

## **CURRICULUM VITAE**

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**Seyyed Shahaboddin Ayatollahi**

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## **Personal Data:**

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## **Education:**

- Ph.D. Chemical Engineering, University of Waterloo, Canada, 1995.
- M.Sc. Chemical Engineering, Shiraz University, Shiraz, Iran, 1988.
- B.Sc. Chemical Engineering, Shiraz University, Shiraz, Iran, 1985.

## **Professional Experiences:**

### **I. Academic and Research:**

- Invited Professor, School of Chemical and Petroleum Engineering, Sharif University of Technology, Tehran, Iran (Since Sep 2009)
- Professor of Chemical and Petroleum Engineering, School of Chemical and Petroleum Engineering, Shiraz University, Shiraz, Iran (Since May 2007)
- Visiting Associate Professor, Petroleum and Chemical Engineering Department, Sultan Qaboos University, Muscat, Oman (Sep. 2004 – Sep. 2005)
- Associate Professor of Chemical Engineering, School of Chemical and Petroleum Engineering, Shiraz University, Shiraz, Iran (2002-2007)
- Head of EOR Group, Chemical and Petroleum Engineering Department, Shiraz University, Shiraz, Iran (Since 2002)
- Assistant Professor of Chemical Engineering, School of Engineering, Shiraz University, Shiraz, Iran (1996-2002)
- Postdoctoral Fellow, Department of Chemical Engineering, University of Waterloo, Ontario, Canada. (Jan 1995 - Aug 1995)
- Research Assistant, Department of Chemical Engineering, University of Waterloo, Ontario, Canada. (1993 - 1994)
- Teaching Assistant, Department of Chemical Engineering, University of Waterloo, Ontario, Canada. (1991 - 1994)

## II. Administrative:

1. Director of EOR Research Center, Shiraz University, Shiraz, Iran (Since June 2007)
  - Dean of Engineering (2005 – 2006)
  - The Chair of Shiraz University Computing Center (1998-2002)

## Courses Taught:

- Special Topics in reservoir Engineering<sup>\*</sup>
- Special Topics in Porous Media<sup>\*</sup>
- Advanced Fractured Reservoirs<sup>\*</sup>
- Advanced Reservoir Engineering<sup>\*†</sup>
- Multiphase Fluid Flow in Porous Media<sup>\*†</sup>
- Enhanced Oil Recovery<sup>\*†</sup>
- Reservoir Engineering<sup>\*†</sup>
- Advanced Heat Transfer
- Mass Transfer
- Thermodynamics
- Heat Transfer<sup>†</sup>
- Fluid Mechanics<sup>†</sup>
- Basic Principles and calculations in Chemical Engineering

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\*- Taught at Sultan Qaboos University (Muscat, Oman), Shiraz University (Shiraz, Iran), University of Esfahan (Esfahan, Iran), Tehran University (Tehran, Iran) and Sharif University of Technology (Tehran, Iran) for MSc and PhD students.

†- The course materials have been prepared in electronic format for electronic and distance learning.

## Fields of Interest:

- Wettability Alteration using different processes
- Enhanced Oil Recovery (GOGD Process, Thermal Processes (SAGD), MEOR and VAPEX)
- Multiphase flow in homogeneous and heterogeneous porous media (including gravity-assisted inert gas injection), remediation of non-aqueous phase

contaminants in the subsurface, computer modeling of three-phase flow and three-phase relative permeabilities.

- Flow visualization of transport phenomena in porous media using transparent glass micromodels.
- PVT calculations, using the equation of states and hydrate formation.
- Asphaltene Structure Prediction by Quantum Mechanics and Nanotechnology)
- Computer modeling of two-phase flow in the pipelines and air pollution control theories.
- Virtual University and Electronic Learning.
- Computer Networking.

### **Honors and Awards:**

- Recipient for the best researcher award in the school of engineering, Shiraz University, Shiraz, Iran (2006)
- Recipient for the best teaching award in the school of engineering, Shiraz University, Shiraz, Iran (2006)
- Recipient of the first place prizes in two different tasks at Environmental Design Competition (EDC2006) in UAEU (AlAin, UAE)
- Recipient of the second place prize at Environmental Design Competition (EDC2004) in UAEU (AlAin, UAE), shared with Oregon State University
- Recipient of three Faculty of Engineering Scholarships (1991-1993)
- Recipient of two University of Waterloo International Student Fee Waiver (1993-1994)
- Prize awarded for the rank one in M.Sc. degree from the Shiraz University (1988)

