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EDUCATION

Ph.D., Chemical and Petroleum Engineering, University of Calgary, Canada, 2006
M.Sc., Petroleum Engineering, University of Calgary, Canada, 2001
B.Sc. with Honors, Petroleum Engineering, Petroleum University of Technology, Iran, 1992

CV HIGHLIGHTS

Research Interests & Accomplishments

- Shale gas/oil production, reserve estimate, fluid flow modeling
- Enhanced oil recovery (EOR) using nanoparticles and CO_2
- 54 published peer-reviewed journal papers and 25 SPE conference proceedings
- Publication citations: 4563; Publication h-index: 29 and i10-index: 48 (Google Scholar)

Teaching Experience

- Taught graduate level courses at the UT-Austin (USA) and U of Calgary (Canada) since 2009
- Taught undergraduate courses and their associated labs at the U of Calgary (Canada) since 2003
- Taught short courses internationally

Supervisory and Managerial Experience

- PI, Led international research groups to study nanoparticles transport in porous media
- Co-PI, Mudrock/shale Systems Research Laboratory (MSRL) consortium with >35 sponsoring companies
- PI and Manager of an unconventional research laboratory at UT-Austin
- Associate Editor of SPE-Journal of Canadian Petroleum Technology (2010-15)
- Chairman of the JSG school equipment committee with an annual budget of $750K (2014-15)
- Chaired sessions in SPE, AAPG, and SEG meetings
- Supervised/mentored 38 researchers, postdoctoral fellows and graduate students

Research fund

- Attracted $7M research fund in the past 9 years to study shale gas production and reserve estimation, and fluid and nanoparticle transport in porous media for EOR applications.

Invited talks

- 33 invited talks in leading universities and in the research labs of oil and service companies.

Honors & Awards

- SPE 'Outstanding Service' award (2010)
- SPE 'A Peer Apart' award (2014)

Expert technical reviewer

- 9 international research funding organizations (USA, Canada, Swiss, UK, Poland, Australia, Kazakhstan)
- 37 high impact scientific and technical journals in engineering and science

RESEARCH AND ENGINEERING EXPERIENCE

A. Research Associate (2008-2014)
B. Research Scientist (2014-present).
Bureau of Economic Geology, Jackson School of Geosciences, The University of Texas at Austin

- Established and leads an unconventional laboratory at the UT-Austin to study shale gas systems
- Developed a novel method to accurately estimate lost gas from shale canister data
- Lead an integrated multiscale research on fluid flow in shale
- Developed new permeability models for the shale gas system
- Used atomic force microscope (AFM) for the first time to detect nanopores in shale samples
- Used AFM for the first time to measure liquid slip in shale samples
- Modified pulse decay permeability analysis to include slip and Knudsen effects
- Designed a new model to determine optimum refracturing time of shale wells
- Developed a model to study fluid loss during hydraulic fracturing
- Studied interaction of nanoparticles and minerals suspended in aqueous and non-aqueous media
- Developed a new technique to measure interactive forces of nanoparticles and brine-oil interface
- Studied molecular interactions of fluid molecules (H_2O, CO_2, N_2, & HC) and pore walls in organic and inorganic minerals of the shale system
- Developed a mathematical model to determine macroscale parameters from pore and sub-pore physics
- Studied the use of nanoparticles for EOR
- Studied the use of nanoparticles to enhance CO_2 storage and sequestration in deep saline aquifers

B. Visiting professor (summer of years 2009-13 and 2017)
University of Calgary, Canada

Fundamental study of nanoparticle interactions with fluid interfaces using atomic force microscopy (AFM) [Collaboration with Professor Matthias Amrein, Faculty of Medicine].

- Experimental study of nanoparticle transport in microfluidic porous-chips. [Collaboration with Professor Matthias Amrein, Faculty of Medicine and Professor Ayo Jeje, Chemical and Petroleum Engineering].

C. Postdoctoral fellow (2006-08)
National Science and Engineering Research Council of Canada (NSERC), Alberta Research Council, Calgary, Alberta, Canada

- Studied CO_2 injection in geological formations for Enhanced Gas Recovery (EGR). Detailed slim-tube, core flood, 3-D dispersion experiments, and mathematical upscale modeling.

E. Ph.D. student (2001-06)
University of Calgary, Calgary, Alberta, Canada

- Developed microfluidic models for the study of microparticles transport and retention in porous media.
- Performed atomic force microscopy (AFM) to measure interactive forces between particles and the fibers in fibrous porous media.

- Modified Taylor-Aris dispersion theory for the dispersion of finite size particles in porous media including surface interactive forces.
- Teaching assistant: variety of undergraduate and graduate courses: Transport processes, Naturally fractured reservoirs, chemical engineering process calculations, Separation processes, Properties of solids and fluids, Reservoir engineering.

G. MSc. Student (1999-2001)
University of Calgary, Calgary, Alberta, Canada

- Modified a network model of porous media to study isolated bubble movement in saturated porous media (Heavy oil flow).
- Assisted to develop two undergraduate laboratories for the petroleum engineering students; Miscible flow in porous media, Immiscible flow in porous media.
- Laboratory instructor; properties of solids and fluids, miscible flow, immiscible flow.

H. Reservoir engineer (1992-1999)
NIOC, Ahwaz

- Detailed experimental and numerical study of hydrocarbon miscible gas injection in a giant light oil reservoir. The study included:
  - Slim-tube miscibility and core flooding experiments to determine miscibility condition of different hydrocarbon gases and reservoir oil, PVT experiments and data analysis
  - Tuning EOS and performing compositional simulation to model slim-tube and core flood tests.

TEACHING EXPERIENCE

(1999-present)
- Developed and taught two graduate courses at UT-Austin (USA).
- Taught graduate courses at the U of Calgary (Canada)
- Taught an undergraduate course with its associated labs to second year engineering student at the U of Calgary for 7 successive years
- Developed two labs for the senior undergraduate petroleum engineering students at the U of Calgary
- Instructor of numerous undergraduate labs at the U of Calgary
- Teaching assistant of many undergraduate and graduate courses at the U of Calgary

A. Lecturer, Graduate courses (2010-present)
Department of Petroleum and Geosystems Engineering and Department of Geological Sciences, UT-Austin, USA (2010-present)
Department of Chemical and Petroleum Engineering, University of Calgary, Canada, (2011-12)

- Developed and taught a graduate level course titled ***'Advances in Unconventional Shale Gas Resources'***. 173 students took this course so far. In this course students learn about the differences between conventional and unconventional reservoirs. New techniques such as SEM and AFM to characterize pores in shale samples, sorption and geochemistry, some aspects of geomechanics and well logging are included in the course material. Fluid flow modeling is emphasized in this course.

- 2017 (fall): UT-Austin, Enrollment: 26 (18 graduate and 8 senior undergraduate students). Overall instructor rating (4.3/5.0).
- 2017 (summer): U of Calgary (Canada), Enrollment: 13 (graduate students).
- 2016 (fall): UT-Austin, Enrollment: 18 (14 graduate and 4 senior undergraduate students). Overall instructor rating (3.7/5.0).
- 2015 (fall): UT-Austin, Enrollment: 39 (29 graduate and 10 senior undergraduate students). Overall instructor rating (4.2/5.0).
- 2014 (fall): UT-Austin, Enrollment: 28 (19 graduate and 9 senior undergraduate students). Overall instructor rating (4.1/5.0).
- 2013 (fall): UT-Austin, Enrollment: 21 (graduate students). Overall instructor rating (4.2/5.0).
- 2012 (summer): U of Calgary (Canada), Enrollment: 37 (graduate students). Overall instructor rating (Excellent).
- 2012 (fall): UT-Austin, Enrollment: 17 (graduate students). Overall instructor rating (4.4/5.0).
- 2011 (summer): U of Calgary (Canada), Enrollment: 16 (graduate students). Overall instructor rating (Excellent).
- 2011 (fall): UT-Austin, Enrollment: 14 (graduate students). Overall instructor rating (4.6/5.0).
- 2011 (fall): UT-Austin, Enrollment: 15 (undergraduate students). Overall instructor rating (4.7/5.0).
- 2010 (fall): UT-Austin, Enrollment: 5 (graduate students). Overall instructor rating (4.3/5.0).

- Developed and co-taught a graduate-level course titled ***'Advances in CO_2 Injection and Storage in Geological Formations'.***
  - 2011 (fall): UT-Austin, Enrollment: 8 (graduate students). Overall instructor rating (N/A).
  - 2010 (fall): UT-Austin, Enrollment: 6 (graduate students). Overall instructor rating (5.0/5.0).
- Developed a graduate-level course titled ***'Continuum and Discrete Transport Processes'***. To be taught.

