

Curriculum Vitae

Boyun Guo

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EDUCATIONAL BACKGROUND

Ph.D. Petroleum Engineering, New Mexico Institute of Mining and Technology, Socorro, NM, 1992

M.S. Petroleum Engineering, Montana College of Mineral Science and Technology, Butte, MT, 1989

B.S. Engineering, Daqing Petroleum Institute, Anda, Heilongjiang, P. R. China, 1982

EMPLOYMENT HISTORY

2000-25 University of Louisiana at Lafayette, Lafayette, LA –Professor and Graduate Coordinator in Petroleum Engineering. Director of Center for Optimization of Petroleum Systems (COPS). Courses Taught: Well Design and Well Control, Drilling Engineering, Petroleum Production Engineering, Natural Gas Engineering, Petroleum Engineering Computer Applications, Horizontal Well Engineering, Formation Damage Control, Drilling Optimization, Advanced Petroleum Production Systems and Optimization, Advance Mass Transfer in Porous Media, Special Design Problems, and Undergraduate Research. Research Interests: 1) Underbalanced Drilling, 2) Development of Unconventional Reservoirs, and 3) Hydrocarbon Production Optimization.

1998-00 Edinburgh Petroleum Services Americas, Inc., Houston, TX – Senior Petroleum Engineer and TechTEAM Leader. Major Responsibility: Providing technical services in the areas of production optimization, well test design and analyses, and flow assurance analyses. Software Development Involvements: WellFlo, FieldFlo, Dynalift, PanSystem, PanMesh, ReO.

1994-98 Petroleum Recovery Research Center (PRRC), New Mexico Institute of Mining and Technology, Socorro, NM - Senior Research Associate. Research Conducted: Oil production improvement from complex reservoirs (naturally fractured reservoir, low permeability reservoir, low pressure reservoir), Flow modeling, CO₂ flooding process, and mechanism of oil recovery in low interfacial tension systems.

1992-94 Petroleum Engineering Department, New Mexico Institute of Mining and Technology, Socorro, NM - Visiting Assistant Professor. Courses Taught: Well Design, Production Engineering, Production Engineering Design, Engineering Mechanics, Advanced Strength of Materials, Vibrations in an Elastic Continuum, Engineering Design Clinics. Research and Technology Development: Flow of lightened fluids (air, aerated mud, and foam), and drill bit dynamics.

1989-92 Petroleum Engineering Department, New Mexico Institute of Mining and Technology, Socorro, NM - Research Assistant. Research and Technology Development: Gas hydrates decomposition and its mathematical modeling, water/gas coning phenomena and control, and 3-dimensional well drilling.

1988-89 Petroleum Engineering Department, Montana College of Mineral Science and Technology, Butte, MT - Research Assistant. Research Conducted: Probability of well bore interference.

1982-88 The Second Drilling Company, Daqing Petroleum Administrative Bureau, Daqing, Heilongjiang, P.R. China - Petroleum Engineer. Designed and supervised drilling operations for over 100 high-pressure and high-temperature wells.

AWARDS RECEIVED

- The Distinguished Faculty Award, New Mexico Institute of Mining and Technology, USA, 1993.
- Outstanding Technical Editor Awards, Society of Petroleum Engineers (SPE), 2000 and 2009.
- Awards for the Exceptional Support to the Flight Projects Directorate of NASA's Marshall Space Flight Center, 2003 and 2004.
- The 2008 Teacher of the Year Award, UL Lafayette College of Engineering, 2008.
- Award for the Distinguished Contributions to the Petroleum Engineering in the Area of Production and Operations, SPE Central/Southeastern North America Region, 2009.
- Distinguished Achievement Award for Petroleum Engineering Faculty, SPE Eastern Region, 2012.
- Researcher of the Year Award, UL Lafayette College of Engineering, 2016.
- Distinguished Professor, UL Lafayette, 2017.
- Outstanding Doctoral Student Mentor Awards, UL Lafayette, 2018-2021, 2023-2024.
- R&D Innovation Award, UL Lafayette, 2022.
- Research Excellence Award, UL Lafayette, 2024.
- Faculty of Excellence, UL Lafayette, 2025.