### **List of Publications in Refereed Journals:**

1. “Residual-Oil Recovery through Injection of Biosurfactant, Chemical Surfactant, and Mixtures of Both under Reservoir Temperatures: Induced-Wettability and Interfacial-Tension Effects”, SPE Journal Reservoir Evaluation and Engineering, 2012, In Press, (with H. Al-Sulaimani, Y. Al-Wahaibi, S. Al-Bahry, A. Elshafie, A. Al-Bemani, and S. Joshi)
2. “Experimental Investigation of Matrix Wettability Effects on Water Imbibition in Fractured artificial Porous Media”, Journal of Petroleum Science and Engineering, 86–87 (2012) 165–171 (with, M. Rezaveisi, and B. Rostami)

3. "Prediction of 3-D Adhesion Maps by using Stability of Thin Wetting Film during Wettability Alteration Process", Journal of Energy and Fuels, March, 2012, In Press, (with M. Rahbar, A. Roosta, and M. H. Ghatee)
4. "Contact Angle measurements to investigate the Electrowetting process for Sand rock reservoirs layer using N-heptane", Canadian Journal on Electrical and Electronics Engineering, January 16, 2012, In Press, (with M. Eghtesad)
5. "Investigating wettability alteration during MEOR process, a micro/macro scale analysis", Journal of Colloids and Surfaces Science, B; 95 (2012) 129–136, (with M. Karimi, M. Mahmoodi, A. Niazib and Y. Al Wahaib)
6. Experimental Investigation of Wettability Effect and Drainage Rate on Tertiary Oil Recovery from Fractured Media", Journal of Porous Media (JPM), March, 2012, In Press, (with P. Maroufi, H. Rahmanifard, M. Escrochi and H. Al-Hadhrami)
7. "In-Situ Oil-Spill Thickness Measurement on Seawater", Petroleum Science and Technology Journal, January 2012, accepted manuscript, (with M. M. Zerafat, M. Nabipour, and A. Lashanizadegan)
8. "Wettability Alteration of Carbonate Rocks by Surfactants: a Mechanistic Study", Journal of Colloids and Surfaces A: Physicochemical and Engineering Aspects May 2012, accepted for publication (with Kh. Jarrahan, O. Seiedi and M. Vafaie Sefti)
9. "Contact Angle measurements to investigate the Electrowetting process for Carbonate reservoirs layer" Canadian Journal on Electrical and Electronics Engineering, January 16, 2012, In Press, (with M. Eghtesad)
10. "Viscosity Prediction of Ternary Mixtures Containing ILs Using Multi-Layer Perceptron Artificial Neural Network", Journal of Fluid Phase Equilibria, May 2012, In Press, (with M. Lashkarbolooki, A. Zeinolabedini Hezave and A.M. Al-Ajmi)
11. "Asphaltene Deposition during CO<sub>2</sub> Injection and Pressure Depletion: A Visual Study", Journal of Energy & Fuels, 2012, 26, 1412–1419, (with P. Zanganeh, A. Alamdari, A. Zolghadr, H. Dashti, and Shahin Kord)
12. "Investigating the Fracture Network Effects on Sweep Efficiency during WAG Injection Process", Journal Transport in Porous Media, 08 March 2012, (with A.A. Dehghan and S. Ghorbanizadeh)

13. "Artificial neural network As an applicable tool to predict the binary heat capacity of mixtures containing ionic liquids", *Journal of Fluid Phase Equilibria* 324 (2012) 102–107, (with M. Lashkarbolooki, and A. Zeinolabedini Hezave)
14. "Experimental Investigation of Tertiary Oil Gravity Drainage on Fractured Porous Media", *Special Topics and Reviews in Porous Media*, Vo1. 2.70 pp. 179-191, 2010, (with, M. Rezaveisi, B. Rostami, R. Kharrat and C. Ghotbi )
15. "Automatic recognition of oil reservoir models from well testing data by using multi-layer perceptron networks", *Journal of Petroleum Science and Engineering* 77 (2011) 254–262, (with B. Vaferi and R. Eslamloueyan)
16. "Application of recurrent networks to classification of oil reservoir models in well-testing analysis", *Journal of Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*, April 2011 (with B. Vaferi and R. Eslamloueyan)
17. "Experimental Investigation of Different Steam Injection Scenarios during SAGD Process", *Journal of Special Topics and Reviews in Porous Media (STRPM)*, Vol.2 (4), 2011, (with A. Mohsenzadeh, M. Nabipour, S. Asadzadeh, M. Nekouie and H.Ameri)
18. "Secondary and Tertiary Thermally Induced Gas-Oil Gravity Drainage from Oil-wet Fractured Rocks; Experiments under Reservoir Conditions", *Journal of Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*, January 2011, (with A. Mohsenzadeh, M. Escrochi, and E. Roayaei)
19. "Biodegradation of heavy crude oil in wastewater by an efficient strain, ERCPPI-1", *Desalination and Water Treatment* 28 (2011) 46–54, (with P. Darvishia , D. Mowla and A. Niazi)
20. "AFM Investigation on the Surfactant Wettability Alteration Mechanism of Aged Mica Mineral Surfaces", *Journal of Energy & Fuels*, 2011, 25, 183–188 : (with O. Seiedi, M. Rahbar, M. Nabipour, and M. H. Ghatee)
21. "Investigating the effect of different asphaltene structures on surface topography and wettability alteration", *Journal Applied Surface Science*, 257 (2011) 8341– 8349, (with J. Sayyad Amin, E.Nikooee, M.H. Ghatee, A. Alamdari, and T. Sedghamiz)
22. "Fines Migration Control in Sandstone Formation by Improving Silica Surface Zeta Potential using Nanoparticle Coating Process", *Journal of Energy Sources, Part A: Recovery, Utilization, and Environmental Effects* (2010), accepted for publication (with A. Habibi, M. Ahmadi and P. Pourafshary)