B. Lecturer, Undergraduate courses (2003-10)
Department of Chemical and Petroleum Engineering, University of Calgary, Canada

- Taught undergraduate level course titled ***'Properties of Solids and Fluids and its associated labs'***. More than 150 undergraduate students enrolled in this course. Instructor ratings were ***higher than average department ratings***. Number of enrollments are estimates.
  - 2010 (summer): U of Calgary (Canada), Enrollment: 27.
  - 2009 (summer): U of Calgary (Canada), Enrollment: 22.
  - 2007 (summer): U of Calgary (Canada), Enrollment: 29.
  - 2006 (summer): U of Calgary (Canada), Enrollment: 21.
  - 2005 (summer): U of Calgary (Canada), Enrollment: 30.
  - 2004 (summer): U of Calgary (Canada), Enrollment: 20.
  - 2003 (summer): U of Calgary (Canada), Enrollment: 18.

C. Short course Instructor (2008-19)

- 06/30-07/06/2019: China University of Petroleum, East China, Qingdao, China. Enrollment: 100. Unconventional Resources and Their Development History in US.
- 05/19/2019: AAPG conference, San Antonio, TX. Enrollment: 38. Title: Essentials for Understanding Unconventional Mudrock Plays.

- 01/17/2017: Statoil, Austin, TX. Enrollment: 22. Title: *Gas storage and productionin shale reservoirs.*
- 12/4/2012: McCombs School of Business, University of Texas at Austin. Enrollement: 35. Title: *The Key Exploration and Development Technology of Low Permeability and Extra-low Permeability Oil Reservoir*.
- 11/8/2012: McCombs School of Business, University of Texas at Austin. Enrollement: 40. Title: *Reserve and Deliverability Estimation in Shale Gas Reservoir.*
- 3/12-16/2012: PetroChina Research Laboratory, Beijing, China. Enrollement: 50. Title: *Fundamentals of shale gas production*.
- 11/20/2008: BEG, Houston, Texas. Enrollement: 150. Title: *Questions, answers, and challenges in shale gas/mudrock systems research: technologies and applications for shale reservoir successions*. (co-instructed)
- 9/10-11/2008: Hongzhu, China. Enrollement: 110. Title: *CO_2 injection in geological formations*.
- 9/8-9/2008: Hongzhu, China. Enrollement: 90. Title: *Heavy oil recovery.*
- 6/10-12/2008: CNPC Petroleum Center, Changchun, China. Enrollment: 150. Title: *Gas shale reservoir characterization*.

D. Lab instructor, (1999-2006) Undergraduate labs associated to courses
Department of Chemical and Petroleum Engineering, University of Calgary, Canada,

- Developed two undergraduate labs and instructed many labs
  - **Miscible flow lab.** I helped to develop this lab for the 4th-year undergraduate students in petroleum engineering program. The lab is a part of the curriculum at the U of Calgary. I have instructed this lab for few semesters.
  - **Immiscible flow lab.** I helped to develop this lab for the 4th-year undergraduate students in petroleum engineering program. The lab is a part of the curriculum at the U of Calgary. I have instructed this lab for few semesters.
  - Thermodynamics lab
  - Heat transfer lab
  - Properties of solids and fluids lab
  - Fluid mechanics lab
  - Separation process lab
  - Fluid flow in porous media lab

E. Teaching assistant (1999-2006) Graduate and undergraduate courses
Department of Chemical and Petroleum Engineering, University of Calgary, Canada,

Teaching assistant of numerous undergraduate and graduate courses (1999-2006).

- Numerical analysis
- Separation processes
- Reservoir Engineering
- Well testing
- Fractured reservoir (graduate level)
- Transport processes

- Chemical engineering process calculations
- Properties of solids and fluids

FUNDED RESEARCH PROJECTS

A. Principal Investigator (2017) Seed grant. Supported by Bureau of Economic Geology (Fund: $40K).

B. Principal Investigator (2008-present): ***Established an unconventional laboratory to study shale gas system and the application of nanoparticles in reservoir engineering***. Supported by the Jackson School of Geosciences at the UT-Austin (Fund: $250K). The lab was developed from scratch and has successfully attracted research fund and talented students and researchers. The research results of this lab have been published in peer-reviewed journal papers and conference proceedings. The lab is self-funded with an average annual expenditure of ~$200K.

C. Principal Investigator (2009-16): ***Transport of nanoparticle (NP) in porous media for EOR applications.*** Supported by Advanced Energy Consortium (AEC member companies include BP America, Baker Hughes, Halliburton, Marathon, Occidental, Petrobras, Schlumberger, Shell, Total, and BG group) (Fund: 3.1% of $58.0M funds over seven year; 2009-16).

In 2009, I was awarded this project as the Principal Investigator (PI) through Advanced Energy Consortium (AEC). AEC sponsoring companies include PETROBRAS (BR), Schlumberger, TOTAL, Statoil, Shell, BP, and BJ Groups. AEC started in 2008 with the mission of using nanotechnology in upstream oil and gas industry. AEC selects and supports research projects from national and international research centers. Technical members from companies and consultant scientists (TAC members) review the proposals and award selected projects. The award is through competitive evaluation of the research proposals received from highly recognized research institutions including Harvard University, Rice University, California Institute of Technology (Caltech), Boston University, Northwestern University, and UT-Austin (Chemical engineering and Electrical engineering departments). Each year the TAC committee re-evaluates the projects and decides to continue funding. I am probably the only PI that received the funds for 7 successive years. The topics of my AEC projects concern fundamental physics of nanoparticle transport in single-phase and multiphase saturated porous media. Below is the list of individual projects.

08/09–09/10: Micromodel tests & pore scale modeling of nanoparticle transport in porous media. (Status: Completed).
10/10–09/11: Interaction of nanoparticles and different minerals in brine. (Status: Completed).
10/11–09/12: Nanoparticle interactions with oil-brine interface. (Status: Completed).
10/12–11/13: AFM measurement of adsorption rate coefficients of nanoparticles in porous (Status: Completed).
12/13–03/16: Effect of polymer coated nanoparticle on their adsorption rate constant. Effect of polymer coating on nanoparticle interactions with oil-brine interface. (Status: Completed).

D. Principal Investigator (2010-13): ***Novel mathematical model of gas content estimation in shale using canister data***. Supported by ConocoPhillips (Fund: $300K over two and half years; 2010-13). (Status: Completed)

In 2010 ConocoPhillips invited me to develop a rigorous model to evaluate their canister data. We have developed a rigorous model that is currently being used by the COP geologists and petroleum engineers to evaluate their canister data. Canister data is important data to estimate gas in place in shale formations. From the results of this work we presented two talks in international conferences and a journal paper is published (*SPE Journal,* 2015).

E. Co-Principal Investigator (2010-present): **Mudrock Systems Research Laboratory (MSRL)*. Gas and oil production from unconventional shale reservoirs.*** Supported by a consortium of 28 oil and service companies. Member companies include Anadarko, BP, Centrica, Cenovus, Chesapeake, Cima, Cimarex, Chevron, Concho, ConocoPhilips, Cypress, Devon, Encana, ENI, EOG, EXCO, ExxonMobil, Hess, Husky, Kerogen, Marathon, Murphy, Newfield, Penn West, Penn Virginia, Pioneer, Samson, Shell, StatOil, Talisman, Texas American Resources, The Unconventionals, US EnerCorp, Valence, and YPF. (Fund: 20% of $12M funds over nine years—$1.3M per annum; 2010-2018).

In 2010, we started the MSRL consortium to perform research on shale gas. I have done both experimental and modeling research on gas and liquid flow in shale system as a part of my contribution to MSRL. Below is the list of individual projects. I lead an integrated multiscale research for oil and gas production from shale system.

01/10–09/10: Apparent permeability of gas in ultra-tight shale systems. (Status: Completed).

10/10–09/11: Fundamentals of two phase flow in shale system. (Status: Completed).

10/11–09/13: Hydraulic fracturing fluid loss in shale formations, measurement of liquid slip coefficients using atomic force microscopy (AFM). (Status: Completed).

10/12–08/15: Stochastic modeling of gas flow and sorption in shale. (Status: Completed).

09/14–08/16: Molecular dynamic study of recoverable hydrocarbon mixture adsorption in shale nanopores. (Status: Completed).

09/14–08/16: Molecular dynamic study of liquid slip in organic and inorganic shale nanopores. (Status: Completed).

09/14–08/16: Construction of 3D images from 2D scanning electron microscope (SEM) images of shale samples. (Status: Completed).

09/14–08/16: Pore scale modeling of slip-corrected liquid flow in shale system. (Status: Completed)

09/14–08/16: Stochastic liquid permeability model of shale. (Status: Completed)

05/16–08/19: Integrated multiscale studies of molecular-to-core scale and core-to-multiwell.

