
Mehdi Ostadhassan, PhD
Distinguished Professor, 1000 talent Program
Department of Earth Sciences
Ministry of Education
Northeast Petroleum University, Daqing, China

Chief Operating Officer
NDquared (ND²)

Adjunct Associate Professor
Department of Biomedical Sciences
Department of Biomedical Engineering
School of Medicine and Health Sciences
University of North Dakota

mehdi.ostadhassan@gmail.com
mostadhassan@nodakdiagnostics.com
ORCID ID: <https://orcid.org/0000-0001-9235-4399>
h-index: 17

Innovation Center
4200 James Ray Dr.
Grand Forks, ND 58202

Tel: 701-610-9999
2100 36 Ave S- APT 307
Grand Forks, ND 58201

1. Educational Background:

<i>Institute</i>	<i>Major</i>	<i>Degree</i>	<i>Year</i>
Petroleum University of Technology, Iran	Petroleum Engineering	B.S.	2005
Petroleum University of Technology, Iran	Petroleum Engineering	M.S.	2007
IFP-School (ENSPM), France	Petroleum Geophysics	M.S.	2008
University of North Dakota, US	Petroleum Engineering	Ph.D.	2013

2. Professional Experience:

<i>Institute</i>	<i>Position</i>	<i>Duration</i>
Northeast Petroleum University, Daqing, China	Distinguished Prof.	2019-current
University of North Dakota, Grand Forks, USA	Associate Prof.,	2013-2019
Energy & Environment Research Center, Grand Forks, USA	Research Scientist	2012-2013
University of North Dakota	Graduate Research Assistant	2009-2013
Schlumberger DCS, Denver, CO	Geophysics intern	Summer 2011
Atlantic Int. Operation Ltd, Dubai, UAE	Upstream division, Project Manager	2008-2009
CGGVeritas, Massy, France	Geophysics Intern	Winter 2008
Khak Azma Geomechanics Lab, Tehran, Iran	Entry level engineer	2005-2006
National Iranian South Oil Company, Ahwaz, Iran	Petroleum Engineering Intern	Summer 2003
National Iranian Oil Company Exploration Directorate, Tehran, Iran	Geophysics Intern	Summer 2004

3. Media appearance

Silver, A. "Five innovative ways to use 3D printing in the laboratory." *Nature* 565, no. 7737 (2019): 123.

4. Publications (* shows graduate students and post-docs):

I. Book & Book Chapter (refereed):

Ostadhassan M, Liu K*, Li C*, Khatibi S*. *Fine Scale Characterization of Shale Reservoirs: Methods and Challenges*. Springer; 2018.

Ostadhassan M. *Geomechanics and Elastic Anisotropy of Shale Formations*. *New Frontiers in Oil and Gas Exploration*: Springer, Cham; 2016. p. 165-207.

II. Journal Publications (refereed):

- Liu G, Zou C, Zhu R, Lei G, **Ostadhassan M**, Mao Z, The effectiveness of natural fractures and their contribution to reservoirs in deep tight sandstones in the Kuqa Depression, Tarim Foreland Basin, China. *Marine and Petroleum Geology* (Under Review)