23. "Atomic Force Microscopy and Wettability Study of the Alteration of Mica and Sandstone by a Biosurfactant-Producing Bacterium *Bacillus Thermodenitrificans*" *Journal of Advanced Microscopy Research* Vol. 5, pp 1–6, 2010 (With S. Zargari, S. Ostvar, A. Niazi)
24. "Laboratory Study of Alkyl Ether Sulfonates for Improved Oil Recovery in High-Salinity Carbonate Reservoirs: A Case Study", *Energy & Fuels Journal*, 2010, 24, pp. 3655–3660. (With M. Aoudia, R. S. Al-Maamari, M. Nabipour, A.S. Al-Bemani)
25. "Prediction of Asphaltene Precipitation: Learning from Data at Different Conditions", *Energy and Fuels*, Vol.24, pp 4046- 4053, 2010. (with J. Sayyad Amin, A. Alamdari, N. Mehranbod, E. Nikoee)
26. "Investigating wettability alteration due to asphaltene precipitation:Imprints in surface multifractal characteristics", *Applied Surface Science*, Vol.256,Issue 256, pp 6466-6472, 2010. (with J. Sayyad Amin, E. Nikoee, A. Alamdari)
27. "Fractal characteristics of an asphaltene deposited heterogeneous surface", *Applied Surface Science*, Vol. 256, pp. 67-75, 2009. (with J. Sayyad Amin, A. Alamdari)
28. "Simulation of Steam Distillation Mechanism Using Neural Networks" *Chemical Engineering Research and Design*, Vol. 87 pp 997–1002, 2009 (with V. Vafaei and R. Eslamloueyan)
29. "Analysis and Simulation of Steam Distillation Mechanism during Steam Injection Process." *Journal of Energy & Fuels*, Volume 23, Issue 1, pp 327-333, January 22, 2009. (with V. Vafaei, R. Eslamloueyan and L. Enfeali)
30. "Genetic Algorithms and Ant Colony Approach for Gas-Lift Allocation Optimization", *Journal of Japan Petroleum Institute*, Vol. 52(3), pp. 102-107, 2009 (with M. zerafat and A. A. Roosta)
31. "Mass Transfer Analysis and Simulation of A Hollow Fiber Gas-Liquid Membrane Contactor", *Iranian Journal of Science and Technology*, Vol. 32, B6, pp. 585-599, 2008 (with P. Keshavarz and J. Fathikalajahi)
32. "Simulation of Water Coning in Oil Reservoirs Using a Corrected IMPES Method" *Iranian Journal of Chemical Engineering* Vol. 5, No. 4 (Autumn), 2008, (with J. Foroozesh, D. Barzegari, and A. Jahanmiri)
33. "Mathematical modeling of the simultaneous absorption of carbon dioxide and hydrogen sulfide in a hollow fiber membrane contactor." *Sep. Purif. Technol.*, Vol. 63, 145-155, 2008. (with P. Keshavarz and J. Fathikalajahi)