(Status: Active)

09/15–12/19: Effective medium approximation of pore pressure-dependent shale permeability. (Status: Active)

09/16–08/19: Realistic pore geometry network modeling of two-phase flow in shale. (Status: Active)

09/16–08/19: A stochastic shale permeability model with geomechanical effects. (Status: Active)

05/16–08/19: Molecular dynamics simulation of two-phase flow in realistic pore network of shale. (Status: Active)

05/16–08/19: Construction of three-dimensional (3D) reservoir model from two-dimensional (2D) outcrop images. (Status: Active)

F. Member of Research Team (2008-11): ***Pore characterization and permeability of shale gas samples***. Supported by ExxonMobil and Jackson School of Geosciences (Fund: 15% of $4.5M fund over three years; 2008-11). (Status: Completed)

The study included detailed work on detection of pore network in shale gas samples and characterization of the sample with the goal of reserve estimation and production deliverability. We used atomic force microscope (AFM) for the first time to detect nanopores in shale to validate pores detected by scanning electron microscope (SEM). We also developed gas flow models to modify the concept of Darcy permeability for shale system. We published a paper based on this study in 2009 that has been cited 743 times so far.

PENDING RESEARCH PROJECTS

A. Principal Investigator. US Department of Energy (DOE). **Customized Fracture-Fluid Chemicals to Minimize Pore Blockage in Bakken, Eagle Ford, and Permian Basins.** (Fund $1.2M, 2018-21)
B. Principal Investigator. National Academy of Science. Gulf Research Program. **Leakage magnitude and frequency of wellbore cements in abandoned offshore wells.** (Fund $800K, 2018-21)

AWARDS

13. ***"A Peer Apart"*** achievement award, Society of Petroleum Engineers (SPE), achievement of more than 100 reviews completed during the service for SPE peer-reviewed journals, 2014
12. Jack H. Mayfield, Jr. Fund for ***"Excellence in the Geological Sciences",*** 2013
11. Total E&P USA ***"Petroleum Faculty Fellowship in Geological Sciences"***, 2013.
10. ***"Outstanding Service Award"***, Society of Petroleum Engineers (SPE), awarded for the role of Associate Editor of the SPE-Journal of Canadian Petroleum Technology, 2010
9. ***"The Dr. S.M. Farouq Ali Best Paper"*** published in SPE-Journal of Canadian Petroleum Technology, 2009
8. ***"Achievement Award",*** Conventional Oil and Gas business unit, Alberta Research Council, 2008
7. ***"Dr. M. Butler Memorial Best Paper"*** presented at the Canadian International Petroleum Conference, 2007
6. Winner of the ***"Divisional Award"*** Alberta Research Council, 2007
5. ***"National Science and Engineering Research Council of Canada (NSERC)"*** postdoctoral fellowship, 2006-08.
4. ***"Province of Alberta Graduate Fellowship"***, University of Calgary, Canada, for 4 years, 2001-05
3. Faculty of Graduate Studies ***"Scholarship"***, University of Calgary, Canada, 2001-05
2. ***"Best student paper"*** presented in Purification and Analysis session of the 53rd Canadian Chemical Engineering Conference (CSChE2003), Hamilton, Canada, 2003
1. ***"First place"*** at the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), "Student Essay Competition", Canada, 2002

PUBLICATIONS (Published)

- Publication citations: 4563
- Publication h-index: 29
- Publication i10-index: 48 (Google Scholar)
- IF: Impact Factor

54. Guanglong Sheng, **Farzam Javadpour**, Yuliang Sua, Jinghua Liuc, Kunjie Lic, Wendong Wanga. 2019. A Semianalytic Solution for Temporal Pressure and Production Rate in a Shale Reservoir with Non-Uniform Distribution of Induced Fractures. ***SPE Journal (IF: 2.550)***. Published online.

53. Guanglong Sheng, **Farzam Javadpour**, Yuliang Su, 2019, Dynamic Porosity and Apparent Permeability in Porous Organic Matter of Shale Gas Reservoirs, ***Fuel (IF. 4.601)***. V. 251, p. 341-351.

52. Wang, S., Feng, Q., **Javadpour, Farzam**, Wu, K. 2019, Competitive adsorption of methane and ethane in montmorillonite nanopores of shale at supercritical conditions: A grand canonical Monte Carlo simulation study. ***Chemical Engineering Journal (IF: 6.735)***. v. 355, p. 76-90. DOI:10.1016/j.cej.2018.08.067

51. Afsharpoor, A., **Javadpour, Farzam.** 2018. Pore Connectivity Between Organic and Inorganic Matter in Shale: Network Modeling of Mercury Capillary Pressure. ***Transport in Porous Media (IF: 2.205)***. DOI: 10.1007/s11242-018-1132-0

50. Xu, S., Feng, Q., Wang, S., **Javadpour, Farzam,** 2018. Optimization of multistage fractured horizontal wells in tight oil based on embedded discrete fracture model. ***Computers & Chemical Engineering (IF: 3.113)***. v. 117, 291-308. DOI: 10.1016/j.compchemeng.2018.06.015

49. Hosseini, A., **Javadpour, Farzam,** 2018, Determination of Nanoparticle Macrotransport Coefficients from Pore Scale Processes. ***Transport in Porous Media (IF: 2.205)***. v.125, 377-394. DOI: 10.1007/s11242-018-1123-1.

48. Naraghi, M.E., **Javadpour, Farzam**, Ko, T.K. 2018, An Object-based Shale Permeability Model: Non-Darcy Gas Flow, Sorption, and Surface Diffusion Effects. ***Transport in Porous Media (IF: 2.205)***. v. 125, p. 23-39. https://doi.org/10.1007/s11242-017-0992-z.

47. Wang, S., Feng, Q., Zha, M. **Javadpour, Farzam** 2018, Hu, Q., Supercritical Methane Diffusion in Shale Nanopores: Effects of Pressure, Mineral Types, and Moisture Content. ***Energy & Fuels (IF: 3.091)***., v. 32, 169-180. DOI: 10.1021/acs.energyfuels.7b02892.

46. Tahmasebi, P., **Javadpour, Farzam**, Freboug, G. 2018, Geologic Modeling of Eagle Ford Facies Continuity Based on Outcrop Images and Depositional Processes, ***SPE Journal (IF: 2.21)***. Aug. 2018, 1359-1371.

45. Sheng, G., **Javadpour, Farzam**, Sua, Y. 2018, Effect of microscale media compressibility on apparent permeability and porosity in shale gas reservoirs. ***International Journal of Heat and Mass Transfer (IF: 3.458)***, 120. 56-65, https://doi.org/10.1016/j.ijheatmasstransfer.2017.12.014.

44. Tahmasebi, P., **Javadpour, Farzam**, Sahimi, M., 2017, Data Mining and Machine Learning for Identifying Sweet Spots in Shale Reservoirs, ***Expert Systems With Applications (IF: 3.928).*** v. 88(1 December). 435-447, doi.org/10.1016/j.eswa.2017.07.015.

43. Sheng, G., SU, Y., Wang, W., **Javadpour, Farzam**, Tang, M., 2017**,** Application of Fractal Geometry in Evaluation of Effective Stimulated Reservoir Volume in Shale Gas Reservoirs, ***Fractals (IF:1.540)*****.** 25(4), 1740007 (13 pages), doi: 10.1142/S0218348X17400072

42. Singh, H., and **Javadpour, Farzam**, 2017, Adsorption of Nanoparticles in Porous Media: Effect of Length Scale with Its Corresponding Physical and Chemical Heterogeneity, ***Geofluids (IF: 2.685).*** v. 2017, Article ID 8730749, 16 pages, https://doi.org/10.1155/2017/8730749

41. Ghanbarian, B., **Javadpour, Farzam**, 2017, Upscaling pore pressure-dependent permeability of shales, ***Journal of Geophysical Research-Solid Earth (IF: 3.35)***. 122, 2541–2552, doi:10.1002/2016JB013846.

40. Mehrabi, M., **Javadpour, Farzam**, Sepehrnoori, K., 2017, Analytical analysis of gas diffusion into non-circular pores of shale organic matter, ***Journal of Fluid Mechanics (IF: 2.82)***. 819, pp. 656-677. DOI:10.1017/jfm.2017.180.

39. Afsharpoor, A., **Javadpour, Farzam**, Wu, J., Ko, L.T., Liang, Q., 2017, Network modeling of liquid flow in Yanchang shale, ***Interpretation (IF: 0.69)*.** 5(2), SF99-SF107. http://dx.doi.org/10.1190/INT-2016-0100.1.

38. Tahmasebi, P., **Javadpour, Farzam**, Sahimi, M., 2016, Stochastic shale permeability matching: Three-dimensional characterization and modeling, ***International Journal of Coal Geology (IF: 4.783)***. 165, 231-242. DOI:10.1016/j.coal.2016.08.024.