2. Khatibi S*, Guedes A, Valentim B, Abarghani A*, Bubach B, Liu B, **Ostadhassan M**, Backtracking to Parent Maceral from Produced Bitumen with Raman Spectroscopy. *Marine and Petroleum Geology* (Under Review)
3. Lee H*, Oncel N, Kukay A, Altincicek F, Liu B, Varma R, Shokouhimehr M, **Ostadhassan M**, Structural Evolution of Organic Matter in Deep Shales by Spectroscopy (1H & 13C-NMR, XPS, and FTIR) Analysis. *Energy & Fuels* (Under Review)
4. Abarghani A*, Gentzis T, Liu B, Hohlbauch S, Griffin G, Bubach B, Shokouhimehr M, **Ostadhassan M**, Bacterial vs. thermal degradation of algal matter: analysis from a physicochemical perspective. *Geoscience Frontiers* (Under Review)
5. Hyeonseok L*, Abarghani A*, Liu B, Shokouhimehr M, **Ostadhassan M**, Mass Spectrometry of Kerogen with MALDI-TOF. *Fuel* (Under Review)
6. Zhao P, Fu J, Shi Y, Li G, **Ostadhassan M**, Mao Z, Hydrocarbon saturation in shale oil reservoirs by inversion of dielectric logs. *Fuel* (Under Review)
7. Asadolahpour S, Saboorian-Jooybari H, Chen Z, **Ostadhassan M**, A New Practical Framework to Enhance Selection of Representative Samples for Special Core Analysis (SCAL). *Journal of Petroleum Science and Engineering* (Under Review)
8. Hang K, Cha JH, Yeon, YS, **Ostadhassan M**, Jang HW, Varma R, Shokouhimehr M, Pd Nanocatalysts on Prussian Blue Frameworks: Multiple Electron Transfer Pathways for Improving Catalytic Activity Toward Hydrogenation of Nitroaromatics in Aqueous Media. *Nano-Micro Letters* (Under Review)
9. Liu K*, Rassouli F, Liu B, **Ostadhassan M**, Creep behavior of shale: nanoindentation vs. triaxial creep tests. *Rock Mechanics and Rock Engineering* (Under Review)
10. Liu K*, **Ostadhassan M**, An intensive comparison in fractal dimensions from gas adsorption data in shale. *Journal of Petroleum Science and Engineering* (Under Review)
11. Liu G, Zeng L, Li H, **Ostadhassan M**, Dong J, Xu X. Natural fractures: the key controlling factor for reservoir quality of metamorphic rock buried hills in the Liaohe Basin, China. *Marine and Petroleum Geology* (Under Review)
12. Abarghani A*, **Ostadhassan M**, Gentzis T, Khatibi S*, Bubach B. The Effect of Thermal Maturity on Redox-Sensitive Trace Metals Concentration in the Bakken Source Rock, North Dakota, USA. *ACS Omega* (Under Review)
13. Liu K*, **Ostadhassan M**, Xu X. A comparison study of the unloading behavior in shale samples in nanoindentation experiments using different models. *Journal of Petroleum Science and Engineering*. 2019 Nov 20:106715.
14. Liu B, **Ostadhassan M**, Liu K*, Abarghani A*, Khatibi S*, Kong L*, Li X, A Comprehensive Study of the Permian Lucaogou Shales in the Santanghu Basin, Northwest China. *Journal of Natural Gas Science and Engineering* (Accepted)
1. Lee H*, **Ostadhassan M**, Liu K*, Bubach B. Developing an Amorphous Organic Material Molecular Model Based on Gas Adsorption Isotherms. *Energy & Fuels* (Under Review)
2. Abarghani A*, **Ostadhassan M**, Hackley P, Pomerantz A, Nejati S. A Chemo-mechanical Snapshot of In-situ Conversion of Kerogen to Petroleum. *Geochimica et Cosmochimica Acta* (Accepted)
3. Kong L*, **Ostadhassan M**, Liu B, Eshraghi M, Li C, Navarro M, Zhang Y, Wei H. A Comparison of 3D Printed Porous Rocks with Nano X-ray Computed Tomography: Silica Sand, Gypsum Powder and Resin. *AAPG Bulletin*. (Accepted)
4. Abarghani A*, Gentzis T, Shokouhimehr M, **Ostadhassan M**. Molecular heterogeneity of organic matter in geomaterials based on AFM nanoIR spectroscopy. *Fuel* (Accepted)
5. Liu K*, **Ostadhassan M**, Hackley P, Gentzis T, Zou J, Yuan Y, Carvajal-Ortiz H, Rezaee R, Bubach B. Experimental study on the impact of thermal maturity on shale microstructures using hydrous pyrolysis. *Energy & Fuels*, 2019 Sep 25.
6. Lee H*, Shakib FA, Shokouhimehr, M, Bubach B, Kong L*. **Ostadhassan M**, Optimal Separation of CO₂/CH₄/Brine with Amorphous Kerogen: A Thermodynamics and Kinetics Study. *Journal of Physical Chemistry C* 2019 Aug 2.
7. Li C, Kong L*, **Ostadhassan M**, Gentzis T. Nanoscale Pore Structure Characterization of Tight Oil Formation: A Case Study of the Bakken Formation. *Energy & Fuels*. 2019 Jul 1.
8. Zhang K, Lee TH, Bubach, **Ostadhassan M**, Jang HW, Choi JW, and Shokouhimehr M. Layered metal-organic framework based on tetracyanonickelate as cathode material for in situ Li-ion storage. *RSC Advances*. 2019;9(37):21363-70.
9. Zhang K, Lee TH, Bubach B, **Ostadhassan M**, Jang HW, Choi JW, Shokouhimehr M, New concept for aluminum-ion batteries: graphite carbon-encapsulated metal nanoparticles derived from in-situ grown Prussian blue analogs on natural loofa as cathode materials. *Scientific Reports*, 2019;9.
10. Mirzaei-Paiaman A, Saboorian-Jooybari H, Chen Z, **Ostadhassan M**. New technique of True Effective Mobility (TEM-Function) in dynamic rock typing: Reduction of uncertainties in relative permeability data for reservoir simulation. *Journal of*

Petroleum Science and Engineering. 2019 Apr 23.