34. "Mathematical modeling of gas-liquid membrane contactors using random distribution of fibers." *J. Membr. Sci.*, Vol. 325, 98-108, 2008, (with P. Keshavarz and J. Fathikalajahi)
35. "Characterization of asphaltene structure using atomic force microscopy", *Journal of Microscopy*, Vol. 231, Pt 3 2008, pp. 364–373 (with S. Sabbaghi, M.. Shariaty Niassar and A. Jahanmiri)
36. "Analysis of CO<sub>2</sub> Separation and Simulation of a Partially Wetted Hollow Fiber Membrane Contactor", *Journal of Hazardous Materials*, Vol. 152, 1237-1247, 2008. (with P. Keshavarz and J. Fathikalajahi)
37. "Characterization of Asphaltene Using Potential Energy and Nanocalculation", *Iran. J. Chem. Chem. Eng.* Vol. 27, No.2, 2008, pp 47-58 (with S. Sabbaghi, M.. Shariaty Niassar, A. Jahanmiri, G.A. Mansoori)
38. "A modified square well model in obtaining the surface tension of pure and binary mixtures of hydrocarbons" *The Journal of Chemical Thermodynamics*, Volume 40, Issue 7, July 2008, Pages 1131-1135 (with A. Bitaab, V. Taghikhani and C. Ghotbi)
39. "Predicting The Onset of Asphaltene Precipitation by Virial EOS", *FDMP*, Vol.4, No. 2, pp 113- 124, 2008 (with S. Sabbaghi, M. Shariaty-Niassar, and A. Jahanmiri)
40. "The Possibility of Wax Formation in Gas Fields: A Case Study", *Journal of Natural Gas Chemistry*, Volume 16, Issue 3, September 2007, Pages 293-300 (with Z. Jeirani, A. Lashanizadegan and J. Javanmardi)
41. "Numerical Modeling of GOGD Process in Stratified and Fractured Porous Media", *Journal of Porous Media*, 11 (5), 2008. (with M. Nabipour and M. Zerafat)
42. "Simultaneous Heat and Fluid Flow in Porous Media (Case Study: Steam Injection for Tertiary Oil Recovery)" *Chemical Engineering Communications*, Volume 195, Issue 5 May 2008 , pages 521 - 535. (with A. Lashanizadegan and M. Homayouni)
43. "Experimental and Theoretical Investigation of LNAPL Movement in stratified Media during Soil Remediation", *Journal of Environmental Technology*, 28 (7):743-750, July 2007 (with A. Lashanizadegan and H. Kazemi)

44. "Development of a user-friendly virtual laboratory for simulating 3D transient heat transfer in regular-shaped solids", *International Journal of Mechanical Engineering Education*, Vol. 36/1 pp. 81-89, 2007. (with S.M. Tauseef, and C. Guzman)
45. "Simulation predicts condensate formation in Aghar gas field, Iran", *Oil and Gas Journal*, Vol. 104 Issue 47 December 18, 2006. (with A. Zolfaghari)
46. "The in situ Microbial Enhanced Oil Recovery in Fractured Porous Media", *Journal of Petroleum Science and Engineering*, Vol. 58, pp. 161–172, 2007. (with A. Soudmand and H. Mohabatkar)
47. "Mathematical modeling of flue-gas desulfurization using lime slurry in a turbulent contact absorber", accepted for publication *International Journal of Environment and Pollution (IJEP)*, December 2005 (with A. Jahanmiri and H. Emamipour)
48. "Intermolecular Potential Energy and Intermolecular Forces of Nanostructures to Identify Asphaltene", *International Journal of Nanoscience & Nanotechnology (IJNN)*, Vol.1, No. 1, pp. 31-35, December 2005. (with S. Sabbaghi, A. Jahanmiri, M. Shariaty-Niassar and A. Boushehri)
49. "Mathematical Investigation of Effective Thermal Conductivity in Fractured Porous Media", *Journal of Porous Media* 9(7), 1–11 (2006) (with Nima Saber, Mohammad Javad Amani and Ali Bitaab)
50. "Laboratory Investigation of Thermally-Assisted Gas-oil Gravity Drainage for Secondary and Tertiary Oil Recovery in Fractured Models", *Journal of Petroleum Science and Engineering*, 2007, Volume (55), pp 74-82. (with M. Nabipour, M. Escrochi, F. Boukadi, M. Wadhahi, R. Maamari and A. Bemani)
51. "Temperature Effects on Heavy Oil Relative Permeability during Gas-Oil Gravity Drainage (GOGD)", *Energy and Fuels Journal*, Volume 19 Issue 3 (May 18, 2005), May 18, pp 977 - 983 (With A. Lashanizadegan, and H. Kazemi)
52. "Compositional model optimizes gas lift", *Oil & Gas Journal*, Volume 103.2, January 10, 2005, pp 37-42 (with S.M. Tauseef, and C. Guzman)
53. "Experimental Measurement and Modeling of R22 (CHClF<sub>2</sub>) Hydrates in Mixtures of Acetone + Water", *Journal OF Chemical and Engineering Data*, 2004 Vol. 49, (with J. Javanmardi, R. Motealleh and M. Moshfeghian)
54. "Remediation of Oil Contaminated Soils Using Gravity Drainage Mechanism", *Iranian Journal of Chemical Engineering*, 2004, Volume 3, No. 11. (With S. Shayegh and A. Lashanizadegan)