37. Wang, S., Feng, Q., **Javadpour, Farzam**, Yang, Y-B, 2016, Breakdown of fast mass transport of methane through calcite nanopores, ***The Journal of Physical Chemistry C (IF: 4.536)***, v. 120, 14260-14269. DOI:10.1021/acs.jpcc.6b05511.

36. Wang, S., **Javadpour, Farzam**, Qihong, F., 2016, Fast mass transport of oil and supercritical carbon dioxide through organic nanopores in shale, ***Fuel (IF: 4.601)***. v. 181, p. 741-758. DOI:10.1016/j.fuel.2016.05.057

35. Afsharpoor, A., **Javadpour, Farzam**, 2016, Liquid slip flow in a network of shale noncircular nanopores, ***Fuel (IF: 4.601)*.** v. 180, p. 580-590. DOI:10.1016/j.fuel.2016.04.078

34. Tahmasebi, P., **Javadpour, Farzam**, Sahimi, M., 2016, Multiscale study for stochastic characterization of shale samples, ***Advances in Water Resource (IF: 3.221)***. v. 89, p. 91-103. DOI:10.1016/j.advwaters.2016.01.008.

33. Wang, S., **Javadpour, Farzam**, Qihong, F., 2016, Confinement correction to mercury intrusion capillary pressure of shale nanopores. ***Scientific Reports* (*Nature*) (IF: 4.259)**. Feb. 1, 6:20160, p. 1-11. DOI:10.1038/srep20160

32. Wang, S., **Javadpour, Farzam**, Qihong, F., 2016, Molecular dynamics simulation of oil transport through inorganic nanopores of shale. ***Fuel*.** v. 171, p. 74-86. DOI:10.1016/j.fuel.2015.12.071

31. Tahmasebi, P., **Javadpour, Farzam**, Sahimi, M., 2015, Multiscale and multiresolution modeling of shales and their flow and morphological properties, ***Scientific Reports* (*Nature*)**. Nov. 12, 5:16373, p. 1-11. DOI: 10.1038/srep16373

30. Singh, H., **Javadpour, Farzam**, 2015, Langmuir slip-Langmuir sorption permeability model of shale, ***Fuel*.** v. 164, p. 28-37.

29. Tahmasebi, P., **Javadpour, Farzam**, Sahimi, M., 2015, Three dimensional stochastic characterization of shale SEM images, ***Transport in Porous Media***. v. 110, p. 521-531. DOI 10.1007/s1 1242-015-0570-1

28. Javadpour, Farzam, McClure, M., Naraghi, M.E., 2015, Slip-corrected liquid permeability and its effect on hydraulic fracturing and fluid loss in shale, ***Fuel*.** v. 160, p. 549-559.

27. Wang, S., Qihong, F., **Javadpour, Farzam**, Xia, T., Li, Z., 2015, Oil adsorption in shale nanopores and its effect on recoverable oil-in-place, ***International Journal of Coal Geology***. v. 147-148, p. 9-24.

26. Hosseini, S.A., **Javadpour, Farzam**, Michael, G.E., 2015, Novel analytical core sample analysis indicates higher gas content in shale gas reservoirs, ***SPE Journal***. Dec., p. 1397-1408.

25. Elahi Naraghi, M., **Javadpour, Farzam**, 2015, A stochastic permeability model for the shale-gas systems: ***International Journal of Coal Geology***. v. 140, 111-124. Doi: 10.1016/j.coal.2015.02.004

24. Javadpour, Farzam, Ettehadtavakkoli, A., 2015, *Book chapter*, Chapter 11: Fluid flow processes in shales. (Book: Fundamentals of Gas Shale Reservoirs; Editor: Reza Rezaee, Publisher: John Wiley and Sons Inc., ISBN 9781-118-64579-6 hardback).

23. Singh, H., **Javadpour, Farzam**, Ettehadtavakkoli, A., Darabi, H., 2014, Non-empirical apparent permeability of shale: ***SPE Reservoir Evaluation & Engineering-Reservoir Engineering***. v. 17, issue 3, p. 414-424.

22. Yu, W., Luo, Z., **Javadpour, Farzam**, and Sepehrnoori, K., 2014, Sensitivity analysis of hydraulic fracture geometry in shale gas reservoirs: ***Journal of Petroleum Science and Engineering***, v. 113, p. 1-7.

21. Rezaveisi, M., **Javadpour, Farzam**, Sepehrnoori, K., 2014, Modeling chromatographic separation of produced gas in shale wells, ***International Journal of Coal Geology***, v. 121, p. 110-122.

20. Etminan, S.R., **Javadpour, Farzam**, Maini, B.B., Chen, Z., 2014, Measurement of gas storage processes in shale and of the molecular diffusion coefficient in Kerogen**: *International Journal of Coal Geology***, v. 123, p. 10-19. doi.org/10.1016/j.coal.2013.10.007

19. Sajjadiani, S., **Javadpour, Farzam**, Jeje, A., 2014, Trajectory and transit patterns of isolated nanoparticles in structured micromodels, ***Austin Journal of Chemical Engineering***, v. 1, Issue 2.

18. Ghanbarnezhad, R., **Javadpour, Farzam**, 2014, Applying method of characteristics to determine pressure distribution in one-dimensional shale gas samples: ***SPE Journal***, June, p. 361-372.

17. Mehmani, A., Prodanovic, M., **Javadpour, Farzam**, 2013, Multiscale, multiphysics networks modeling of shale matrix gas flow: ***Transport in Porous Media***, v. 99, p. 377-390.

16. Tavassoli, S., Yu, W., **Javadpour, Farzam**, Sepehrnoori, K., 2013, Well screen and optimal time of refracturing: A Barnett shale well, ***Journal of Petroleum Engineering***, Article ID 817293 (10 pages), http://dx.doi.org/10.1155/2013/817293

15. Darabi, H., Ettehad, A., **Javadpour, Farzam**, Sepehrnoori, K., 2012, Gas flow in ultra-tight shale strata: ***Journal of Fluid Mechanics***, v. 710, p. 641-658.

14. Hosseini, S. A., Mathias, S. A., and **Javadpour, Farzam**, 2012, Analytical model for CO2 injection into brine aquifers containing residual CH4: ***Transport in Porous Media***, v. 94, p. 795–815.

13. Shabro, V., Torres-Verdin, C., **Javadpour, Farzam**, and Sepehrnoori, K., 2012, Finite-difference approximation for fluid-flow simulation and calculation of permeability in porous media: ***Transport in Porous Media*****,** v. 93, 775–793.

12. Javadpour, Farzam, Moravvej, M., Amrein, M., 2012, Atomic force microscopy (AFM) a new tool for gas shale characterization. ***SPE-Journal of Canadian Petroleum Technology***. v. 51, no. 4, p. 236–243.

11. Javadpour, Farzam, Amrein, M., Jeje, A., 2012, Multiscale experimental study of selective blood-cell filtration in fibrous porous media, ***Transport in Porous Media***, v. 91, p. 913–926. DOI: 10.1007/s11242-011-9880-0

10. Javadpour, Farzam, Jeje, A., 2012, Modeling filtration of platelet-rich plasma in fibrous filters, ***Transport in Porous Media***, v. 91, p. 677–696.

9. **Javadpour, Farzam**, Nicot, J.P., 2011, Enhanced CO_2 storage and sequestration in deep saline aquifers by nanoparticles: Commingled disposal of depleted uranium and CO_2. ***Transport in Porous Media*****,** v. 89: p. 265–284.

8. **Javadpour, Farzam**, 2009, CO_2 injection in geological formations: determining macroscale coefficients from pore scale processes: ***Transport in Porous Media***, v. 79, p. 87–105.
7. **Javadpour, Farzam**, 2009, Nanopores and apparent permeability of gas flow in mudrocks (shales and siltstone): ***SPE-Journal of Canadian Petroleum Technology***, v. 48, no. 8, p. 16–21. [Distinguished Author Series]
6. **Javadpour, Farzam**, Fisher, D., 2008, Nanotechnology-based micromodels and new image analysis to study transport in porous media: ***SPE-Journal of Canadian Petroleum Technology***, v. 47, no. 2, p. 30–37. [Selected as the best paper published in JCPT in 2008]. DOI: 10.2118/08-02-30
5. **Javadpour, Farzam**, Fisher, D., and Unsworth, M., 2007, Nano-scale gas flow in shale sediments: ***SPE-Journal of Canadian Petroleum Technology***, v. 46, no. 10, p. 55–61.
4. **Javadpour, Farzam**, 2007, Bubble break-up in porous media: ***SPE-Journal of Canadian Petroleum Technology***, v. 46, no. 8, p. 26–33. DOI: 10.2118/07-08-01
3. **Javadpour, Farzam**, Pooladi-Darvish, M., 2004, Network modeling of the gas apparent relative permeability in heavy oil: ***SPE-Journal of Canadian Petroleum Technology***, v. 43, no. 4, p. 23–30.
2. **Javadpour, Farzam**, Pooladi-Darvish, M., Jeje, A., and Shen, L., 2003, Effect of transient temperature on MWD resistivity logs: ***Petrophysics***, v. 44, no. 6, p. 435–445.
1. Jamialahmadi, M., and **Javadpour, Farzam**, 2000, Relationship of permeability, porosity, and depth using an artificial neural network: ***Journal of Petroleum Science and Engineering***, v. 26, p. 235–239.