11. Abarghani A*, **Ostadhassan M**, Bubach B, Zhao P. Estimation of thermal maturity in the Bakken source rock from a combination of well logs, North Dakota, USA. *Marine and Petroleum Geology*. 2019 Apr 9.
12. Liu K*, **Ostadhassan M**, Cai J. Characterizing Pore Size Distributions of Shale in Petrophysical Characterization and Fluids Transport in Unconventional Reservoirs 2019 Jan 1 (pp. 3-20). Elsevier.
13. Liu K*, **Ostadhassan M**. Comparison of the different presentations of the pore size distributions of shale rock. *Advances in Geo-Energy Research*. 2019 Jun 25;3(2):187-97.
14. Liu K*, Wang L, **Ostadhassan M**, Zou J, Bubach B, Rezaee R. Nanopore structure comparison between shale oil and shale gas: examples from the Bakken and Longmaxi Formations. *Petroleum Science*. 2019 Feb 1;16(1):77-93.
15. Khatibi S*, **Ostadhassan**, Hackley PC, Tuschel D, Abarghani A*, Bubach B. Understanding Organic Matter Heterogeneity and Maturation Rate by Raman Spectroscopy. *International Journal of Coal Geology*. 2019 Mar 17.
16. Abarghani A*, **Ostadhassan M**, Gentzis T, Carvajal-Ortiz H, Ocubalidet S, Bubach B, Mann M, Hou X. Correlating Rock-Eval Tmax with bitumen reflectance from organic petrology in the Bakken Formation, North Dakota USA. *International Journal of Coal Geology*. 2018 Mar 1;188:79-93.
17. Kong L*, **Ostadhassan M**, Lin R, Li C*. Nanoscale Mechanical Properties of 3D Printed Gypsum-Powder Based Rocks by Nanoindentation and Numerical Modeling. *Rapid Prototyping Journal*. 2019 Aug 12.
18. Liu K*, **Ostadhassan M**, Sun L, Zou J, Yuan Y, Gentzis T, Zhang Y, Carvajal-Ortiz H, Rezaee R. A comprehensive pore structure study of the Bakken Shale with SANS, N₂ adsorption and mercury intrusion. *Fuel*. 2019.01.174
19. Kong L*, **Ostadhassan M**, Hou X, Mann M, Li C*. Microstructure characteristics and fractal analysis of 3D-printed sandstone using micro-CT and SEM-EDS. *Journal of Petroleum Science and Engineering*. 2019 Jan 14.
20. Abarghani A*, **Ostadhassan M**, Bubach B, Zhao P. Estimation of Thermal Maturity in the Bakken Source Rock from a Combination of Well Logs, North Dakota, USA. *Marine and Petroleum Geology* (Accepted)
21. Kong L*, **Ostadhassan M**, Zamiran S, Liu B, Marino G, Li C*. Geomechanical Upscaling Methods: Comparison and Verification via 3D Printing. *Energies*. 2019 Jan;12(3):382.
22. Kong L*, **Ostadhassan M**, Tamimi N, Samani S, Li C. Refracturing: well selection, treatment design, and lessons learned—a review. *Arabian Journal of Geosciences*. 2019 Feb 1;12(4):117.
23. Liu K*, **Ostadhassan M**, Xu X, Bubach B. Abnormal behavior during nanoindentation holding stage: Characterization and explanation. *Journal of Petroleum Science and Engineering*. 2018 Oct 23.
24. Li C*, **Ostadhassan M**, Kong L*, Bubach B. Multi-scale assessment of mechanical properties of organic-rich shales: A coupled nanoindentation, deconvolution analysis and homogenization method. *Journal of Petroleum Science and Engineering*. 2018 Nov 2.
25. Li C*, **Ostadhassan M**, Abarghani A*, Fogden A, Kong L*. Multi-scale evaluation of mechanical properties of the Bakken shale. *Journal of Materials Science*. 2019 Feb 1;54(3):2133-51.
26. Kong L*, **Ostadhassan M**, Li C*, Liu K*, Multifractal characteristics of MIP-based pore size distribution of 3D printed gypsum-powder rocks. *Transport in Porous Media*. 2018:1-20.
27. Khatibi S*, **Ostadhassan M**, Xie ZH, Gentzis T, Bubach B, Gan Z, Carvajal-Ortiz H. NMR relaxometry a new approach to detect geochemical properties of organic matter in tight shales. *Fuel*. 2019 Jan 1;235:167-77.
28. Li C*, **Ostadhassan M**, Guo S, Gentzis T, Kong L*. Application of PeakForce tapping mode of atomic force microscope to characterize nanomechanical properties of organic matter of the Bakken Shale. *Fuel*. 2018 Dec 1;233:894-910.
29. Khatibi S*, **Ostadhassan M**, Aghajanpour A, Kovaleva Y*, Mohammed RA*. Various effect of faults on mechanical earth models: A case study of integrated study. In *Geomechanics and Geodynamics of Rock Masses* 2018 May 24 (pp. 617-621). CRC Press.
30. Khatibi S*, Aghajanpour A, **Ostadhassan M**, Kovaleva Y*. Drilling deviated wells in a highly unstable gas field in southern part of Iran. In *Geomechanics and Geodynamics of Rock Masses-Volume 2* 2018 May 20 (pp. 1387-1393). CRC Press.
31. Li C*, **Ostadhassan M**, Gentzis T, Kong L*, Carvajal-Ortiz H, Bubach B. Nanomechanical characterization of organic matter in the Bakken formation by microscopy-based method. *Marine and Petroleum Geology*. 2018 Sep 1;96:128-38.
32. Kong L*, **Ostadhassan M**, Li C*. Porosity measurement of 3-D printed gypsum rock by means of X-ray computed tomography. In *Geomechanics and Geodynamics of Rock Masses-Volume 2* 2018 May 20 (pp. 1401-1406). CRC Press.
33. Liu K*, **Ostadhassan M**, Zou J, Gentzis T, Rezaee R, Bubach B, Carvajal-Ortiz H. Nanopore structures of isolated kerogen and bulk shale in Bakken Formation. *Fuel*. 2018 Aug 15;226:441-53.