PROFESSIONAL ACTIVITIES

- Editorial Board member for *Journal of Natural Gas Engineering*
- Editorial Board member for *Sustainability*
- Associate Editor for *Journal of Natural Gas Science & Engineering*: Evaluation of papers
- Technical Editor for *SPE Drilling & Completion Journal*: Review technical papers.
- Technical Editor for *Journal of Petroleum Science and Engineering*: Review technical papers.
- Technical Editor for *Journal of Energy Resources Technology*: Review technical papers.
- Technical Editor for *Journal of Canadian Petroleum Technology*: Review technical papers.
- Member of IADC Publications Committee.

PATENTS

- Patent No. 20240410258A1: SYSTEMS AND METHODS FOR PRODUCING NATURAL GAS FROM HYDRATE DEPOSITS AND FOR STORING CARBON DIOXIDE.
- Patent No. 10900331: Moving-riser Method and System for Harvesting Natural Gas from Seabed Hydrates.
- Patent No. 5473904: Method and Apparatus for Generating, Transporting and Dissociating Gas Hydrates.
- Patent No. 201010245400: A New Design of Annular Flow Diverging Joint (FDJ) and Calculation Method for Gas Drilling.
- Patent No. 201410605630: A technique for manufacturing drill bits for rotary jet pumps for reverse circulation drilling with the dual-wall drill pipe.

- Patent No. 201410605684: A technique for manufacturing drill bits for tangential-feed rotary jet pumps for reverse circulation drilling with the dual-wall drill pipe.
- Patent No. 201410605713: A technique for manufacturing jet-drill-bits for horizontal drilling.
- Patent No. 201410605681: A technique for manufacturing jet-pump-bits for reverse circulation drilling with the dual-wall drill pipe.
- Patent No. 201310654747: A technique for manufacturing high-efficiency safe mud-drill jet-bits for horizontal drilling.
- Patent No. 201310654718: A technique for manufacturing high-efficiency safe gas-drill jet-bits for horizontal drilling.

PUBLICATIONS

Peer-Reviewed Journal Papers

1. Boyun Guo, Yuanyuan Ma, and Mohammad Nezam Uddin (2025). A Prior Assessment of Heat Transfer Efficiency from Shale Formations to Hydraulic Fractures in Geothermal Wells Converted from End-of-Lifetime Natural Gas Wells. *Energy Science and Engineering* (Oct. 2025)
2. Guo, B., Feng, Y., and Nawab, S. Mathematical Modelling of Distributed Cross-Flow in Hydraulic-Fractured Shale Reservoirs by Solving Differential-Integral Equation. *Mathematical Modelling of Engineering Problems* (August 2025). Vol. 12, No. 8, August 2025, pp. 2617-2626. <http://iicta.org/journals/mmep>.
3. Jin Xue and Boyun Guo. (2025). Analytical Modeling and Comparative Analysis of Capillary Imbibition in Shale Pores of Various Geometries. *Journal of Computer Modeling in Science and Engineering* (September 4, 2025). Doi:10.32604/cmesc.2025.069909
4. Guo, B. and Mahmood, M.N. (2025). Early Assessment of Carbon Dioxide Storage on Seafloor Using Jet-Cooling Technology. *Journal of Environmental Protection*, 16, 695-705. <https://doi.org/10.4236/jep.2025.167035>.
5. Guo, B.; Nguyen, V.; Lee, J. Mathematical Modeling of Friction Reduction in Drilling Long Horizontal Wells Using Smooth Catenary Well Trajectories. *Processes* 2025, 13, 1573. <https://doi.org/10.3390/pr13051573>
6. Boyun Guo and Philip Wortman. Revisiting the role of fluid imbibition in the hydrocarbon recovery processes from shale reservoirs. *Capillarity*, 2025, 15 (2): 25-32.
7. Jun Zhang, Boyun Guo, Vincent Nana Boah Amponsah. A more rigorous mathematical model for capillary imbibition of CO₂ in shale gas formations. *Capillarity*, 2025, 14(3): 63-71. <https://doi.org/10.46690/capi.2025.03.01>.
8. Jun Zhang, Boyun Guo, and Majid Hussain. Use of Pressure Transient Analysis Method to Assess Fluid Soaking in Multi-Fractured Shale Gas Wells. *Energies* 2025, 18(3), 549; <https://doi.org/10.3390/en18030549>.
9. Boyun Guo, Muhammad-Towhidul Islam and Md-Nahin Mahmood. Carbon dioxide hydrate formation in porous media under dynamic conditions. *Energy Science & Engineering* (November 6, 2024). DOI: 10.1002/ese3.1949
10. Md Nahin Mahmood, Vu V Nguyen, and Boyun Guo, Experimental and Theoretical Studies of Nano-Silica Solutions in Narrow Flow Paths Applied to Sealing Cement Cracks. *SPE Journal* (17 July 2024). <https://doi.org/10.2118/223088-PA>
11. Guo, B., Mahmood, M., Wortman, P., and Nguyen, V. 2024. Prediction of the Optimal Post-Fracturing Soaking Time in Multifractured Shale Gas/Oil Formations on the Basis of Modeling of Fluid Imbibition. *SPE Journal* (13 May 2024). CI-II. <https://doi.org/10.2118/221459-PA>