PUBLICATIONS (submitted)

4. Tao Zhang, **Farzam Javadpour**, Ying Yin, Xiangfang Li, Upscaling Water Flow in Composite Nanoporous Shale Matrix Using Lattice Boltzmann Method. ***Water Resources Research***. Submitted.
3. Tao Zhang, **Farzam Javadpour**, Xiangfang Li, Keliu Wu, Zheng Sun, Jing Li, Ying Yin, Dong Feng, Juntai Shi, Bridging the gap between molecular- and macro-scale water flow in nanotubes. ***Journal of Physical Chemistry C***. Submitted.
2. Pejman Tahmasebi, **Farzam Javadpour**, Lucy T. Ko, 2018. Using Digital Techniques to Define Three-Dimensional and Anisotropic Permeability in the Eagle Ford. ***AAPG Bulletin***. Submitted..
1. Sen Wang, Qihong Feng, **Farzam Javadpour**, Ming Zha, and Ronghao Cui, 2018, Multiscale Modeling of Shale Apparent Permeability: An Integrated Study of Molecular Dynamics and Pore Network Model. ***SPE Journal***. Submitted.

SPE CONFERENCE PROCEEDINGS

20. Wang, S., Feng, Q., **Javadpour, F.,** Zha, M., Cui, R. Multiscale modeling of shale apparent permeability: An integrated study of molecular dynamics and pore network model. SPE Annual Technical Conference and Exhibition, 2017, San Antonio, TX, US.

19. Naraghi, M. E., **Javadpour, F.** Langmuir Slip-Langmuir Sorption Stochastic Permeability Model of Shale, SPE Unconventional Resources Technology Conference 2016, San Antonio, TX, US.

18. Javadpour, F., Moghanlo, R.G., Contribution of methane molecular diffusion in kerogen to gas-in-place and production, SPE Western Regional & AAPG Pacific Section Meeting 2013 Joint Technical Conference.

17. Tavassoli, S., Yu, W., **Javadpour, F.**, Sepehrnoori, K., Selection of candidate horizontal wells and determination of the optimal time of refracturing in Barnett shale (Johnson County), SPE 167137, SPE Unconventional Resources Conference- Calgary, Alberta, Canada, 5-7 November 2013.

16. Appiah, F., **Javadpour, F**., Ghanbarnezhad, R., Apparent liquid permeability in shale, URTeC 1613474, Unconventional Resources Technology Conference, Denver, Colorado, USA, 12-14 August 2013.

15. Hosseini, S.M., **Javadpour, F.,** Tarrahi, M., Geomechanical considerations in seismicity based reservoir characterization, SPE 13URC-P-275-SPE, The Unconventional Resources Conference, The Woodlands, Texas, USA, 10-12 April 2013.

14. Swami, V., Settari, A., **Javadpour, F.,** A numerical model for multi-mechanism flow in shale gas reservoirs with application to laboratory scale testing, SPE-164840-MS, 2013 SPE EUROPEC in London, UK, 10-13 June 2013.

13. Azom, P., **Javadpour, F.,** Dual-continuum modeling of shale and tight gas reservoirs, SPE Annual Technical Conference and Exhibition, San Antonio, TX, USA, 8-10 October 2012.

12. Singh, H., Hosseini, S.A., **Javadpour, F.,** Enhanced CO_2 Storage in Deep Saline Aquifers by Nanoparticles: Implications for Improved Sweep Efficiency, SPE International Oilfield Nanotechnology Conference and Exhibition, Noordwijk, The Netherlands, 12-14 June 2012.

11. Shabro, V., Torres-Verdín, C., **Javadpour, F.,** Pore-scale modeling of slip flow, Knudsen diffusion, and Langmuir desorption to estimate apparent permeability in shale-gas formations, 52nd Society of Petrophysicists and Well Log Analysts Conference, Colorado Springs, CO. [won the best student poster award at 52nd SPWLA], 2011.

10. Shabro, V., Torres-Verdín, C., **Javadpour, F.,** Pore-scale modeling of apparent permeability and resistivity of hydrocarbon-bearing shale in the presence of desorption", 52nd Society of Petrophysicists and Well Log Analysts Conference, Colorado Springs, CO., 2011.

9. Shabro, V., Torres-Verdín, C., **Javadpour, F**., Numerical simulation of shale-gas production: from pore-scale modeling of slip-flow, Knudsen diffusion, and Langmuir desorption to reservoir modeling of compressible fluid, Society of Petroleum Engineers North American Unconventional Gas Conference and Exhibition, The Woodlands, TX, 2011.

8. **Javadpour, F.,** Jeje, A., Modeling transport, adhesion, and detachment of microparticles in microfluidic models representing porous media; Institute for Environment, Engineering, Economic and Applied Mathematics conference, Tenerife, Spain, 2010.

7. **Javadpour, F.,** Amrein, M., Jeje, A., Transport of a suspension of oblate spheroidal and spherical microparticles in micromodels representing porous media; Microfluidic conference, Toulouse, France, 2010.

6. Shabro, V., **Javadpour, F.,** Torres-Verdin, C., A generalized finite difference diffusive-advective (FDDA) model for gas flow in micro- and nano-porous media: World Journal of Engineering, v. 6, no. 3, p. 7–15, 2010.

5. **Javadpour, F.,** Jamialahmadi, M., and Shadizadeh, S. R., Comparative investigation of formation volume factor correlations of oil and gas mixtures, *in* Petroleum Society's 49th Annual Technical Meeting, Calgary, Alberta, Canada, June 8–10, 1998.

4. **Javadpour, F.,** Jamialahmadi, M., and Shadizadeh, S. R., Investigation of hydrocarbon miscible gas injection by experimental and modeling approaches for light oil reservoirs, *in* India Oil & Gas Conference & Exhibition, New Delhi, Paper SPE 39552, 1998.
3. **Javadpour, F.,** Jamialahmadi, M., and Shadizadeh, S. R., Determination of optimum miscible gas injection for light oil reservoirs, *in* 7th Saskatchewan Petroleum Conference, Regina, Saskatchewan, Canada, October 1997.
2. Shadizadeh, S. R., Menzie, D., Knox, K., and **Javadpour, F.,** Flow characterization of miscible displacement processes, *in* 7th Saskatchewan Petroleum Conference, Regina, Saskatchewan, Canada, October 1997.
1. Shadizadeh, S. R., and **Javadpour, F.,** Environmental assessment of underground storage tanks in Iran, *in* 7th Saskatchewan Petroleum Conference, Regina, Saskatchewan, Canada, October 1997.

INVITED TALKS

33. ***CNOOC Reservoir Engineering Headquarter***, Geological modeling and field development, Beijing, China, Aug. 21, 2019
32. ***CNOOC Resarch Laboratory,*** Shale permeability measurements and analysis, Beijing, China, Aug. 21, 2019.
31. ***Daqing Oilfield Production Research Institute***, Fluid flow in shale systems, Daqing, China, Aug. 19, 2019.
30. ***International Seminar on EOR 2019***, EOR in low permeability-tight oil reservoirs, Daqing, China, Aug. 18, 2019
29. ***China University of Petroleum (East China)***, Single-Phase Liquid and Two-phase Flow in Tight Reservoirs, Qingdao, China, July 6, 2019.
28. ***China University of Petroleum (East China)***, Multiscale Gas Flow in Shale Gas Reservoirs, Qingdao, China, July 4, 2019.
27. ***China University of Petroleum (East China)***, Digital Realization of Shale Samples, Qingdao, China, July 2, 2019.
26. ***Hildebrand Department of Petroleum and Geosystems Engineering, University of Texas at Austin***. Relating Rock and Fluid Attributes to Fluid Flow and Production in Shale, Austin, TX, USA, April 8, 2019.
25. ***Gordon Research Conference***. Flow and Transport in Nanoscale Porous Media, Newry, ME, USA, July 8 - 13, 2018
24. ***Houston Geological Society.*** A Multiscale Study of Fluid Flow in Mudrock Systems, Houston, TX, USA, March 6, 2018
23. ***Statoil,*** Integrated multiscale fluid flow in shale reservoirs, Austin, TX, USA, October 4, 2016.
22. ***Statoil,*** Reserve estimation and fluid flow in shale systems, Austin, TX, USA, April 27, 2016.
21. ***Sam Houston State University, Department of Physics,*** Nanophysical aspects of geological formations, Huntsville, TX, USA, Jan. 28, 2016