55. "Intermittent Gas-Lift in Aghajari Oil Field, a Mathematical Study" Journal of Petroleum Science and Engineering, 2004, Volume 42/2-4 pp 245-255, (with M. Narimani and M. Moshfeghian)
56. "Estimation of SARA Fraction Properties with the SRK EOS", Journal of Canadian Petroleum Technology, September 2004, Volume 43, No. 9 (with K., Akbarzadeh, M., Moshfeghian, H.W. Yarranton)
57. "Prediction of the Densities of Heavy Oils and their SARA Fraction from the Cubic EOS", Iranian Journal of Science and Technology, Transaction B, December 2004, Vol. (28) No. B6, pp 695-699, (with K., Akbarzadeh, M., Moshfeghian, Kh. Nasrifar, H.W. Yarranton)
58. "Predict the Properties of Aqueous Mixed Electrolyte Solutions from Properties of the Individual Electrolyte Solution" Eng. Journal of the University of Qatar, Vol. 16, 2003, pp 29-38 (with Kh. Nasrifar and M. Moshfeghian)
59. "New achievements in Specific Gravity Calculations of LNG and NGL", Iranian Journal of Chemistry and Chemical Engineering, Vol. (20), Issue 2, 2002 (with M. Moshfeghian, Kh. Nasrifar, and K. Akbarzadeh)
60. "Simulation and Optimization of Continuous Gas Lift", Journal of Petroleum Technology, May 2002, page 60 (with A. Bahadori and M. Moshfeghian)
61. "Equations lead to Asphaltene Deposition Prediction", Oil & Gas Journal, Volume 100, Issue 44, Oct. 28, 2002 (with K. Akbarzadeh, Kh. Nasrifar, H.W. Yarranton and M. Moshfeghian)
62. "Measurement and Modeling of Bubble Point in Binary Carbon Dioxide systems with Tetrahydropyran and Methylcyclohexane", J. of Fluid Phase Equilibria, 5104(2002), pp. 1-15, (with Kh. Nasrifar, M.M. Heuvel, C.J. Peters and M. Moshfeghian)
63. "Method optimizes Aghajari oil field gas lift", Oil & Gas Journal, Volume 99, Issue 21, May 21, 2001 (with A. Bahadori and M. Moshfeghian)
64. "Improving the Simplified Perturbed-Hard-Chain Theory Equation of State Using a New Non-attracting Hard-Sphere Equation", Canadian Journal of Chemical Engineering, Volume 78 (December 2000), pp. 1111-1119 (with Kh. Nasrifar and M. Moshfeghian)
65. "A Compressed Liquid Density Correlation", J. of Fluid Phase Equilibria, 168, No. 2, pp. 149-163, 2000 (with Kh. Nasrifar and M. Moshfeghian)

66. "Generalized Saturated Liquid Density Prediction Method for Pure Compounds and Multicomponent Mixtures", J. of Fluid Phase Equilibria, 168, No. 1, pp. 71-90, 2000 (with Kh. Nasrifar and M. Moshfeghian)
67. "An Extended Saturated Liquid Density Equation", J. of Fluid Phase Equilibria, Vol. 166, pp. 163-181, (1999) (with Kh. Nasrifar and M. Moshfeghian)
68. "Unsteady State Two Phase Flow Pressure Drop Calculation", Engineering Journal of Qatar University, Vol. 5, (1992), p. 11-21 (with M. Moshfeghian and R.N. Maddox)
69. "Test of Mathematical Modeling for the Design of High Energy Scrubbers", Journal Aerosol Science, Vol. 20, No. 8, (1989), 1441-1444 (with M. Monabbati and M. Taheri)

#### **The most recent Papers Presented in International Conferences:**

1. "Nanotechnology-Assisted EOR Techniques: New Solutions to Old Challenges", SPE-157094, International Oil field Nanotechnology Conference and Exhibition held in Noordwijk, The Netherlands, 12–14 June 2012 (with M.M. Zerafat)
2. "Effect of MgO Nanofluid Injection into Water Sensitive Formation to Prevent the Water Shock Permeability Impairment", SPE-157106, International Oil field Nanotechnology Conference and Exhibition held in Noordwijk, The Netherlands, 12–14 June 2012 (with A. Habibi, A. Heidari, H. Al-Hadrami, A. Al-Ajmi and Y. Al-Wahibi)
3. "Bayesian Network Analysis as a Tool for Efficient EOR Screening", SPE-143282PP, SPE Enhanced Oil Recovery Conference held in Kuala Lumpur, Malaysia, 19–21 July 2011, (with M.M. Zerafat, N. Mehranbod and D. Barzegari)
4. "Zeta potential investigation and mathematical modeling of nanoparticles deposited on the rock surface to reduce fine migration" SPE-142633, SPE Middle East Oil and Gas Show and Conference, Manama, Bahrain, September 25-28, 2011 (with M. Ahmadi, A. Habibi and P. Pourafshary)
5. "Reduction of Fine Migration by Nanofluids Injection, an Experimental Study" SPE-144196, Proceeding of the 9th SPE European Formation Damage Conference. Noordwijk, the Netherlands, June 7-10, 2011, (with M. Ahmadi, A. Habibi and P. Pourafshary)