12. Guo, B., Wortman, P. 2024. Understanding the post-frac soaking process in multi-fractured shale gas-oil wells. *Capillarity*, 2024, 12(1): 6-16. <https://doi.org/10.46690/capi>.
13. Md Nahin Mahmood, Vu Nguyen, Boyun Guo. 2024. Challenges in mathematical modeling of dynamic mass transfer controlled by capillary and viscous forces in spontaneous fluid imbibition processes, *Capillarity*, Vol 11, No 2 (2024). <https://doi.org/10.46690/capi>.
14. Peng Zhang and Boyun Guo. 2024. A Feasibility Assessment of Heat Energy Productivity of Geothermal Wells Converted from Oil/Gas Wells. *Sustainability* 2024, 16, 768. <https://doi.org/10.3390/su16020768>.
15. Boyun Guo and Peng Zhang. 2023. Injectivity Assessment of Radial-Lateral Wells for CO₂ Storage in Marine Gas Hydrate Reservoirs, *Energies* 2023, 16(24), 7987. <https://doi.org/10.3390/en16247987>.
16. Md Nahin Mahmood and Boyun Guo. 2023. A Feasibility Study of Using Geothermal Energy to Enhance Natural Gas Production from Offshore Gas Hydrate Reservoirs by CO₂ Swapping. *Energy Engineering* (Sept 2023). <https://doi.org/10.32604/ee>.
17. Boyun Guo and Peng Zhang. 2023. Theoretical assessment of CO₂ injection into low-temperature water zones for non-leaking storage in hydrate form. *Advances in Geo-Energy Research*. 2023, 10(1). 1-6. <https://doi.org/10.46690/ager>.
18. Anireju Dudun, Yin Feng, Boyun Guo. 2023. Numerical Simulation of Hydrogen Diffusion in Cement Sheath of Wells Used for Underground Hydrogen Storage, *Sustainability* (15 July 2023), 15, 10844. <https://doi.org/10.3390/su151410844>
19. Peng Zhang and Boyun Guo. 2023. Factors Affecting the Fluid Temperature of Geothermal Energy Wells Converted from Abandoned Oil/Gas Wells. *Advances in Geo-Energy Research*. 2023, 9(1): 5-12. <https://doi.org/10.2139/ssrn.4454277>
20. Boyun Guo and Peng Zhang. 2023. Gas Production Potential in Geothermal-energy-enhanced CH₄-CO₂ Swapping Processes. *Journal of GeoEnergy* (June 13, 2023), vol. 2023, Article ID 4415673. <https://doi.org/10.1155/2023/4415673>
21. Md Nahin Mahmood, Vu Nguyen, Boyun Guo. 2023. Flow Behavior of Nano-Silica Solutions in Cement Cracks/Fractures. *J of Geoenergy Science and Engineering*. (March 18, 2023). <https://doi.org/10.1016/j.geoen.2023.211707>.
22. Olatunji Olayiwola, Ning Liu, and Boyun Guo. 2023. Prior Assessment of CO₂ Leak Rate through Fractures/Cracks Sealed by Nano-particle Gels, *J of Petroleum Exploration and Production Technology* (March 2023). <https://doi.org/10.1007/s13202-023-01626-1>.
23. Na Wei and Boyun Guo. 2023. Deliverable Wellhead Temperature —A Feasibility Study of Converting Abandoned Oil/Gas Wells to Geothermal Energy Wells. *Sustainability* (2023), 15, 729. <https://doi.org/10.3390/su15010729>.
24. Vu Nguyen, Olatunji Olayiwola, Ning Liu, Boyun Guo. 2023. An Experimental Investigation of Nano Silica Solution Flow through Cement Cracks. *Sustainability* 2023, 15, 577. <https://doi.org/10.3390/su15010577>.
25. Mahmood, M.N. and Guo, B. 2023. Gas production from marine gas hydrate reservoirs using geothermal-assisted depressurization method, *Advances in Geo-Energy Research*, Vol. 7, No. 2, p. 90-98. <https://doi.org/10.46690/ager>.
26. Boyun Guo, Peng Zhang, and Ning Liu. 2022. Mathematical modeling of nano-particle transport in oil well cement cracks, *Journal of Petroleum Science and Engineering* (2022). <https://doi.org/10.1016/j.petrol.2022.110862>.
27. Xu Yang, Boyun Guo, and Tamaralayefa Ayemidi Timiyan. Analytical and Numerical Simulation of Asymmetric Converging Flow of Gas under Drill Bits in Reverse Circulation Gas Drilling, *Journal of Energy Resources and Technology* (April 2022), Vol. 144. DOI: 10.1115/1.4051551.
28. Rashid Shaibu, Boyun Guo, Philip Wortman, and Jim Lee. 2022. Stress-Sensitivity of Fracture Conductivity of Tuscaloosa Marine Shale cores. *Journal of Petroleum Science and Engineering* (March 2022). Vol. 210, 110042. doi.org/10.1016/j.petrol.2021.110042.