20. ***American Association of Petroleum Geologists (AAPG)*****,** Gas and liquid flow in shale, Austin, TX, USA, Nov. 3-4, 2015.
19. ***United States Geological Survey (USGS)*****,** Nanophysical Aspects of Hydrocarbon Reservoirs. Denver, CO, USA, Aug. 21, 2015.
18. ***Husky Energy*****,** Reserve Estimation and Fluid Flow in Shale Reservoirs. Calgary, AB, Canada, Aug. 13, 2015.
17. ***BP America*****,** Interaction of polymer coated nanoaprticle and an brine-oil interface. Houston, TX, USA, Nov. 19, 2014
16. ***Schlumberger Doll Research Center*****:** Interaction of polymer coated nanoparticles and minerals at high ionic strength medium, Cambridge, Massachusetts, USA, June 4, 2014
15. ***The University of Texas at Austin*****,** Department of Petroleum and Geosystem Engineering, Reserve Estimation and Fluid Flow in Shale Gas System, Austin, TX, USA, Full-day seminar, Jan. 27, 2014
14. ***Desert Research Institute***, Advances and challenges of shale gas production, Las Vegas, Nevada, USA, Dec. 18, 2013
13. ***Shell International Inc.*****:** Deposition of nanoparticles on mineral grains, Houston, TX, Nov. 20, 2013
12. ***Massachusetts Institute of Technology (MIT****):* Department of Civil Engineering, Nanoscience in Geosciences, May 31, 2013
11. ***Schlumberger Doll Research Center*****:** Nanoparticle interaction with fluid interfaces in porous media, Cambridge, Massachusetts, May 29, 2013
10. ***Halliburton Research Center*****:** Nanoparticle retention at the water-oil interfaces, Houston, TX, Nov. 20, 2012
9. ***ConocoPhillips:*** Modeling gas evolution in shale canisters, Houston, TX, September 2012
8. ***Schlumberger Doll Research Center*****:** AFM metrology for the transport at nanoscale, Cambridge, Massachusetts, May 2012
7. ***Jackson School of Geosciences*****:** Application of atomic force microscopy (AFM) in reservoir characterization, The University of Texas at Austin, Austin, Texas, September, 2011
6. ***ConocoPhillips:*** Gas-in-place and lost gas in shales, Houston, TX, October 2011
5. ***Schlumberger Doll Research Center***, Micromodels studies of transport at nanoscale, Cambridge, Massachusetts, June 2011
4. ***Shell International Inc.*****:** Nanoscale to macroscale modeling of transport in porous media (particle suspension), Houston, Texas, October 14, 2010
3. ***Schlumberger Doll Research Center***, Mathematical modeling of transport at nanoscale, Cambridge, Massachusetts, June 2010
2. ***ConocoPhillips***: Unconventional gas transport in shale gas, Houston, Texas, March 31, 2010
1. ***Exxon-Mobil****:* Transport processes in shale gas media; Upstream Research Company, Houston, Texas, December 11, 2008

SELECTED CONFERENCE PRESENTATIONS

33. *Integrated Multiscale Research of Fluid Flow in Shale: Molecular-to-Core Scales*, AAPG-2018, Salt Lake City, UT, USA, May 21-23, 2018
32. *Integrated multiscale modeling of fluid flow in shale: molecular-to-core scales*, Berkeley University, CA, USA, Aug. 2, 2016
31. *Viscoelasticity of multiphase fluids: future directions*, EGU2016, Vienna, Austria, 17-22 April 2016.
30. *Langmuir Slip-Langmuir Sorption Stochastic Permeability Model of Shale*, 2016 Unconventional Resources Technology Conference (URTeC) in San Antonio, Texas, 1- 3 August 2016.
29. *Modeling of coupled surface and diffusion forces for the transport and retention of nanoparticles in porous media*, The 2015 AMMCS-CAIMS Congress, Waterloo, Ontario,Canada, June 7-12, 2015.
28. *Chromatographic separation of produced gas in shale gas reservoirs*, The 6th Multidimensional Chromatography Workshop, Toronto, Canada, January 6-7, 2015
27. *AFM metrology to determine nanoparticle adsorption rate coefficient*, 6th International Conference on Porous Media & Annual Meeting of the International Society for Porous Media, Milwaukee, Wisconsin, USA, May 27-30, 2014
26. *Lost gas in shale gas: new methods*, Hosseini, S., Javadpour, F., Gerald, M.E., 5th International Conference on Porous Media & Annual Meeting of the International Society for Porous Media, Prague, Czech Republic, May 21-24, 2013
25. *Dual-continuum modeling of shale and tight gas reservoirs*, Azom, P., Javadpour, F., SPE Annual Technical Conference and Exhibition, San Antonio, TX, USA, 8-10 October 2012 (presented by P. Azom)
24. *Numerical simulation of shale-gas production: from pore-scale modeling of slip-flow, Knudsen diffusion, and Langmuir desorption to reservoir modeling of compressible fluid*, Shabro, V., Torres-Verdin, C., Javadpour, F., SPE 2011 Americas Unconventional Gas Conference, June 14-16, 2011 (presented by V. Shabro)
23. *Pore-scale modeling of slip flow, Knudsen diffusion, and Langmuir desorption to estimate apparent permeability in shale-gas formations*, Shabro, V., Torres-Verdin, C., Javadpour, F., 52nd SPWLA, May 15-18, 2011 (presented by V. Shabro)
22. *Uncovering nanoscale issues in shale gas systems*, Moravvej, M., Javadpour, F., 45th Geological Society of America (GSA) Annual Meeting, New Orleans, Louisiana, USA, March 27-29, 2011 (presented by M. Moravvej)
21. *Transport of a suspension of oblate spheroidal and spherical microparticles in micromodels representing porous media*; Microfluidic conference, Toulouse, France, Dec. 8-10, 2010.
20. *Modeling transport, adhesion, and detachment of microparticles in microfluidic models representing porous media*; Institute for Environment, Engineering, Economic and Applied Mathematics conference, Tenerife, Spain, Nov. 30- Dec. 2, 2010
19. *Atomic Force Microscopy (AFM) of shale rock thin section samples*; Mudrock Systems Research Laboratory (MSRL) consortium, Bureau of Economic Geology, Austin, Texas, June 15, 2010
18. *Nano- and micro-particle transport in porous media II: modeling*; Advanced Energy Consortium (AEC) Workshop, Houston, Texas, March 30, 2010

17. *Nano- and micro-particle transport in porous media I: experiment*; Advanced Energy Consortium (AEC) Workshop, Houston, Texas, March 29, 2010
16. *Apparent permeability in mudrock systems*; Mudrock Systems Research Laboratory (MSRL) consortium, Bureau of Economic Geology, Austin, Texas, January 12, 2010
15. *Modeling of coupled surface & drag forces for the transport & retention of microparticles in porous media*; Multiphysics Conference, Lille, France, December 9–11, 2009
14. *Dispersion of passive and self-propelled micro- and nanoparticles in porous media saturated with single and multiphase fluids*; Advanced Energy Consortium (AEC) mid-year meeting, J. J. Pickle Research Facilities, Austin, Texas, September 2–3, 2009
13. *Diffusive advective gas flow modeling in random nanoporous systems (RNPS) at different Knudsen regimes*; 17th International Conference on Composites or Nano Engineering, Honolulu, Hawaii, July 2009 (presented by V. Shabro)
12. *Modeling gas flow through nanopores of mudrocks*: 2009 AAPG/SEPM Annual Meeting, Denver, Colorado, June 7–10 2009
11. *Mathematical modeling of particles dispersion in porous media*; Nanotech Conference and Expo, Houston, Texas, May 5, 2009
10. *Application of nanotechnology in geosciences (experimental and modeling approaches)*: Department of Geological Sciences, Jackson School of Geosciences, The University of Texas at Austin, Austin, Texas, April 24, 2009
9. *Pore-to-reservoir up-scaling of transport processes: applicable to sand reservoirs, shale systems, and naturally fractured media*; Bureau of Economic Geology Symposium, The University of Texas at Austin, Austin, Texas, February 6, 2009
8. *Sequestration in geological formations: pore-level to reservoir-scale up-scaling*: presented at 7th North American Workshop on Applications of Physics of Porous Media, Puerto Vallarta, Mexico, November 2–6, 2007
7. *Carbon dioxide flooding of depleted oil and gas pools*; Greenhouse Gases Mitigation and Utilization Conference, Kingston, Ontario, July 2007
6. *New generation of micromodels and image analysis for the study of dispersion in porous media*: presented at Canadian International Petroleum Conference, Calgary, Alberta, June 2007
5. *Nanoscale gas flow in shale sediments*: presented at NanoForum Canada 2007, Canada Nanoscience and Nanotechnology Forum, University of Waterloo, Waterloo, Ontario, June 18–20 2007
4. *Dispersion and adhesion of finite-sized particles in fibrous porous beds used as blood filters*: presented at 17th Canadian Symposium on Fluid Dynamics CAIMS-MITACS 2006 Joint Annual Conference, York University, Toronto, Ontario, June 16–20 2006
3. *Experiments on bubble expansion in porous media*: presented at 52nd Canadian Chemical Engineering Conference (CSChE 2002), Vancouver, British Columbia, October 2002
2. *Suspension filtration in porous media*: presented at 52nd Canadian Chemical Engineering Conference (CSChE 2002), Vancouver, British Columbia, October 2002
1. *Network modeling of gas bubble break-up in heavy oil*: 51st Canadian Chemical Engineering Conference (CSChE 2001), Halifax, Nova Scotia, October 13–17, 2001