34. Liu K*, **Ostadhassan M**, Bubach B. Application of nanoindentation to characterize creep behavior of oil shales. *Journal of Petroleum Science and Engineering*. 2018 Aug 1;167:729-36.
35. Zamiran S, Rafieepour S, **Ostadhassan M**. A geomechanical study of Bakken Formation considering the anisotropic behavior of shale layers. *Journal of Petroleum Science and Engineering*. 2018;165:567-74.
36. Liu K*Q, **Ostadhassan M**, Zou J, Gentzis T, Rezaee R, Bubach B, Carvajal-Ortiz H. Multifractal analysis of gas adsorption isotherms for pore structure characterization of the Bakken Shale. *Fuel*. 2018;219:296-311.
37. Liu K*, **Ostadhassan M**, Kong L*. Multifractal characteristics of Longmaxi Shale pore structures by N₂ adsorption: A model comparison. *Journal of Petroleum Science and Engineering*. 2018;168:330-41.
38. Liu K*, **Ostadhassan M**, Bubach B, Ling K, Tokhmechi B, Robert D. Statistical grid nanoindentation analysis to estimate macro-mechanical properties of the Bakken Shale. *Journal of Natural Gas Science and Engineering*. 2018;53:181-90.
39. Liu K*, **Ostadhassan M**, Bubach B, Dietrich R, Rasouli V. Nano-dynamic mechanical analysis (nano-DMA) of creep behavior of shales: Bakken case study. *Journal of Materials Science*. 2018;53(6):4417-32.
40. Liu K*, **Ostadhassan M**, Kong L*. Fractal and Multifractal Characteristics of Pore Throats in the Bakken Shale. *Transport in Porous Media*. 2018:1-20.
41. Kong L*, **Ostadhassan M**, Li C*, Tamimi N. Can 3-D Printed Gypsum Samples Replicate Natural Rocks? An Experimental Study. *Rock Mechanics and Rock Engineering*. 2018:1-14.
42. Kong L*, **Ostadhassan M**, Li C*, Tamimi N. Pore characterization of 3D-printed gypsum rocks: a comprehensive approach. *Journal of Materials Science*. 2018;53(7):5063-78.
43. Khatibi S*, **Ostadhassan M**, Tuschel D, Gentzis T, Carvajal-Ortiz H. Evaluating Molecular Evolution of Kerogen by Raman Spectroscopy: Correlation with Optical Microscopy and Rock-Eval Pyrolysis. *Energies*. 2018;11(6):1-19.
44. Khatibi S*, **Ostadhassan M**, Tuschel D, Gentzis T, Bubach B, Carvajal-Ortiz H. Raman spectroscopy to study thermal maturity and elastic modulus of kerogen. *International Journal of Coal Geology*. 2018;185:103-18.
45. Khatibi S*, **Ostadhassan M**, Aghajanpour A. Raman spectroscopy: an analytical tool for evaluating organic matter. *J Oil Gas Petrochem Sci*. 2018;1(1):28-33.
46. Abarghani A*, **Ostadhassan M**, Gentzis T, Carvajal-Ortiz H, Bubach B. Organofacies study of the Bakken source rock in North Dakota, USA, based on organic petrology and geochemistry. *International Journal of Coal Geology*. 2018;188:79-93.
47. Liu K*, **Ostadhassan M**, Zhou J, Gentzis T, Rezaee R. Nanoscale pore structure characterization of the Bakken shale in the USA. *Fuel*. 2017;209:567-78.
48. Liu K*, **Ostadhassan M**, Gentzis T, Carvajal-Ortiz H, Bubach B. Characterization of geochemical properties and microstructures of the Bakken Shale in North Dakota. *International Journal of Coal Geology*. 2017.
49. Liu K*, **Ostadhassan M**. Microstructural and geomechanical analysis of Bakken shale at nanoscale. *Journal of Petroleum science and Engineering*. 2017; 153:133-44.
50. Kovaleva Y*, **Ostadhassan M**, Tamimi N, Kovalev A. A preliminary optimization of borehole microseismic array design with a multiple criteria decision analysis. *Journal of Applied Geophysics*. 2018 Jul 11.
51. Liu K*, **Ostadhassan M**. Multi-scale fractal analysis of pores in shale rocks. *Journal of Applied Geophysics*. 2017; 140:1-10.
52. Liu K*, **Ostadhassan M**. Quantification of the microstructures of Bakken shale reservoirs using multi-fractal and lacunarity analysis. *Journal of Natural Gas Science and Engineering*. 2017; 39:62-71.
53. Liu K*, **Ostadhassan M**, Bubach B. Applications of nano-indentation methods to estimate nanoscale mechanical properties of shale reservoir rocks. *Journal of Natural Gas Science and Engineering*. 2016;35:1310-9.
54. **Ostadhassan M**, Zamiran S, Jabbari H, Osouli A, Bubach B, Oster B. Study analyzes high-density well pads. *The American Oil & Gas Reporter*. Vol. 59, No. 8, pp. 50-53, August, 2016.
55. Mirzaei-Paiaman A, Sabbagh F, **Ostadhassan M**, Shafiei A, Rezaee R, Saboorian-Jooybari H, Chen Z. A further verification of FZI* and PSRTI: Newly developed petrophysical rock typing indices. *Journal of Petroleum Science and Engineering*. 2019 Apr 1;175:693-705.
56. Xu Z, Zhao P, Wang Z, **Ostadhassan M**, Pan Z. Characterization and Consecutive Prediction of Pore Structures in Tight Oil Reservoirs. *Energies*. 2018 Oct 11;11(10):2705.
57. Semnani A, Wang L, **Ostadhassan M**, Nabi-Bidhendi M, Araabi BN. Time-frequency decomposition of seismic signals via quantum swarm evolutionary matching pursuit. *Geophysical Prospecting*.
58. Zhao P, **Ostadhassan M**, Shen B, Wenhui L, Abarghani A*, Liu K*, Luo M, Cai J. Estimating thermal maturity of organic-