6. "Mathematical Modeling of Fines Fixation in the Sandstone Cores Soaked by MgO Nanofluid" IPTC-14846, Proceeding of the International Petroleum Technology Conference held in Bangkok, Thailand, 15–17 November 2011, (with M. Ahmadi, A. Habibi and P. Pourafshary)
7. "The Effects of CO<sub>2</sub> Concentration in Flue Gas Injection for Heavy Oil Recovery from Fractured Reservoirs during GOGD Process", SPE-157201, SPE Heavy Oil Conference Canada held in Calgary, Alberta, Canada, 12–14 June 2012 (with A. Mohsenzadeh, M. Escrochi, M.V. Afraz, and Gh. Karimi)
8. "Investigation of Electrowetting process in Carbonate reservoirs layer", 20th Annual International Conference on Mechanical Engineering-ISME2012 16-18 May, 2012, School of Mechanical Eng., Shiraz University, Shiraz, Iran, (with M. Eghtesad)
9. "Application of Electrowetting process in Sand rock reservoirs layer using N-hexane", 20th Annual International Conference on Mechanical Engineering-ISME 2012 16-18 May, 2012, School of Mechanical Eng., Shiraz University, Shiraz, Iran, (with M. Eghtesad)
10. "Experimental Investigation of Heavy Oil Recovery from Fractured Reservoirs by Secondary Steam – Gas Assisted Gravity Drainage", SPE-157202, SPE Heavy Oil Conference Canada held in Calgary, Alberta, Canada, 12–14 June 2012, (with A. Mohsenzadeh, M. Escrochi, M.V. Afraz and Y. Alwahaibi)
11. "Experimental Investigation of Secondary Oil Recovery in Fractured Media", 7th International Chemical Engineering Congress & Exhibition Kish, Iran, 21-24 November, 2011 (with P. Maroufi, H. Rahmanifard, and A. Jahanmiri)
12. "Wettability Alteration of Carbonate Rocks during Surfactant Flooding", accepted as oral presentation in International Chemical Engineering Congress, Nov, 2011, Kish Island, Iran (with Kh. Jarrahan, O. Seiedi and M. Vafaie Sefti)
13. "Image synthesis using Conditional Random Fields", Image Processing (ICIP), 2010 17th IEEE International Conference, 2010, 3997–4000, (with E. Ahmadi, Z. Azimifar and P. Fieguth)
14. "The Roles of Intermolecular Forces on the Film Stability During Wettability Alteration Process of the Oil Reservoir Rocks", SPE-132616, Energy Resources Conference, Port of Spain, Trinidad, 27-30 Jun 2010 (with M. Rahbar and M.H Ghatee)
15. "A Nano-Scale Study of Thin Water Film Stability during Wettability Alteration Process of Oil Reservoir Rocks", Tech. Connect World Conference and Expo 2010, Anaheim, California, 21-25 Jun 2010 (with M. Rahbar, and M.H. Ghatee)

16. "Investigation of Chemical Selection and their Arrangement during Alkaline/Surfactant /Polymer Flooding and the Wettability Alteration Effects", accepted as oral presentation in 12th Iranian Chemical Engineering Congress, 20-23 Oct, 2008, Tabriz, Iran (with N. Bahar, O. Seiedi, M. Nabipour, M. Shiea and M. Gholipour)
17. "Experimental Investigation of the Effect of Wettability and Drainage Rate on Tertiary Oil Recovery in Fractured Media", 16th European Symposium on Improved Oil Recovery, Cambridge, UK, 12-14 April 2011, (with P. Maroufi, M. Escrochi, and A. Jahanmiri)
18. "Macroscopic, Microscopic Investigation of Wettability Alteration of Iranian Oil Field Rock using Surfactants", 10th International Symposium on Evaluation of Wettability and its effect on Oil Recovery, 26-28 Oct, 2008, Abu Dhabi, UAE, (with O. Seiedi, M. Nabipour, S. Mogharebian, N. Bahar, and M.H.Ghatee)
19. "Bi- fractal dimension description- Inferring topography alteration of an asphaltene deposited heterogeneous surface". The 6th International Chemical Engineering Congress & Exhibition (IChEC 2009), Kish Island, Iran, (2009) (with Sayyad Amin J., Alamdari A., Escrochi M., Jahromi H., Nikooee E.)
20. "Fractal Analysis of Surface Roughness Induced by Asphaltene Deposits: Effect of Surface Topography on Wettability Alteration", 1st International Petroleum Conference & Exhibition Session (EAGE Conference), May 2009. (with Nikooee E., Sayyad Amin J., Alamdari A., Jahromi H., Escrochi M.)
21. "A. Modeling Thermally Induced Wettability Alteration Using Bayesian Belief Networks", 10th Intl. Wettability Conference Oct 2008, Abu Dhabi, UAE, (2008) (with Sayyad Amin J., Escrochi M., Mehranbod N., Namazirad M.H., Alamdari A.)
22. "Monitoring the Wettability of Oil Reservoir Rocks by AFM during Surfactant Treatment" International conference of European Association of Geoscientists and Engineers (EAGE), 4-6 May 2009, Shiraz, Iran, (with O. Seiedi, M. Rahbar, M. Nabipour, M. Ghatei.
23. "Effect of Slugs Arrangement Injection during Chemical Flooding in Vuggy Rocks" International conference of European Association of Geoscientists and Engineers (EAGE), 4-6 May 2009, Shiraz, Iran, (with N. Bahar, M. Shiea, M. Gholipour, M. Nabipour, M. Aoudia )
24. "Macroscopic, Microscopic investigation of wettability alteration of Iranian oil field rock using surfactants", 10th international symposium on evaluation of wettability and its effect on oil recovery will be held on 26-28 October 2008, (with O. Seiedi, M. Nabipour, S. Mogharebian, N. Bahar, M.H. Ghatei)