29. Ming Wang, Yuanyuan Ma, Hao Li, Boyun Guo. 2022. Experimental and numerical investigations of water-oil two-phase flow in fractures with proppants of different wetting properties. *Journal of Petroleum Science and Engineering* (Feb. 2022). <https://doi.org/10.1016/j.petrol.2022.110361>
30. Olatunji Olayiwola, Vu Nguyen, Opeyemi Bello, Ebuka Osunwoke, Boyun Guo, and Catalin Teodoriu. 2022. Validation of analytical model and identification of salt effect on wellbore temperature in underbalanced drilling. *Journal of Petroleum Exploration and Production Technology* (2022), 12: 147-157. <https://doi.org/10.1007/s13202-021-01353-5>
31. Ming Wang and Boyun Guo. 2022. Effect of Fluid Contact Angle of Oil-wet Ceramic Fracture Proppant on the Water Flow from Sandstones to Proppant Packs. *Petroleum & Petrochemical Engineering Journal* (February 18, 2022). Vol. 6, Issue 1. DOI: 10.23880/ppej-16000295.
32. Boyun Guo and He Zhang. 2022. Mathematical Modeling of Heat Transfer from Geothermal Zones to Natural Gas Hydrate Reservoirs. *Petroleum & Petrochemical Engineering Journal* (February 24, 2022), Vol. 6, Issue 1. DOI: 10.23880/ppej-16000296.
33. Boyun Guo and He Zhang. 2022. Mathematical Modeling of the Dynamic Temperature Profile in Geothermal-Energy-Heated Natural Gas Hydrate Reservoirs. *Sustainability* 2022, 14, 2767. <https://doi.org/10.3390/su14052767>.
34. Chunkai Fu, Boyun Guo, Ning Liu. 2022. Leakoff assessment of nanoparticle-stabilized CO₂ foams for fracturing applications, *Journal of Natural Gas Science and Engineering*, Vol. 100, 2022, No. 104493. <https://doi.org/10.1016/j.jngse.2022.104493>.
35. Chunkai Fu, Boyun Guo, and Xiao Cai. 2022. An Innovative Method for Designing Smooth Catenary Well Trajectories in Extended-reach Drilling. *Petroleum & Petrochemical Engineering Journal* (March 11, 2022). Volume 6, Issue 1, DOI: 10.23880/ppej-16000297.
36. Ming Wang and Boyun Guo, 2022. Effect of Fluid Contact Angle of Oil-Wet Fracture Proppant on the Competing Water/Oil Flow in Sandstone-Proppant Systems, *Sustainability* (2022), 14, 3766. <https://doi.org/10.3390/su14073766>.