rich shale from well logs: Case studies of two shale plays. *Fuel*. 2019 Jan 1;235: 1195-1206.

59. Zhao P, Cai J, Huang Z, **Ostadhassan M**, RAN F. Estimating permeability of shale gas reservoirs from porosity and rock compositions. *Geophysics*. 2018 Jun 7;83(5):1-36.
60. Mirzaei-Paيمان A, **Ostadhassan M**, Rezaee R, Saboorian-Jooybari H, Chen Z. A new approach in petrophysical rock typing. *Journal of Petroleum Science and Engineering*. 2018;166:445-64.
61. Khatibi S*, Aghajanjpour A, **Ostadhassan M**, Farzay O. Evaluating Single-Parameter parabolic failure criterion in wellbore stability analysis. *Journal of Natural Gas Science and Engineering*. 2018;50:166-80.
62. Jabbari H, Afsari K, Rabiei M, Monk A, **Ostadhassan M**. Thermally-induced wettability alteration from hot-water imbibition in naturally fractured reservoirs—Part 2: 2D models, sensitivity study & heavy oil. *Fuel*. 2017;208:692-700.

III. *Selected Conference Papers (refereed)*

1. Kong L*, **Ostadhassan M**, Fereshtenejad S, Song JJ, Li C*. Anisotropy Analysis of 3D Printed Gypsum Rocks Integrating Pulse-Transmission, Nanoindentation and Micro-CT Techniques. In 52nd US Rock Mechanics/Geomechanics Symposium 2018 Aug 21. American Rock Mechanics Association.
2. Khatibi S*, **Ostadhassan M**, Aghajanjpour A. Geomechanical and Geochemical Characterization of Organic Matter by Raman Spectroscopy. 52nd US Rock Mechanics/Geomechanics Symposium 2018 Aug 21. American Rock Mechanics Association.
3. Liu K*, Ostadhassan M, Wang H. Creep Behavior of Shale-Nanoindentation Experiments. In 52nd US Rock Mechanics/Geomechanics Symposium 2018 Aug 21. American Rock Mechanics Association.
4. Li C*, **Ostadhassan M**, Kong L*. Effect of Organic Matter on Nano-Mechanical Properties of Organic-Rich Shale. In 52nd US Rock Mechanics/Geomechanics Symposium 2018 Aug 21. American Rock Mechanics Association.
5. Liu K*, **Ostadhassan M**, Li C*, Alexeyev A*. Fracture Toughness Measurement of Shales Using Nano-Indentation: The Bakken Case Study. 51st US Rock Mechanics/Geomechanics Symposium; 2017: American Rock Mechanics Association.
6. Liu K*, **Ostadhassan M**, Kong L*, Pore structure heterogeneity in Middle Bakken formation. 51st US Rock Mechanics/Geomechanics Symposium; 2017: American Rock Mechanics Association.
7. Li C*, **Ostadhassan M**, Kong L*, editors. Nanochemo-mechanical characterization of organic shale through AFM and EDS. 2017 SEG International Exposition and Annual Meeting; 2017: Society of Exploration Geophysicists.
8. Kovaleva Y*, **Ostadhassan M**, Tamimi N., Optimizing microseismic design using multiple criteria decision analysis. 2017 SEG International Exposition and Annual Meeting; 2017: Society of Exploration Geophysicists.
9. Alexeyev A*, **Ostadhassan M**, Mohammed RA, Bubach B, Khatibi S*, Li C*. Well log based geomechanical and petrophysical analysis of the bakken formation. 51st US Rock Mechanics/Geomechanics Symposium; 2017: American Rock Mechanics Association.
10. Liu K*, **Ostadhassan M**, Bubach B, Jabbari H., Bakken Formation Shales Nano-Scale Analysis Understand Mechanical Parameters. 50th US Rock Mechanics/Geomechanics Symposium; 2016: American Rock Mechanics Association.
11. **Ostadhassan M**, Jabbari H, Zamiran S, Osouli A, Bubach B, Oster B., Probabilistic Time-Dependent Thermo-chemo-poroelastic Borehole Stability Analysis in Shale Formations. 49th US Rock Mechanics/Geomechanics Symposium; 2015: American Rock Mechanics Association.
12. **Ostadhassan M**, Tamimi N., Mechanical Behavior of Salt Rock at Elevated Temperature. 48th US Rock Mechanics/Geomechanics Symposium; 2014: American Rock Mechanics Association.
13. **Ostadhassan M**, Benson S, Zamiran S, Bubach B., Stress analysis and wellbore stability in unconventional reservoirs. 47th US Rock Mechanics/Geomechanics Symposium; 2013: American Rock Mechanics Association.

