

List of Publications

Refereed Journal Publications

1. **Kiran, R.**, Upadhyay, R., Rajak, V.K., Kumar, A., and Gupta, S.D. 2024. Underpinnings of reservoir and techno-economic analysis for Himalayan and Son-Narmada-Tapti geothermal sites of India. *Renewable Energy*, 237, p. 121630. <https://doi.org/10.1016/j.renene.2024.121630> **Impact Factor: 9.0.**
2. **Kiran, R.**, Rajak, V.K., Upadhyay, R., and Kumar, A. 2024. Comparative techno-economic assessment of superhot rock and conventional geothermal energy feasibility for decarbonizing India. *Geothermics*, 122, p. 103078. <https://doi.org/10.1016/j.geothermics.2024.103078> **Impact Factor: 3.5**
3. Saif, M., **Kiran, R.**, Rajak, V.K. and Verma, R.K., 2024. Investigation of an Indian Site with Mafic Rock for Carbon Sequestration. *ACS Omega*, 9(28), pp.30270-30280. <https://doi.org/10.1021/acsomega.4c00213> **Impact Factor: 3.7**
4. Doley A., Mahto, V., Rajak V.K., **Kiran, R.** and Upadhyay, R. 2024. Investigation of Filtration and Shale Inhibition Characteristics of Chitosan-N-(2-hydroxyl)-propyl trimethylammonium Chloride as Drilling Fluid Additives. *ACS Omega*, 9(19), pp. 21365-21377. <https://doi.org/10.1016/j.petrol.2020.107822> **Impact Factor: 3.7**
5. Sekar, L.K., **Kiran, R.**, Okoroafor, E.R. and Wood, D.A., 2023. Review of reservoir challenges associated with subsurface hydrogen storage and recovery in depleted oil and gas reservoirs. *Journal of Energy Storage*, 72, p.108605. <https://doi.org/10.1016/j.est.2023.108605> **Impact Factor: 9.4**
6. **Kiran, R.**, Upadhyay, R., Rajak, V.K., Gupta, S.D. and Pama, H., 2023. Comprehensive study of the underground hydrogen storage potential in the depleted offshore Tapti-gas field. *International Journal of Hydrogen Energy*, 48(33), pp.12396-12409. <https://doi.org/10.1016/j.ijhydene.2022.12.172> **Impact Factor: 7.139**
7. Elgaddafi, R., Ahmed, R., **Kiran, R.**, Salehi, S. and Fajemidupe, O., 2022. Experimental and modeling studies of gas-liquid flow in vertical pipes at high superficial gas velocities. *Journal of Natural Gas Science and Engineering*, 106, p.104731. <https://doi.org/10.1016/j.jngse.2022.104731> **Impact Factor: 5.285**
8. **Kiran, R.**, Dansena, P., Salehi, S. and Rajak, V.K., 2022. Application of machine learning and well log attributes in geothermal drilling. *Geothermics*, 101, p.102355. <https://doi.org/10.1016/j.geothermics.2022.102355> **Impact Factor: 4.566**
9. Rajak, V.K., Gautam, S., Ajit, K.P., **Kiran, R.** and Madhumaya, A., 2022. Rheological Property Measurement and Application of Formate-Based Drilling Fluids at Elevated Temperatures: A Review. *MAPAN*, 37(3), pp.665-681. <https://doi.org/10.1007/s12647-022-00546-5> **Impact Factor: 1.446**
10. Magzoub, M.I., **Kiran, R.**, Salehi, S., Hussein, I.A. and Nasser, M.S., 2021. Assessing the relation between mud components and rheology for loss circulation prevention using polymeric gels: A machine learning approach. *Energies*, 14(5), p.1377. <https://doi.org/10.3390/en14051377>. **Impact Factor: 3.252.**
11. **Kiran, R.**, Elgaddafi, R., Ahmed, R., Salehi, S., Griffith, C.A. and Fajemidupe, T., 2020. Wellbore fluid sonic conditions during blowouts. *Journal of Petroleum Science and Engineering*, 195, p. 107822. <https://doi.org/10.1016/j.petrol.2020.107822>
12. **Kiran, R.**, Ahmed, R. and Salehi, S., 2020. Experiments and CFD modelling for two phase flow in a vertical annulus. *Chemical Engineering Research and Design*, 153, pp.201-211. <https://doi.org/10.1016/j.cherd.2019.10.012>
13. Ezeakacha, C.P., Salehi, S., and **Kiran, R.**, 2018. Lost circulation and filter cake evolution: Impact of dynamic wellbore conditions and wellbore strengthening implications. *Journal of Petroleum Science and Engineering*, vol. 171, pp. 1326-1337. <https://doi.org/10.1016/j.petrol.2018.08.063>
14. Salehi, S., **Kiran, R.**, Jeon, J., Kang, Z., Cokely, E.T., and Ybarra, V., 2018. Developing a cross-disciplinary, scenario-based training approach integrated with eye tracking data collection to