SUPERVISORY EXPERIENCE (Graduate students, postdocs & research staff)

1. Mr. Vahid Shabro, Member of Ph.D. dissertation advisory committee and member of PhD defense committee, Department of Petroleum and Geosystems Engineering, The University of Texas at Austin, Austin, TX, USA (2009-13) (Dissertation topic: *Pore scale modeling of gas flow in shale gas*). Graduated and currently employed by *BP-America*.
2. Ms. Simin Sajjadiani, Co-supervisor, MSc. student, Department of Chemical and Petroleum Engineering, University of Calgary, Calgary, AB, Canada (2010-13) (Thesis topic: *Study of nanoparticle transport in porous microchips*) Graduated and currently employed by *Exxon-Mobil*, Canada.
3. Mr. Mohammad Moravvej, Supervisor, Full-time researcher in my lab (2010-11) (Research topic: *Shale gas characterization using AFM)*. Currently PhD student at the *University of Chicago*.
4. Dr. Zahra Mohammadi, Supervisor, postdoctoral fellow in my lab (2011-13) (Research topic: *Nanoparticle transport and retention in porous media*). Currently works in oil and gas industry, Houston, USA.
5. Mr. Hamed Darabi, Mentor, PhD candidate, Petroleum and Geosystems Engineering, UT-Austin (2011-2012) (Research topic: *Gas flow in ultra-tight shale*). Currently Analyst, Innovation Group, QRI, Houston, USA
6. Mr. Amin Ettehadtavakkol, Mentor, PhD candidate, Petroleum and Geosystems Engineering, UT-Austin (2011-2012) (Research topic: *Gas flow in ultra-tight shale*). Later became postdoc in my group and currently assistant professor at Texas Tech U., USA
7. Mr. Harpreet Singh (*Recipient of SPE Star Scholarship and fellowship*), Mentor, PhD candidate, Petroleum and Geosystems Engineering, UT-Austin (2011-2012) (Research topic: *Nonempirical permeability model for shale system; Upscaling nanoparticle transport in reservoir*). Later become postdoctoral fellow in my group and currently with Oak Ridge National Laboratories.
8. Mr. S. Mehran Hosseini, Mentor, MSc student, Civil Engineering, UT-Austin (2012-2013) (Research topic: *A seismic based reservoir characterization model*). Currently Ph.D. student at the University of Southern California, USA
9. Mr. Shayan Tavassoli, Mentor, PhD candidate, Petroleum and Geosystems Engineering, UT-Austin (2012-2013) (Research topic: *Selection of wells and optimized time of refracturing*). Currently Postdoctoral fellow at UT-Austin.
10. Mr. Wei Wu, Mentor, Ph.D. student, Petroleum and Geosystems Engineering, UT-Austin (2012-2013) (Research topic: *Simulation of fracture interference in stimulated shale reservoir*)
11. Dr. Amir Hosseini, Supervisor, postdoctoral fellow in my lab (2012-16) (Research topic: *Pore–to-grid upscaling using generalized moment analysis*). Currently Senior Technology Development Engineer at *Infinera*, San Francisco, USA
12. Dr. Rouzbeh Ghanbarnezhad, Supervisor, research fellow in my lab (2012-13) (Research topic: *Numerical analysis of gas diffusion in shale gas systems*). Currently Assistant Professor at the *U of Oklahoma*.
13. Dr. Seyyed A. Hosseini, Supervisor, Research fellow in my lab (2012-14) (Research topic: *Analytical models of gas evolution in shale gas canisters*). Currently Research Scientist at the *UT-Austin*.

14. Mr. Seyed Reza Etminan, Supervisor, visiting Ph.D. student from the University of Calgary, Canada (2012-13) (Research topic: *Development of new experimental technique to measure diffusion in kerogenic material of shales*). Currently Research Scientist at the *Alberta Innovates*, Canada.

15. Mr. Francis Appiah, Supervisor, Visiting MSc. Student from Texas A & M, (2012-13) (Research topic: *Liquid permeability of shale system*). Currently Reservoir Engineer at Chevron Oil Co., USA.

16. Mr. Ayaz Mehmani, Mentor, Ph.D. candidate, Department of Petroleum and Geosystems Engineering, The University of Texas at Austin, Austin, TX, USA (2012-14) (Research topic: *Network modeling of gas flow in shales*)

17. Mr. Amin Forootan, Supervisor, summer student from Texas A & M (summer 2012) (Research topic: *Numerical simulation of fluid flow in porous microchips*).

18. Ms. Mandana Ashouri, Supervisor, MSc student, chemical engineering (UT-Austin), 2012 (Research topic: *Interactive forces between fluid molecules and kerogen in shales*). Currently Technology Analyst at the Office of Technology Commercialization, *UT-Austin*, USA.

19. Mr. Michael Cronin, Mentor, MSc student, Geosciences (UT-Austin), 2011-14 (Thesis topic: *Pulse decay permeability measurement in shale*). Currently work in oil industry.

20. Mr. Vivek Swami, Member of MSc advisory committee, Department of Chemical and Petroleum Engineering, University of Calgary, Canada. 2011-13 (Thesis topic: *Transport in shale gas system*). Currently Reservoir Engineer with *Schlumberger, India*.

21. Mr. Mohsen Rezaveisi, Mentor, PhD candidate, Department of Petroleum and Geosystems Engineering, The University of Texas at Austin, Austin, TX, USA (2013-15) (Research topic: *Gas Chromatographic separation in shale gas reservoirs*). Currently works in oil and gas industry.

22. Mr. Enes Taha Armutlu, Co-supervisor, MSc. Student, Department of Geological Sciences, University of Texas at Austin (Supervisor: Dr. William Fisher). 2013-15. (Thesis topic: *Petrophysical analysis of SEM images of shale samples for on-site log calibration*). Currently Geophysicist at Turkish Oil Co., Turkey.

23. Mr. Prateek Kathel, Member of PhD advisory committee, Department of Petroleum and Geosystems Engineering, The University of Texas at Austin, Austin, TX, USA (2014-15) (Dissertation topic: *Experiments and modeling of wettability alteration in fractured reservoirs*)

24. Mr. Sen Wang, Supervisor, visiting PhD student from China University of Petroleum. 2014-15. (Research topic: *Molecular dynamic modeling of liquid flow in shale system*). Currently assistant professor at East China Petroleum University.

25. Mr. Mohammad Labani, PhD thesis examiner, Curtin University, Australia 2014. (Thesis title*: An investigation into the interrelationship between petrophysical properties of potential gas shale reservoirs from Western Australia*)

26. Mr. Morteza Elahi Naraghi (*Recipient of SPE Star Scholarship and fellowship*), Mentor, Ph.D. candidate, Department of Petroleum and Geosystems Engineering, The University of Texas at Austin, Austin, TX, USA (2013-16) (Research topic: *Stochastic permeability model of shale gas system*)

27. Dr. Pejman Tahmasebi, Supervisor, Reservoir Engineer/Scientist in my group. 2014-16 (Research topic: *3D stochastic characterization of 2D SEM images of shale samples*). Currently assistant professor at University of Wyoming.

28. Dr. Ali Afsharpour, Supervisor, Postdoctoral fellow in my group. 2014-17 (Research topic: *Pore scale flow modeling of tight formations*)

29. Dr. Amande Zhu, Supervisor, Postdoctoral fellow in my group. 2016-17 (Research topic: *Statistical analysis of pores and organic patches of shale SEM images*).