i. *Selected Conference Papers (non- refereed)*

1. Khatibi S*, Aghajanjpour A, **Ostadhassan M**, Ghanbari E, Amirian E., Evaluating the Impact of Mechanical Properties of Kerogen on Hydraulic Fracturing of Organic Rich Formations. SPE Canada Unconventional Resources Conference; 2018: Society of Petroleum Engineers.
2. Liu K*, **Ostadhassan M**, Li C*. Quantifying the nano-mechanical signature of shale oil formations by nanoindentation 2017: Unconventional Resources Technology Conference (URTEC).
3. Liu K*, **Ostadhassan M**, Gentz T, Carvajal-Ortiz H, Bubach B., Microstructures and Geochemical Characteristics of Bakken Shale Formations 2017: Unconventional Resources Technology Conference (URTEC).

4. Liu K*, **Ostadhassan M**, editors. Quantification of the Microstructure Heterogeneities of Bakken Shale Reservoirs from Multi-Fractal Analysis. SPE Oklahoma City Oil and Gas Symposium; 2017: Society of Petroleum Engineers.
5. Anderson J, Rice J, Said A, Mehrer C, **Ostadhassan M**, Alexeyev A*, Comprehensive Study of the Charlson Oil Field, Williston Basin, ND. SPE Annual Caspian Technical Conference and Exhibition; 2017: Society of Petroleum Engineers.
6. Alexeyev A*, **Ostadhassan M**, Bubach B, Boualam A, Djezzar S., Integrated Reservoir Characterization of the Middle Bakken in the Blue Buttes Field, Williston Basin, North Dakota. SPE Western Regional Meeting; 2017: Society of Petroleum Engineers.
7. Kong L*, **Ostadhassan M**, Sarout J, Ling K, Li C*, Wang H. Impact of Thermal Maturation on Wave Velocity in the Bakken Shale. InSPE Western Regional Meeting 2018 Apr 20. Society of Petroleum Engineers.
8. Liu K*, **Ostadhassan M**, Jabbari H, Bubach B., Potential Application of Atomic Force Microscopy in Characterization of Nano-pore Structures of Bakken Formation. SPE Low Perm Symposium; 2016: Society of Petroleum Engineers.
9. Liu K*, **Ostadhassan M**, Bubach B., Pore Structure Analysis by Using Atomic Force Microscopy 2016: Unconventional Resources Technology Conference (URTEC).
10. **Ostadhassan M**, Zamiran S, Jabbari H, Osouli A, Bubach B, Oster B., Stability analysis of multilateral high density pad wells in the three forks formation. SPE Western Regional Meeting; 2015: Society of Petroleum Engineers.
11. Le T, **Ostadhassan M.**, A Multidisciplinary Study of Stimulation Designs in the Three Forks Formation, ND. Unconventional Resources Technology Conference; 2015: Unconventional Resources Technology Conference.
12. **Ostadhassan M**, Jabbari H, Zamiran S, Osouli A, Oster B, Lentz N., Wellbore Instability of Inclined Wells in Highly Layered Rocks—Bakken Case Study. SPE Eastern Regional Meeting; 2014: Society of Petroleum Engineers.
13. Zamiran S, Salam S, Osouli A, **Ostadhassan M.**, Underground Disposal of Fine Coal Waste. 49th US Rock Mechanics/Geomechanics Symposium; 2015: American Rock Mechanics Association.
14. Jabbari H, **Ostadhassan M**, Salehi S., Geomechanical Modeling in CO₂ Enhanced Oil Recovery. 49th US Rock Mechanics/Geomechanics Symposium; 2015: American Rock Mechanics Association.
15. Zamiran S, Osouli A, **Ostadhassan M.**, Geomechanical modeling of inclined wellbore in anisotropic shale layers of Bakken formation. 48th US Rock Mechanics/Geomechanics Symposium; 2014: American Rock Mechanics Association.
16. Jabbari H, **Ostadhassan M**, Rabeie M., Geomechanics Modeling in CO₂-EOR: Case Study. SPE/CSUR Unconventional Resources Conference; 2015: Society of Petroleum Engineers.
17. Jabbari H, **Ostadhassan M**, Khavanin M, Lentz N, Johnson S., Uncertainty Assessment of Stimulation Design—Bakken Case Study. SPE Eastern Regional Meeting; 2014: Society of Petroleum Engineers.