- enhance situational awareness in offshore oil and gas operations. *Journal of Loss Prevention in the Process Industries*, vol. 56, pp.78-94. <https://doi.org/10.1016/j.jlp.2018.08.009>
15. **Kiran, R.**, Teodoriu, C., Dadmohammadi, Y., Nygaard, R., Wood, D., Mokhtari, M., and Salehi, S. (2017). Identification and evaluation of well integrity and causes of failure of well integrity barriers (A review). *Journal of Natural Gas Science and Engineering*, vol. 45, pp. 511-526. <https://doi.org/10.1016/j.jngse.2017.05.009>
 16. Salehi, S., Khattak, M.J., Rizvi, H., Karbalaee, S.F., and **Kiran, R.**, 2017. Sensitivity analysis of fly ash geopolymer cement slurries: Implications for oil and gas wells cementing applications. *Journal of Natural Gas Science and Engineering*, vol. 37, pp. 116-125. <https://doi.org/10.1016/j.jngse.2016.11.025>
 17. **Kiran, R.** and Salehi, S. 2017. Thermoporoelectric Modeling of Time-Dependent Wellbore Strengthening and Casing Smear. *ASME Journal of Energy Resources Technology*, vol. 139, no. 2, pp. 022903. <https://doi.org/10.1115/1.4033591>
 18. Salehi, S., Madani, S.A., and **Kiran, R.** 2016. Characterization of drilling fluids filtration through integrated laboratory experiments and CFD modeling. *Journal of Natural Gas Science and Engineering*, vol. 29, pp. 462-468. <https://doi.org/10.1016/j.jngse.2016.01.017>
 19. Salehi, S. and **Kiran, R.** 2016. Integrated experimental and analytical wellbore strengthening solutions by mud plastering effects. *ASME Journal of Energy Resources Technology*, vol. 138, no. 3, pp. 032904. <https://doi.org/10.1115/1.4032236>

