

Professional Experience

1. Assistant Professor, Pennsylvania State University, Fall 2017 - Present.
2. Principal R&D Engineer, Halliburton Energy Services, October 2013 - September 2017.
3. Post-doctoral Research Associate, University of Oklahoma, June 2013 - October 2013.

Education

1. PhD, Petroleum Engineering, University of Oklahoma, 2013.
2. MSc, Mechanical Engineering, Sharif University of Technology, 2006.
3. BSc, Petroleum Engineering, Sharif University of Technology, 2005.
4. BSc, Mechanical Engineering, Sharif University of Technology, 2004.

Research Interest

1. Mechanics and physics of porous media.
2. Subsurface geomechanics.
3. Drilling and completion operations.

Teaching

1. Drilling Engineering, PNG 450, Undergraduate level
2. Drilling Engineering Laboratory, PNG 451, Undergraduate level
3. Mechanics of Porous Media, PNG 502, Graduate level

Patents

1. A. Mehrabian, S.G. Teodorescu, D.E. Jamison, 2018, Closed-loop managed pressure drilling with hydraulic modeling that incorporates an inverse model, US Patent Grant 9909374.

Book Chapters

1. A. Mehrabian, V. Nguyen, Y. Abousleiman, 2018, Wellbore mechanics and stability in shale, In: *Sub-surface Science and Engineering of Shale*, Edited by: T. Dewers, M. Sanchez, and J. Heath, American Geophysical Union (AGU) Books: Wiley and Sons, In press.

Peer-reviewed Journal Publications

1. A. Mehrabian, A.D. Perez, C. Santana, 2018, Wellbore stability analysis considering the weak bedding planes effect - a case study, *SPE Drilling & Completion*, Accepted manuscript in press.
2. A. Mehrabian, 2018, The poroelastic constants of multiple-porosity solids, *International Journal of Engineering Science*, 132, 97-104.
3. C. Liu, A. Mehrabian, Y. Abousleiman, 2018, Theory and analytical solutions to coupled processes of transport and deformation in dual-porosity dual-permeability poro-chemo-electro-elastic media, *Journal of Applied Mechanics*, 85(11), 111006-111018.
4. A. Mehrabian, Y.N. Abousleiman, 2018, Theory and analytical solution to Cryer's problem of N-porosity and N-permeability poroelasticity, *Journal of the Mechanics and Physics of Solids*, 118, 218-227.

5. A. Mehrabian, Y.N. Abousleiman, 2017, Letter to the Editor regarding "A fully dynamic multi-compartmental poroelastic system: Application to aqueductal stenosis", by D. Chou, JC Vardakis, L. Guo, BJ Tully, and Y. Ventikos, *Journal of Biomechanics*, 58, 241-242.
6. A. Mehrabian, Y.N. Abousleiman, 2017, wellbore geomechanics of extended drilling margin and engineered lost circulation solutions, *Society of Petroleum Engineers Journal*, 22(04), 1178-1188.
7. C. Liu, A. Mehrabian, Y.N. Abousleiman, 2017, Poroelastic dual-porosity/dual-permeability after-closure pressure-curves analysis in hydraulic fracturing, *Society of Petroleum Engineers Journal*, 22 (01), 198-218.
8. A. Mehrabian, 2016, The stability of inclined and fractured wellbores, *Society of Petroleum Engineers Journal*, 21(05), 1518-1536.
9. A. Mehrabian, Y.N. Abousleiman, 2015, Gassmann equations and the constitutive relations for multiple-porosity and multiple-permeability poroelasticity with applications to oil and gas shale, *International Journal for Numerical and Analytical Methods in Geomechanics*, Poromechanics Special Issue, 39(14), 1547-1569.
10. A. Mehrabian, D.E. Jamison, S.G. Teodorescu, 2015, Geomechanics of lost-circulation events and wellbore strengthening operations, *Society of Petroleum Engineers Journal*, 20(6), 1305-1318.
11. A. Mehrabian, Y.N. Abousleiman, 2015, Geertsma's subsidence solution extended to layered stratigraphy, *Journal of Petroleum Science and Engineering*, 130, 68-76.
12. A. Mehrabian, Y.N. Abousleiman, T.B. Mapstone, C.A. El-Amm, 2015, Dual-porosity poroviscoelasticity and quantitative hydromechanical characterization of the brain tissue with experimental hydrocephalus data, *Journal of Theoretical Biology*, 384, 19-32.
13. A. Mehrabian, Y.N. Abousleiman, 2014, Generalized Biot's theory and Mandel's problem of multiple-porosity and multiple-permeability poroelasticity, *Journal of Geophysical Research : Solid Earth*, 119 (4), 2745-2763.
14. A. Mehrabian, Y.N. Abousleiman, 2013, Generalized poroelastic wellbore problem, *International Journal for Numerical and Analytical Methods in Geomechanics*, 37(6), 2727-2754.
15. A. Mehrabian, Y.N. Abousleiman, 2011, General solutions to poroviscoelastic model of human brain tissue, *Journal of Theoretical Biology*, 291(6), 105-118.
16. A. Mehrabian, F. Crespo, 2011, A new multi-sample EOS model for the gas condensate phase behavior analysis, *Oil & Gas Science and Technology–Revue d'IFP Energies Nouvelles*, 66(6), 1025-1033.
17. A. Mehrabian, Y.N. Abousleiman, 2009, The dilative intake of poroelastic inclusions an alternative to Mandel-Cryer effect, *Acta Geotechnica*, 4(4), 249-259.
18. M.T. Ahmadian, A. Mehrabian, 2006, Design optimization by numerical characterization of fluid flow through the valveless diffuser type micropumps, *Journal of Physics, Conf. Series*, 34, 379-384.