IV. *Selected Presentations and Abstracts (non-refereed)*

1. Liu K*, **Ostadhassan M**. Characterize the pore microstructures of shale formation by using AFM. In International Geophysical Conference, Qingdao, China, 17-20 April 2017 2017 May 31 (pp. 1064-1066). Society of Exploration Geophysicists and Chinese Petroleum Society.
2. Liu K*, **Ostadhassan M**, Xu X, Multiscale characterization of pore structures of shale: quantification from SEM image analysis. 2016 Workshop: Rock Physics and Borehole Geophysics, Beijing, China, 28-30 August 2016; 2016: Society of Exploration Geophysicists.
3. Kong, L., **Ostadhassan, M.**, Li C*, Petrophysical Characterization of 3-D Printed Rock and its Substitution in the Validation Experiment, in: June 2018: AAPG Annual Convention and Exhibition.
4. Kong L*, **Ostadhassan M**, Tamimi N, Li C*, Alexeyev A*. Laboratory measurements of P- and S-wave anisotropy in synthetic rocks by 3D printing. In AGU Fall Meeting Abstracts 2017 Dec.
5. Kong L*, **Ostadhassan M**, Li C*, Elastic Properties and Size effect of 3-D Printed Rocks, in: American Chemical Society (ACS) 2017 Great Lakes Regional Meeting (GLRM). American Chemical Society
6. Kong L*, Xu Z, **Ostadhassan M**, Li C*. Geomorphology Classification and Architecture Characterization of Braided River Reservoir: A Case Study From Guantao Upper Formation of Gudong Oilfield, Bohai Bay Basin, China., in: April 2017 AAPG Annual Convention and Exhibition.

63. **Patent**

U. S. Pending Patent (provisional): " **Configuration and Method for Condensate Stabilization Process in Gas Processing Facilities**", as of January 2019.

64. Mentorship

I. undergraduate:

- I have advised around 50 undergraduate students since my appointment and have been in charge of Senior Design Course (the capstone course) for the past 3 years, supervised a large number of projects every semester (fall, spring and summer). The outcome has been:
 - *Le T, Ostadhassan M., A Multidisciplinary Study of Stimulation Designs in the Three Forks Formation, ND. Unconventional Resources Technology Conference; 2015: Unconventional Resources Technology Conference.*
 - **2017 Doosan Bobcat Outstanding Senior Process Design Award** "Comprehensive Study of the Charlson Oil Field" by Jordan Anderson, Cody Mehrer, Joseph Rice and Abdulkadir Said which was published as: Anderson J, Rice J, Said A, Mehrer C, Ostadhassan M, Alexeyev A*. *Comprehensive Study of the Charlson Oil Field, Williston Basin, ND. In SPE Annual Caspian Technical Conference and Exhibition 2017 Nov 1. Society of Petroleum Engineers.*

II. graduate:

- The following is the list of committees that I have served on as primary and sole adviser:
 - Kouqi Liu, PhD (Graduated Summer 2018)
 - Rehan Ali Mohammed, MS (Graduated Summer 2018)
 - Cody Brown, MS (Graduated Spring 2018)
 - Alan Alexeyev, MS (Graduated Fall 2017)
 - Ben Oster, MS (Graduated Spring 2016)
 - Lingyun Kong, PhD (Graduated Summer 2019)
 - Seyedalireza Khatibi, PhD (Graduated Summer 2019)
 - Yulia Kovaleva, MS (Fall 2019)
 - Chunxiao Li, former PhD (switched to the geology program)
 - Arash Abarghani, PhD (Fall 2019)
 - Hyeonseok Lee, PhD (Spring 2021)
 - Mousa Abusurra, PhD (Summer 2021)
 - Minh Le, MENG, (Graduated Fall 2018)
 - Cristina Goodrich MENG (Spring 2020)
 - Kyle Pierskalla, MENG (Summer 2019)