37. Md Nahin Mahmood and Boyun Guo. 2021. Productivity comparison of radial lateral wells and horizontal snake wells applied to marine gas hydrate reservoir development. *Petroleum* 7 (2021) 407-413. <https://doi.org/10.1016/j.petlm.2021.10.004>.
38. Ellis Ekhatior and Boyun Guo. 2021. Assessing the effect of well completion types on productivity in a class 1G gas hydrate reservoir under pseudo steady state. *Petroleum* 7 (2021) 414-426. <https://doi.org/10.1016/j.petlm.2021.10.006>.
39. Chunkai Fu, Boyun Guo, Liquan Shan, and Jim Lee. 2021. Mathematical modeling of heat transfer in y-shaped well couples for developing gas hydrate reservoirs using geothermal energy. *Journal of Natural Gas Science and Engineering* (November 2021). <https://doi.org/10.1016/j.jngse.2021.104325>.
40. Boyun Guo, Chunkai Fu, and Ning Liu. 2021. A Transient Flow Solution to Describe Fluid Flow to Horizontal Fractures Applied to Frac-Packed Wells. *Energy Science & Engineering* (Sept 2021). 1935–1945. <https://doi.org/10.1002/ese3.962>.
41. Nguyen, V, Olatunji, O, Guo, B and Liu, N. 2021. Well Cement Degradation and Wellbore Integrity in Geological CO₂ Storages: A Literature Review. *Petroleum & Petrochemical Engineering Journal* (July 26, 2021), Vol. 5, No. 3. DOI: 10.23880/ppej-16000269.
42. Owolabi Akanni, Chunkai Fu, and Boyun Guo. 2021. Drag Coefficients of Irregularly Shaped Particles in Newtonian Fluids. *Sustainability* 2021, 13(14), 7517; doi.org/10.3390/su13147517.
43. Rashid Shaibu and Boyun Guo. 2021. The Dilemma of Soaking a Hydraulically Fractured Horizontal Shale Well Prior to Flowback – A Decade Literature Review. *Journal of Natural Gas Science and Engineering* (June 2021). <https://doi.org/10.1016/j.jngse.2021.104084>.
44. Peng Zhang, Boyun Guo, and Ning Liu. 2021. Numerical Simulation of CO₂ Migration into Cement Sheath of Oil/Gas Wells. *Journal of Natural Gas Science and Engineering* (June 2021) <https://doi.org/10.1016/j.jngse.2021.104085>.
45. Rashid Shaibu, Chico Sambo, Boyun Guo, Anireju Dudun. 2021. An assessment of methane gas production from natural gas hydrates: Challenges, technology and market outlook. *Advances in Geo-Energy Research*. 2021. Vol. 5, No. 3, p. 318-332, <https://doi.org/10.46690/ager.2021.03.07>