25. "Wettability Alteration at Elevated Temperatures: The Consequences of Asphaltene Precipitation", Lafayette, Louisiana, USA. Paper No. SPE 112428 PP, International Symposium & Exhibition on Formation Damage Control, February 13-15, 2008, (with M. Escrochi, M. Nabipour, N. Mehranbod)
26. "Novel Alkyl Ether Sulfonates for Improved Oil Recovery from Yibal Field (Oman)", 14th European Symposium on Improved Oil Recovery (IOR), Cairo, Egypt, April 22 – 24, 2007, (with M. Aoudia, R.S. Al-Maamari, M. Nabipour, A.S. Al-Bemani)
27. "An Inquiry of Formation Damage in Oil Reservoirs During Thermal Enhanced Oil Recovery – Case Study: (In-Situ Combustion)", Improved Oil Recovery Middle East Conference, Dubai, United Arab Emirates, May 21-24, 2006, (with M. Nabipour, M. Escrochi, F.H. Boukadi, M. Wadhahi, R. Maamari, & A.S. Bemani)
28. "The Influence of mineral Transformation on Thermally Induced Wettability Alterations." The Oil Sands and Heavy Oil Technologies, Calgary, Alberta, Canada, July 18-20, 2007, (with M. Escrochi, M. Nabipour, A. Bemani, R. Maamari, M. Wadhahi, and F. Boukadi)
29. "Mathematical Modeling of the Simultaneous Absorption of CO<sub>2</sub> and H<sub>2</sub>S in a Hollow Fiber Membrane Contactor." Accepted for presentation in *10<sup>th</sup> World Filtration Conference*, Leipzig, Germany, 2008, (with Keshavarz P. and Fathikalajahi J.)
30. "Investigation of thermal gas-oil gravity drainage (GOGD) in fractured carbonate reservoirs." 14<sup>th</sup> Middle East Oil and Gas Show and Conference, March 12-15, 2005, SPE, Bahrain, (SPE-93585), (with Boukadi, F., Wadhahi, M., Maamari and R., Bemani, A.)
31. "Visualization Experiments on Immiscible Gas and Water Injection by Using 2D-Fractured Micromodels" 14<sup>th</sup> Middle East Oil and Gas Show and Conference, March 12-15, 2005, SPE, Bahrain, (SPE-93537), (with ShariatPanahi F. haghghi and M., Sahimi, M.)
32. "Visualization Study on the Effect of Fracture Orientations on Microbial Enhanced Oil Recovery", Oil & Gas Conference and Exhibition, March 7-9, 2005, Kuwait, (with A. Soudmandasli, M. Zarei and H. Mohabatkar)
33. "Gas Oil Gravity Drainage (GOGD) in Fractured Reservoirs", 13<sup>th</sup> International Oil, Gas and Petrochemical Congress (IOR 2005), 24 - 26 January 2005, Tehran, Iran, (with A. Al-Bemani, F. H. Boukadi and R Maamari)
34. "Enhanced Heavy Oil Recovery Using Steam Injection", 13<sup>th</sup> International Oil, Gas and Petrochemical Congress (IOR 2005), 24 - 26 January 2005, Tehran, Iran, (with M. Homayoni, and A. Lashanizadegan)