III. Post-docs and Researchers

- Dr. Kouqi Liu- Since 2018
- Dr. Shilpi Jain- Since 2019
- Dr. Linag Wang, 2017-2018 (Associate Professor, Southwest Petroleum University, China)
- Dr. Peiqiang Zhao, 2017-2018 (Assistant Professor, China University of Geosciences, China)
- Guoping Liu, PhD student- Since 2018 (China University of Petroleum, China)
- Jin Dong, PhD student- Since 2018 (China University of Petroleum, China)
- Menglu Wang, undergraduate student, Since 2019 (China University of Petroleum, China)

65. Other Experience and Professional Memberships

2001	Member, Society of Petroleum Engineers (SPE)
2008	Member of Society of Exploration Geophysicists (SEG)
2010	Member of American Association of Petroleum Geologists
2015	Faculty adviser to UND SPE student chapter
2008	Faculty adviser to UND SEG student chapter

2016 Associate Editor, Journal of Oil, Gas and Petrochemical Sciences
2018 Guest Editor, Journal of Marine Science and Engineering
2019 Lead Guest Editor, Journal of Chemistry

66. Honors and Awards

2001-2005 Iran Petroleum Ministry Full Scholarship Award
2005-2009 Iran Petroleum Ministry Full Scholarship Award
2011 ExxonMobil Scholarship Award
2012 Chevron/SEG Scholarship Award
2014 SPE New faculty career enhancement award
2015 SPE New faculty career enhancement award
2017 Open Educational Resource development award by UND office of the provost
2015 UND Faculty Instructional Development Grant award
2016 UND Faculty Instructional Development
2018 NIH I-Corps program graduate

67. Funded Competitive Research Supports (Completed/Ongoing)

I. Research

PI- \$2M- 2019/11/1-(Pending)

ND Industrial Commission

Economic viability of horizontal open hole completions, Madison Group, ND

PI- \$140K- 2019/03/1-2021/03/1

ND office of Vice President for Research Grant

Using bacterial RNA to solve the Bakken H₂S problems and increase oil production

CoPI- \$1.2M - 2018/05/16-2022/05/15

ND Industrial Commission/ND Geological Survey

An integrative study of the Bakken Formation: OOIP estimation, redesign of Hydraulic Fracturing through laboratory and ML methods and chemical treatments for increased productivity.

PI - \$356K - 2018/05/12-2019/11/12

ND Department of Commerce

A Path to a Quantitative Clinical Method for Early Diagnosis of Cancer Based on Cell Mechanics

CoPI- \$35K- 2017/12-2018/08

National Institute of Health (NIH)-NCI

Big data from Small RNA

PI - \$20K- 2018/02/15-2019/02/15

UND Early Career Award Program

Nanomechanical Evolution of Organic Matter during Hydrocarbon Generation

PI- \$50K/Yearly (Recurring)- 2018/03/15

US Geological Survey

Advanced Characterization of Source Rocks via nanoIR, microRaman and Force Spectroscopy

PI - \$35K/Yearly (Recurring)- 2018/01/01

ND School of Medicine and Health Sciences

Understanding Mechanobiology of Cells During Hyperbaric Oxygen Therapy

CoPI- \$60K- 2016/03/01-2018/03/01

UND Post-Doctoral Funding Program

Re-fracturing extending the life of Unconventional Oil Shale Reservoirs under Low Oil Prices.

PI- \$56K - 2015/03/15-2016/03/15

UND Collaborative Seed Grant

Fine scale characterization of the Bakken with focus on Imaging and gas adsorption methods

II. Scholarly

2014	SPE faculty career enhancement award (\$2000)
2015	SPE faculty career enhancement award (\$2000)
2016	UND Office of Instructional Development (\$2000)
2016	UND Faculty Instructional Development (\$6000)
2017	UND office of the provost for Open Educational Resource development (\$6000)

68. Top Collaborators and Projects Supporters

- Core Laboratories, Houston, TX, USA
- Oasis Petroleum, Williston, ND
- Credence Energy Services, Minot, ND
- Lillestol Research, Fargo, ND
- Marino Engineering Associate, Saint Louis, MO
- China University of Petroleum, Beijing, China
- Northeast Petroleum University, Daqing, China
- China University of Geosciences, Wuhan, China
- China Academy of Science, Guangzhou Institute of Geochemistry, Laboratory of Organic Geochemistry
- United States Geological Survey, Reston, VA, USA
- North Dakota Geological Survey, Bismarck, ND, USA
- Southwest Petroleum University, Chengdu, China
- China Spallation Neutron Source, Guangdong, China
- Department of Petroleum Engineering, National Iranian South Oil Company, Ahvaz, Iran
- NeuDax, CO, USA
- Schlumberger-Doll Research, MA, USA
- University of Nebraska Lincoln, NE, USA
- Northwestern University, NUANCE Center, IL, USA
- Stanford University, CA, USA
- California State University, CA, USA
- Curtin University, Perth, Australia
- Asylum Research Oxford Instruments, CA, USA
- Bruker Nanosurfaces, CA, USA
- Itasca Consulting Group, MN, USA
- Seoul National University, Seoul, South Korea