Conference Proceedings

1. A. Mehrabian, A.D. Perez, and C. Santana, 2018, Wellbore stability solution incorporating the weak bedding planes effect with field case study, Paper SPE 189593-MS presented at IADC/SPE Drilling Conference and Exhibition, 6-8 March, Fort Worth, Texas, USA.
2. A. Mehrabian, S. Savari, D. Whitfill, Y. Abousleiman, 2017, Geomechanics of wellbore strengthening revisited: A combined theoretical and experimental approach with field case studies, Paper SPE-184609 MS presented at 2017 SPE/AIDC Drilling Conference and Exhibition, 14-16 March, Amsterdam, Netherlands.

3. A. Mehrabian, Y.N. Abousleiman, 2017, Multiple-porosity and multiple-permeability: Theory and benchmark analytical solution, Proceedings of 6th Biot Conference on Poromechanics, Paris, France, July 9-13.
4. A. Mehrabian, Y. Abousleiman, 2016, Wellbore geomechanics of extended drilling margins and engineered lost circulation solutions, *50th US Rock Mechanics/Geomechanics Symposium*, Houston TX, 26-29 June.
5. A. Mehrabian, Y. Abousleiman, 2012, Realizations of experimental hydrocephalus data through the analytical model of poroviscoelastic brain tissue, SBC2012-80192, *Proceedings of the ASME Summer Bioengineering Conference*, Fajardo, Puerto Rico, June 20-23.
6. A. Mehrabian, Y. Abousleiman, 2010, The poroviscoelastic response of brain tissues during ventriculostomy treatments, *Proceedings of the IV European Conference on Computational Mechanics*, Palais des Congrès, Paris, May 16-21.
7. M.T. Ahmadian, A. Mehrabian, 2006, A new model for dynamic analysis of side mounted diffuser valve micropumps, ESDA2006-95038, *ASME 8th Biennial Conference on Engineering Systems Design and Analysis*, Torino, Italy, July 4-7.
8. M.T. Ahmadian, M. H. Saidi, Amin Mehrabian, M. Bazargan, S. D. Kenarsari, 2006, Performance of valveless diffuser micropumps under harmonic piezoelectric actuation, ESDA2006-95281, *ASME 8th Biennial Conference on Engineering Systems Design and Analysis*, Torino, Italy, July 4-7.
9. A. Mehrabian, M. T. Ahmadian, Effect of actuation frequency on the performance of diffuser micropumps, ICNMM2006-96008, *ASME 4th Conference on Micro, Mini and Nano-Channels*, Limerick, Ireland, June 19-21.
10. M. H. Saidi, A. Mehrabian, 2005, Analysis of two phase flow across a normal shock wave with drift velocity effects, *Proceeding of IIR International Conference on Refrigeration*, 703-711, Vicenza, Italy, August 30-31.

Technical Talks

1. A. Mehrabian, 2018, Geertsma's subsidence solution extended to layered stratigraphy, *Engineering Mechanics Institute Conference*, MIT, Massachusetts, May 29- June 01.
2. A. Mehrabian, 2018, Multiple-porosity and multiple-permeability poroelasticity of organic-rich shale, *Engineering Mechanics Institute Conference*, MIT, Massachusetts, May 29- June 01.
3. A. Mehrabian, Y. Abousleiman, 2015, Dual-porosity and dual-permeability poroelastic integrity analysis of naturally fractured shale in CO₂ sequestration operations, *Engineering Mechanics Institute Conference*, Stanford, California, June 16-19.

Departmental and Global Services

1. *Poromechanics Committee Member*, Engineering Mechanics Institute (EMI) of the American Society of Civil Engineers, March 2015 - Present.
2. *Associate Editor*, Journal of Petroleum Exploration and Production Technology (Springer). April 2018 - present.
3. *Faculty Advisor*, The student Chapter of American Association of Drilling Engineers (AADE), Pennsylvania State University, Fall 2017 - Present.
4. *Minisymposium Chair* (MS 89), Analytical and Numerical Solutions to Petroleum Geomechanics Problems, Engineering Mechanics Institute Conference (EMI 2018), MIT, Boston, Massachusetts, May 29 - June 2 2018.
5. *Minisymposium Co-Chair* (MS 104), Multiscale Mechanics and Physics of Shale, Engineering Mechanics Institute Conference (EMI 2017), USC, San Diego, June 4-7 2017.

6. *Technical Reviewer*: Advances in Water Resources - SPE Journal - Journal of Petroleum Science and Engineering - Journal of Engineering Mechanics - Rock Mechanics and Rock engineering - International Journal of Numerical and Analytical Methods in Geomechanics - International Journal for Rock Mechanics and Mining Sciences - Fuel - Journal of Petroleum Exploration and Production Technology - ASME Journal of Energy Resources Technology - Biot Conference on Poromechanics - American Rock Mechanics Association Conference.

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