46. Tamaralayefa A. Timiyan and Boyun Guo.2021. A Mathematical Model for Estimating Fracture Permeability with Invasion Damage of Formation Sand, *SPE Prod & Oper* (May /2021). SPE-205509-PA. <https://doi.org/10.2118/205509-PA>.
47. Chunkai Fu, Boyun Guo, and Ali Mokhtari.2021. Quantitative Analysis of the Sequential Initiation and Simultaneous Propagation of Multiple Fractures in Shale Gas/Oil Formations. *Journal of Petroleum Science and Engineering*, 200 (2021) 108272. <https://doi.org/10.1016/j.petrol.2020.108272>
48. Xiao Cai, Boyun Guo, Qingfeng Guo, and Hongwei Jiang.2021. Mathematical Simulation of Lost Circulation in Fracture and Its Control. *Geofluids*, Volume 2021, <https://doi.org/10.1155/2021/6691385>.
49. Boyun Guo, Chunkai Fu and Ning Liu.2021. A Priori Assessment of Long-Term Productivity of Frac-Packed Wells for Producing Natural Gas from Marine Gas Hydrate Reservoirs. *Energy Sci Eng.* 2021; 00:1–13. <https://doi.org/10.1002/ese3.866>.
50. Xu Yang, Boyun Guo, and Tamaralayefa Timiyan. 2021. A Mathematical Model for Predicting Long-Term Productivity of Channel-Fractured Shale Gas/Oil Wells, *SPE Production & Operations* (August 2021). <https://doi.org/10.2118/204471-PA>.
51. Yi Luo, Boyun Guo, Liehui Zhang, and Dong Xiao. 2021. Finite Element Analysis of Flow Field in Drill Bit Design for Gas-Lift Drilling, *Journal of Energy Resources Technology* Nov. 2021, 143(11): 113002. <https://doi.org/10.1115/1.4049607>.
52. Yanchang Liu, Liqun Shan, Boyun Guo, Minggang Sun, Gongtao Wang, Qing Wang. 2020 Numerical solutions of heat transfer problems in gas production from seabed gas hydrates. *Journal of Petroleum Science and Engineering*. Vol. 188, May 2020, 106824. <https://doi.org/10.1016/j.petrol.2019.106824>
53. Boyun Guo and Rashid Shaibu. 2020. An Analytical Model for Axial Force Transfer and the Maximum Compression Point of Work Strings in Extend Reach Drilling. *Insights Min Sci technol*. Volume 2 Issue 4 - December 2020, DOI: 10.19080/IMST.2020.02.555592.
54. Nan Zhang and Boyun Guo. 2020. Use of Mathematical Model to Predict the Maximum Permissible Stage Injection Time for Mitigating Frac-Driven Interactions in Hydraulic-Fracturing Shale Gas/Oil Wells. *Journal of Energy Resources Technology* (August 2021), Vol. 143 / 082901-1, published online November 19, 2020. <https://doi.org/10.1115/1.4048870>
55. Boyun Guo, Rashid Shaibu, and Xu Yang. 2020. Analytical Model for Predicting Productivity of Radial-Lateral Wells. *Energies* 2020. 13(23), 6386; <https://doi.org/10.3390/en13236386>.
56. Boyun Guo, Xiao Cai and Jim Lee. 2020. Mathematical Modeling of Fluid Flow through Channels behind Well Casing, *Petroleum & Petrochemical Engineering Journal* (August 7, 2020), Vol. 4, No. 4. DOI: 10.23880/ppej-16000231.
57. Boyun Guo, Rashid Shaibu, and Xuejun Hou, 2020. Crack Propagation Hypothesis and a Model to Calculate the Optimum Water-Soaking Period in Shale Gas/Oil Wells for Maximizing Well Productivity. *SPE Drilling & Completion* (Dec. 2020). <https://doi.org/10.2118/201203-pa>
58. Xuejun Hou, Boyun Guo, and Ellis Ekhatior. 2020. Technical Feasibility of Using Frac-Packed Wells for Producing Natural Gas from Offshore Gas Hydrate Reservoirs. *J Pet Environ Biotechnol*. 10:400. doi: 10.35248/2157-7463.19.10.400.
59. Zhiyong Huang, Boyun Guo, and Rashid Shaibu. 2020. Lab-Supported Hypothesis and Mathematical Modeling of Crack Development in the Fluid-Soaking Process of Multi-Fractured Horizontal Wells in Shale Gas Reservoirs. *Energies* 2020, 13, 1035. doi:10.3390/en13051035.
60. Xu Yang and Boyun Guo. 2020. Statistical analyses of reservoir and fracturing parameters for a multifractured shale oil reservoir in Mississippi. *Energy Sci Eng.* 2020; 8: 616–626. DOI: 10.1002/ese3.537.
61. Yan Xi, Jun Li, Qian Tao, Boyun Guo, Gonghui Liu. 2020. Experimental and numerical investigations of accumulated plastic deformation in cement sheath during multistage fracturing in shale gas wells. *Journal of Petroleum Science and Engineering* 187 (2020) 106790. [10.1016/j.petrol.2019.106790](https://doi.org/10.1016/j.petrol.2019.106790)