35. "Experimental Dissociation Conditions of Propane Hydrate in Mixture of Acetone + Water", Accepted for Presentation, The 11th International Workshop on Industrial Crystallization, GyeongJu, Korea, Sep. 15-17, 2004, (with Javanmardi, J., R. Motealleh, and A. Lashanizadegan)
36. "Spill Blockade Using Microbial Permeability Reduction Technique", Presented at Environmental Design Completion, AlAin, UAEU, UAE (May, 2004), (with Alireza Soodmand, Farzad Shariatpanahi, Mehdi Escrochi), Awarded the second place shared with Oregon State University in the Competition.
37. "Steam Assisted Gravity Drainage Remediation of Contaminated Soils", Presented at Environmental Design Completion, AlAin, UAEU, UAE (May, 2004), (with Moein Nabipur, Hamid Kazemi, Ahad Sedghamiz)
38. "Experimental Measurement and modeling of R22 Hydrate in the presence of Acetone + Water", 2nd International Conference of Chemistry and its Applications, Dec. 6-9 2003, University of Qatar, Doha, (with Javanmardi, J., Motealleh, R., Moshfeghian, M.)
39. "Wettability Alteration Using Silanization Process", 2nd International Conference of Chemistry and its Applications, Dec. 6-9 2003, University of Qatar, Qatar, Doha (with Lashanizadegan, A.)
40. "The Group Contribution Model in the Prediction of Ternary Solid-Liquid Equilibrium Diagrams for two Solid Isomers Dissolved in a Solvent", 2nd International Conference of Chemistry and its Applications, Dec. 6-9 2003, University of Qatar, Qatar, Doha (with Lashanizadegan, A.)
41. "Predict the Properties of Aqueous Mixed Electrolyte Solutions Using the Properties of Respective Aqueous Single Electrolyte Solutions Only" Ninth International Conference on Properties and Phase Equilibria for Product and Process Design, May 20 - May 25, 2001 Kurashiki, Japan (with Kh. Nasrifar and M. Moshfeghian)
42. "Prediction of Asphaltene Precipitation with a Modified SRK EOS", accepted, 5th International Symposium on Thermodynamic of Heavy Oils and Asphaltenes, 3rd International Conference on Petroleum Phase Behavior and Fouling, AIChE Spring National Meeting, New Orleans, March 10-14, 2002. (with Akbarzadeh, K., Moshfeghian, M., Alboudwarej, H., Svrcek, W.Y., Yarranton, H.W.)
43. "Estimation of SARA Fraction Properties with the SRK EOS", CIPC Paper No. 2001-122, Can. Intl. Petr. Conf., Calgary, June 12-14, 2001. (with Akbarzadeh, K., Moshfeghian, M., Ayatollahi, S., Alboudwarej, H., Yarranton, H.W.)
44. "Simulation and Optimization of Continuous Gas Lift System in Aghajari Oil Field", SPE Asia Pacific Improved Oil Recovery Conference held in Kuala Lumpur, Malaysia, 8-9 October 2001 (with A. Bahadori and M. Moshfeghian)

45. "Modified SPHCT Equation of State Using a Non-Attracting Hard-Sphere Equation", 16th IUPAC Conference on Chemical Thermodynamics, Dalhousie University, Halifax, Nova Scotia, Canada, 2000 (with Kh. Nasrifar and M. Moshfeghian)
46. "Investigation of the GAIGI process in Stratified Porous Media for the Recovery of Waterflood Residual Oil", Sixth Petroleum Conference of the South Saskatchewan Section, the Petroleum Society of CIM, paper #139, Regina, Saskatchewan, Canada, (Oct. 18-19, 1995) (with I. Chatzis)
47. "Experimental Investigation of the Oil Bank Movement During Gravity Assisted Inert Gas Injection in Stratified Media", International Non-Renewable Energy Sources Congress, Tehran, Iran, (Dec. 26-29, 1993) (with I. Chatzis)
48. "The Effect of Gas Injection Rate on the Recovery of Water flood Residual Oil Under Gravity Assisted Inert Gas Injection", 7th European Symposium on IOR, paper #20, Moscow, Russia, (Oct. 27-29, 1993) (with I. Chatzis)
49. "The Effect of Production Rate on the Recovery of Water flood Residual Oil Under Gravity Assisted Inert Gas Injection", Fifth Petroleum Conference of the South Saskatchewan Section, the Petroleum Society of CIM, paper #32, Regina, Saskatchewan, Canada, (Oct. 18-19, 1993) (with I. Chatzis)
50. "Free-Fall Gravity Assisted Inert Gas Injection Process Theory and Practice", Porous Media Research Institute Annual Meeting, Waterloo, Ontario, Canada (November 17-19, 1994)
51. "Experimental Investigation of the Oil Bank Movement During Gravity Assisted Inert Gas Injection in Heterogeneous Media", Porous Media Research Institute Annual Meeting, Waterloo, Ontario, Canada (November 18-19, 1993)
52. "A New Approach to Measure the Oil Relative Permeability in Tertiary Oil Recovery Processes", Porous Media Research Institute Annual Meeting, Waterloo, Ontario, Canada (November 18-19, 1993)
53. "The Effect of Gas Injection Rate on the Recovery of Water flood Residual Oil Under Gravity Assisted Inert Gas Injection", Porous Media Research Institute Annual Meeting, Waterloo, Ontario, Canada (November 19-20, 1992)
54. "Unsteady State Two Phase Flow Pressure Drop Calculation", European Symposium on the Computer Application in the Chemical Industry, Erlangen, Germany April 23-26, 1989 (with M. Moshfeghian)

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