30. Mr. Han Jiang, Member of PhD advisory committee, Department of Petroleum and Geosystems Engineering, The University of Texas at Austin, Austin, TX, USA (2016-19) (Dissertation topic: *Shale characterization by different methods; nitrogen sorption, MICP, NMR*)

31. Mr. Mehran Mehrabi, Mentor, Ph.D. student, Department of Petroleum and Geosystems Engineering, The University of Texas at Austin, Austin, TX, USA (2013-16) (Research topic: *Mathematical modeling of gas diffusion in organic matrix of shale*)

32. Mr. Ali Abouie, Mentor, Ph.D. student, Department of Petroleum and Geosystems Engineering, The University of Texas at Austin, Austin, TX, USA (2013-16) (Research topic: *Numerical analysis of pore size changes during pressurization in MICP tests of shale samples*)

33. Ms. Katherine Ogies, Supervisor, Research fellow in my group, 2016 (Research topic: *Slip length measurements by an atomic force microscope-AFM*)

34. Dr. Behzad Ghanbarian, Supervisor, Postdoctoral fellow in my group. 2016-17 (Research topic: *Upscaling shale permeability*). Currently assistant professor at Kansas State University.

35. Dr. Morteza Elahi Naraghi, Supervisor, Postdoctoral fellow in my group (pending approval). 2017- (Research topic: *Stochastic permeability model with geomechanical effects*)

36. Mr. Rui Xu, Member of Ph.D. advisory committee, Department of Petroleum and Geosystems Engineering, The University of Texas at Austin, Austin, TX, USA (2017-21) (Dissertation topic: Lattice Boltzmann modeling of gas transport in shale)

37. Mr. Ernest Sheng, visiting Ph.D. student. Supervisor, China University of Petroleum (East China). 2017-18.

38. Mr. Tao Zhang, visiting Ph.D. student. Supervisor, China University of Petroleum (Beijing). 2018-19.

SYNERGISTIC ACTIVITIES

- Research Proposal Reviewer, NERC Science of Environment, UK, 2017.
- Research Proposal Reviewer, National Centre of Science and Technology Evaluation, Ministry of Education and Science, Republic of Kazakhstan, 2017.
- Research Proposal Reviewer, Mitacs, Canada, 2017
- Chair, Petroleum Hydrodynamics, BIFD-2017, Seventh International Symposium: Bifurcation and Instabilities in Fluid Dynamics, July 11-14, 2017, The Woodlands, TX, USA
- Research Proposal Reviewer, Department of Energy-Basic Energy Science (DOE-BES), 2017
- *Chair*, 2017 AAPG short courses, Houston, TX, 2017
- *Special session chair,* Petroleum Hydrodynamics—Bifurcation and Instabilities in Fluid Mechanics, The Woodlands, TX, 2017
- *Research Proposal Reviewer*, Swiss National Science Foundation (SNF), Switzerland, 2015-present

- *Chair*, Equipment committee, Jackson School of Geosciences, (The committee includes six professor and scientist members with $750K annual budget), 2013-15
- *Research Proposal Reviewer*, National Science Center, Poland, 2014-present
- *Member of Equipment committee*, Jackson School of Geosciences, UT-Austin, 2011-13
- *Reviewed* 37 postdoctoral applications for the JSG postdoc fellowship, April 2013
- *Research Proposal Reviewer*, Discovery Grant, National Science and Engineering Research Council of Canada (NSERC), 2012-present
- *Chair*, Advances on Unconventional Gas Resources Session, SPE-CSUG_Canadian Unconventional Resources conference, Calgary, AB, Canada, November 15-17, 2011
- *Associate Editor*, SPE-Journal of Canadian Petroleum Technology, 2010- present
- *Chair*, Theme Session: Nanogeosciences in Mudrocks and Shale Gas Strata, Geological Society of America Annual meeting, New Orleans, March 28–29, 2011
- *Research Proposal Reviewer*, Grant proposal for shale gas and microfluidic topics; ACS Petroleum Research Fund, 2010-present
- *Organizer*, Peer-reviewed paper writing workshop, Bureau of Economic Geology, UT-Austin, March 11, 2011
- *Co-chair*, Pore Network and Fluid Flow in Mudrocks/shale gas, 2009 Annual American Association of Petroleum Geologists (AAPG) Convention, Denver, Colorado, 2009
- *Interviewed* three faculty applicants for the Department of Geological Sciences, UT-Austin, 2009
- *Interviewed* 14 researchers and 18 postdoctoral applicants for the Bureau of Economic Geology, UT-Austin, 2009-2015
- *Reviewed* 45 postdoctoral application for the JSG postdoc fellowship, 2011
- *Issue coordinator*, SPE-Journal of Canadian Petroleum Technology, 2006-13
- *Coordinator*, International Graduate Student Paper Competition, CSChE 2005 Conference, Calgary, Alberta, Canada, 2005
- *Co-chair*, Reservoir Simulation Session, Canadian International Petroleum Conference, 2004-05
- *Scientific Secretary*, World Petroleum Conference, Calgary, Alberta, Canada, 2000

TECHNICAL REVIEWER FOR 37 SCIENTIFIC JOURNALS

- Nanoscale Research Letters, 2017
- Journal of Green House Gas Control, 2016–present
- Journal of Natural Gas and Engineering, 2016–present
- American Geophysical Union-Book, 2016–present
- Journal of Marine and Petroleum Geology, 2015–present
- Water Resources Research, 2015–present

- Advances in Water Resources, 2016–present
- Scientific Reports (Nature), 2015–present
- PLOS ONE, 2015–present
- Mathematical Geosciences, 2015–present
- Microfluidics and Nanofluidics, 2015–present
- International Journal of Heat and Mass Transfer, 2015–present
- ASME-Journal of Energy Resources Technology, 2014–present
- Advances in Colloid and Interface Science, 2014–present
- Journal of Rock Mechanics and Geotechnical Engineering, 2014–present
- Interpretation, 2014–present
- Geophysical Research Letters, 2014–present
- Applied Clay Science, 2014–present
- Geophysical Journal International, 2014–present
- AIChE Journal, 2014–present
- Journal of Petroleum Science and Engineering, 2012–present
- Geophysics, Society of Exploration Geophysics (SEG), 2012–present
- AAPG Bulletin, 2012–present
- Journal of Applied Geophysics, 2012–present
- Journal of Energy & Fuels, 2012–present
- SPE Reservoir Evaluation & Engineering-Reservoir Engineering, 2012–present
- Environmental Science & Technology, 2012–present
- Energy & Environment journal, 2012–present
- Neural Computing and Applications (NCA), 2012–present
- Fuel, Elsevier, 2011–present
- Canadian Energy Technology & Innovation (CETI) journal, 2011–present
- SPE Formation Evaluation, 2010
- SPE Journal, 2010–present
- SPE Drilling & Completion, 2010–present
- Transport in Porous Media, Springer, 2010–present
- Journal of Colloid and Interface Science, Elsevier, 2009–present
- SPE-Journal of Canadian Petroleum Technology, 2006–2015

ATTENDED WORKSHOPS AND TRAININGS

- *Modern Well Test Analysis*, Stanford U., Palo Alto, CA, August 18-20, 2014

- *Understanding Well Performance and Optimizing Completions in the Bakken*, San Diego, CA, USA, December 10-12, 2013
- *Shale PVT and sampling*, SPE, Houston, TX, USA, Nov. 4, 2012
- *Shale oil and tight oil fundamentals*, SPE, San Antonio, TX, USA, Oct. 7, 2012
- *Eagle Ford shale*, SPE Applied Technology workshop, Austin, TX, USA, 2011
- *Business writing, Continuing & Innovation Education*, The University of Texas at Austin, Nov. 18, 2010
- *Clear & confident speech*, Continuing & Innovation Education, The University of Texas at Austin, November 16, 2010
- *Organic facies, maturity & 3D modeling in unconventional*, American Association of Petroleum Geologists (AAPG), Houston, TX, October 7-8, 2010
- *Log analysis of shaly sands*, American Association of Petroleum Geologists (AAPG), Houston, TX, October 6, 2010
- *Reservoir characterization & production properties of gas shales*, American Association of Petroleum Geologists (AAPG), Houston, TX, October 4-5, 2010
- *Basics for completions, stimulations and production operations in gas shales*, Society of Petroleum Engineers (SPE), Houston, TX, May 11-12, 2010
- *Project management*, Alberta Research Council, Calgary, Canada, five-day workshop, 2007
- *Hydraulic fracturing*, Schlumberger, Calgary, Canada, May 7-8, 2007

MEMBERSHIP IN PROFESSSIONAL SOCIETIES

- Society of Petroleum Engineers (SPE)
- American Institute of Chemical Engineers (AIChE)
- American Association of Petroleum Geologists (AAPG)
- American Geophysical Union (AGU)
- Adhesion Society
- Canadian Institute of Mining and Metallurgy (CIM)
- International Society for Porous Media (InterPore)
- Society of Core Analysts (SCA)

HOBBIES

Playing tennis and soccer, hiking, avid reader of National Geographic magazine, watching movies and news.