62. Shan, L., Fu, C., Liu, Y., et al. A feasibility study of using frac-packed wells to produce natural gas from subsea gas hydrate resources. *Energy Science & Engineering*, 2020, 8(4): 1247-1259. 10.1002/ese3.90
63. Xiao D, Wang M, Guo B, Weng D. Effect of surface wetting behavior of ceramic proppant on the two-phase flow across the interface of sandstone and fracture. *Energy Sci Eng.* 2019;00:1–7. 10.1002/ese3.595
64. Boyun Guo and Xu Yang. 2019. Use of a New Analytical Model to Match Production Data and Identify Opportunities to Maximize Well Productivity in the Tuscaloosa Marine Shale Reservoir. *SPE Production & Operations* (October 2019). 10.2118/198892-PA
65. Yang, X. and Guo, B. 2019. Productivity analysis of multi-fractured shale oil wells accounting for the low-velocity non-Darcy effect, *Journal of Petroleum Science and Engineering* 183 (2019) 106427. 2019.106427. 10.1016/j.petrol.2019.106427
66. Dong Xiao, Boyun Guo and Xiaohui Zhang. 2019. An Analytical Model for Describing Sequential Initiation and Simultaneous Propagation of Multiple Fractures in Hydraulic-Fracturing Shale Oil/Gas Formations. *Energy Science & Engineering* (2019). DOI: 10.1002/ese3.421. 10.1002/ese3.421
67. Yi Luo, Erxiu Shi, Yin Feng, Boyun Guo and Liehui Zhang. Finite Element Investigation of Flow Field below Asymmetric Drill Bits for Reverse Circulation in Drilling Tight Oil and Gas Reservoirs. *CMES* (Oct 2019). Vol.121, no.1, pp.105-122. 10.32604/cmes.2019.06500
68. Xi Yan, Li Jun, Zha Chunqing, Guo Boyun, and Liu Gonghui. 2019. A new investigation on casing shear deformation during multistage fracturing in shale gas wells based on microseism data and calliper surveys. *Journal of Petroleum Science and Engineering* (June 2019). 10.1016/j.petrol.2019.05.079
69. Xu Yang and Boyun Guo. 2019. A Data-Driven Workflow Approach to Optimization of Fracture Spacing in Multi-fractured Shale Oil Wells, *energies* (23 May 2019). 10.3390/en12101973
70. Xuejun Hou, Boyun Guo, and Xiaohui Zhang. 2019. Mathematical Modeling of Fluid Flow to Unconventional Oil Wells with Radial Fractures and Its Testing with Field Data. *Energy Resources Technology* (July 2019). Vol. 141. 10.1115/1.4042714
71. Xu Yang, Boyun Guo, and Xiaohui Zhang. 2019. An Analytical Model for Capturing the Decline of Fracture Conductivity in the Tuscaloosa Marine Shale Trend from Production Data, *energies* (21 May, 2019). 10.3390/en12101938
72. Gao Li, Boyun Guo, Jun Li, and Ming Wang. 2019. A Mathematical Model for Predicting Long-Term Productivity of Modern Multifractured Shale Gas/Oil Wells. SPE-194495-PA. *SPE Drilling and Completion Journal*, Vol. 34, Issue 01 (March 2019).
73. Chengli Zhang, Peng Wang, Boyun Guo, Guoling Song. 2018. Analytical modeling of productivity of multi-fractured shale gas wells under pseudo-steady flow conditions. *Energy Science & Engineering*: 2018; 6: 819–827. 10.1002/ese3.258.
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75. Guo, B., Shan, L., Jiang, S., Li, G., and Lee, J. 2018. The Maximum Permissible Fracturing Pressure in Shale Gas Wells for Wellbore Cement Sheath Integrity, *Journal of Natural Gas Science and Engineering*, 56 (2018) 324-332. 10.1016/j.jngse.2018.06.012
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77. Shan, L., Guo, B., Weng, D., Liu, Z., and Chu, H. 2018. Posteriori Assessment of Fracturing Propagation in Re-fractured Vertical Oil Wells by Pressure Transient Analysis, *Journal of Petroleum Science and Engineering* (2018), PETROL12431. 10.1016/j.petrol.2018.05.010

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83. Boyun Guo, Na Wei, Jinze Song, and Jim Lee. 2017. Prediction of the Maximum Allowable Bottom Hole Pressure in CO₂ Injection Wells, *Journal of Petroleum Science and Engineering*, Vol. 156, July 2017, Pages 575–581. 10.1016/j.petrol.2017.06.033
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