented at 78th EAGE Conference and Exhibition, DOI: 10.3997/2214-4609.201600921.

- 2 Nasriani, H R, MoradiDowlatabad, M, and Kalantariasl, A 2016, A New Correlation for Prediction of Critical Two-phase Flow through Wellhead Chokes, papre presenetd at 78th EAGE Conference and Exhibition., DOI: 10.3997/2214-4609.201600656.
- 3 You, Z , Kalantariasl, A, Schulze, k, Storz, J, Burmester, C, Künckeler, S, Bedrikovetsky, P 2016, Injectivity Impairment during Produced Water Disposal into Low-permeability Völkersen Aquifer (Compressibility and Reservoir Boundary Effects)', paper presented at SPE International Conference & Exhibition on Formation Damage Control, Lafayette, LA, USA, 24-26 February, SPE-179026-MS.
- 4 Kalantariasl, A, Servulo, A, & Bedrikovetsky, P 2015, Formation Damage due to Drilling and Completion: External Cake Formation and Stabilisation ', paper presented at SPE Russian Petroleum Technology Conference, Moscow, Russia, 26-28 October, SPE-176727-MS.
- 5 Kalantariasl, A, Farajzadeh, R, You, Z & Bedrikovetsky, P 2015, 'Mathematical Modelling of Non-Uniform External Filter Cake in Long Vertical and Horizontal Injection Wells ', paper accepted for presentation at SPE European Formation Damage Conference & Exhibition, Budapest, Hungary, 3-5 June, SPE-174184-MS.
- 6 Kalantariasl, A, Schulze, K, Storz, J, You, Z, Badalyan, A & Bedrikovetsky, P 2015, 'PWRI and Disposal in a thick tight formation (Mathematical modelling, laboratory test and field case)', paper accepted for presentation at SPE European Formation Damage Conference & Exhibition, Budapest, Hungary, 3-5 June, SPE-174185-MS.
- 7 Kalantariasl, A, Zeinijahromi, A & Bedrikovetsky, P 2014, 'Review of Cake Formation (Fouling) Mechanisms based on Membrane Science Experience (Micro/Ultra/Nano Filtration)', paper presented at SPE Nanotechnology and Nano-Geoscience in Oil and Gas Industry Workshop, Kyoto, Japan, 4-7 March.
- 8 Kalantariasl, A, Zeinijahromi, A & Bedrikovetsky, P 2014, 'External Filter Cake Buildup in Dynamic Filtration:Mechanisms and Key Factors', paper presented at SPE International Symposium & Exhibition on Formation Damage Control, Lafayette, LA, USA, 26-28 February, SPE 168144-MS.
- 9 Kalantariasl, A, Zeinijahromi, A & Bedrikovetsky, P 2014, 'Modelling of External Filter Cake Profile along the Well during Drilling', paper presented at Australian Petroleum Production and Exploration Association (APPEA) Conference and Exhibition, Perth, WA, Australia, 6-9 May.
- 10 Kalantariasl, A, Duhan, S & Bedrikovetsky, PG 2013, 'Type Curves for Injectivity Decline', paper presented at SPE European Formation Damage Conference & Exhibition, Noordwijk, The Netherlands, 5–7 June, SPE 165112-MS.
- 11 Kalantariasl, A & Farhadi, I 2014, 'Estimation and Evaluation of Gas Wells Deliverability from Single-Point Test', paper presented at 8th International Chemical Engineering Conference & Exhibition, Kish Island, Iran, 24–27 February.

- 12 Kalantariasl, A, Nasriani, H & Farhadi, I 2013, 'On the Accuracy of Dimensionless Inflow Performance Relationships for Gas wells', paper presented at North Africa Technical Conference and Exhibition, Cairo, Egypt, 15–17 April, SPE-164602-MS.
- 13 Akbari Fard, MG, Nasriani, HR, Vahdani, H, Valizadeh, M, Kalantariasl, A & Mohkam, M 2012, 'Field Case Studies of Pressure Transient Data from Complex Reservoirs in Southern Iranian Gas Condensate Reservoir', paper presented at 19th Annual India Oil & Gas Review Summit & International Exhibition, Mumbai, India, 6-7 September.
- 14 Nasriani, HR & Kalantariasl, A 2011, 'Two-Phase Flow Choke Performance in High Rate Gas Condensate Wells', paper presented at SPE Asia Pacific Oil and Gas Conference and Exhibition, Jakarta, Indonesia, 20-22 September, SPE-145576-MS.
- 15 Akbari Fard, MG, Nasriani, HR, Kalantariasl, A, Sinaei, M & Vahdani, H 2011, 'A Case Study of Non-Conventional Interpretation and Analysis in a Southern Iranian Gas Condensate Reservoir', paper presented at 20th World Petroleum Congress, Duha, Qatar, 4-8 December.
- 16 Nasriani, HR, Kalantariasl, A, Shabaninejad, M & Bagheripour, M 2011, 'A Modified Choke Flow Correlation for Iranian Gas Condensate Wells', paper presented at First National Conference of Novel Technologies in Oil & Gas Industries, Omidiyeh, Iran, 3-4 March.
- 17 Keshavarz A, Vatanparast H, Kalantariasl, A & Haghighi, M 2008, 'A new approach for minimizing end-effect from experimental data of oil and gas relative permeability (Farsi)', paper presented at Fracture Reservoir Engineering Conference, Ahwaz, Iran, 2-3 February.
- 18 Kalantariasl, A & Ariana, MA 2004, 'Experimental investigation of block-to-block interaction during gravity drainage in a fracture-matrix system (Farsi)', paper presented at Petroleum Engineering Student Congress, Tehran, Iran.
- 19 Kalantariasl, A 2004, 'Investigation of research and education in high rank universities with focus on technology transfer (Farsi)', paper presented at 2nd National Conference of Technology Transfer, Challenges and Opportunities, Tehran, Iran (Best Paper).