Refereed Conference Publications

20. Wartman, P., Ettehad, A., **Kiran, R.**, Ostrander, C. and Mokhtari, M., 2024, September. Facilitating Carbon Capture and Storage in Louisiana: The Implications of Environmental Protection Agency's Final Rule Granting Primacy for Class VI Wells. In SPE Annual Technical Conference and Exhibition. (p. D011S003R005). SPE.
21. Elgaddafi, R., **Kiran, R.**, Ahmed, R., Salehi, S., and Griffith, C. (2020, October 21). Development of a Computational Tool for Worst-Case Discharge Rate. SPE Annual Technical Conference. Virtual. <https://doi.org/10.2118/201722-MS>
22. **Kiran, R.** and Salehi, S. (2020) Assessing the Relation between Petrophysical and Operational Parameters in Geothermal Wells: A Machine Learning Approach. In the Proceedings of 45th Workshop on Geothermal Reservoir Engineering. Stanford, CA.
23. **Kiran, R.**, Naqavi, S. A., Salehi, S., and Teodoriu, C. (2019, September 23). Human Factors and Non-Technical Skills: Towards an Immersive Simulation-Based Training Framework for Offshore Drilling Operations. SPE Annual Technical Conference and Exhibition. Calgary, Alberta, CA. Paper no.: SPE-195838-MS. <https://doi.org/10.2118/195838-MS>
24. Sinha, S., **Kiran, R.**, Tellez, J., and Marfurt, K. (2019, July 31). Identification and Quantification of Parasequences Using Expectation Maximization Filter: Defining Well Log Attributes for Reservoir Characterization. Unconventional Resources Technology Conference. Denver, CO, USA. Paper Number: URTec-2019-1023. <https://doi.org/10.15530/urtec-2019-1023>
25. **Kiran R.**, Salehi, S., Mokhtari, M., and Kumar, A. (2019, June). Effect of Irregular shape and Wellbore Breakout on Fluid Dynamics and Wellbore Stability. 53rd US Rock Mechanics/ Geomechanics Symposium. New York City, NY, USA. Paper Number: ARMA-2019-2058.
26. **Kiran, R.** and Salehi, S. (2018, September). Mathematical Modeling and Analysis of Riser Gas Unloading Problem. Proceedings of the ASME 2018 37th International Conference on Ocean, Offshore and Arctic Engineering. Volume 8: Polar and Arctic Sciences and Technology; Petroleum Technology. Madrid, Spain. Paper Number: OMAE2018-77719. <https://doi.org/10.1115/OMAE2018-77719>
27. **Kiran, R.**, Salehi, S., and Teodoriu, C. (2018, September). Implementing Human Factors in Oil and Gas Drilling and Completion Operations: Enhancing Culture of Process Safety. Proceedings of the ASME 2018 37th International Conference on Ocean, Offshore and Arctic Engineering. Volume 8: Polar and Arctic Sciences and Technology; Petroleum Technology. Madrid, Spain. Paper Number: OMAE2018-78431. <https://doi.org/10.1115/OMAE2018-78431>

28. Ezeakacha, C. P., Salehi, S., and **Kiran, R.** (2018, September). Quantification of Multiple Factors and Interaction Effects on Drilling Fluid Invasion. Proceedings of the ASME 2018 37th International Conference on Ocean, Offshore and Arctic Engineering. Volume 8: Polar and Arctic Sciences and Technology; Petroleum Technology. Madrid, Spain. Paper Number: OMAE2018-78328. <https://doi.org/10.1115/OMAE2018-78328>
29. **Kiran, R.**, Salehi, S., Hayatdavoudi, A., and Ezeakacha, C. P. (2018, August). Wellbore Strengthening Characteristics Evaluation of Sandstones Using Experimental and Analytical Studies. 52nd U.S. Rock Mechanics/Geomechanics Symposium. Seattle, WA, USA. Paper Number: ARMA-2018-1129.
30. Ezeakacha, C. P., Salehi, S., and **Kiran, R.** (2018, August). Pore-Scale Mud Invasion in Different Rock Samples and Wellbore Conditions: Implications for Lithology Dependent Wellbore Strengthening. 52nd U.S. Rock Mechanics/Geomechanics Symposium. Seattle, WA, USA. Paper Number: ARMA-2018-544.
31. Kang, Z., Jeon, J., **Kiran, R.**, Salehi, S., Ybarra, V.T., and Cokely, E. (2018, May). Situation awareness assessment using eye movements and verbal response scoring metrics. In Proceedings of the 2018 IISE Annual Conference. Orlando, FL, USA. Paper Number: 2506.
32. Salehi, S., **Kiran, R.**, Jeon, J., Kang, Z., Teodoriu, C., and Cokely, E. (2018, April). Enhancing Situation Awareness and Process Safety in Offshore Drilling Operations: Applications of Eye-Tracking System. Offshore Technology Conference. Houston, TX, USA. Paper Number: OTC-28849-MS. <https://doi.org/10.4043/28849-MS>
33. **Kiran, R.**, Salehi, S., Jeon, J., and Kang, Z. (2018, March). Real-Time Eye-Tracking System to Evaluate and Enhance Situation Awareness and Process Safety in Drilling Operations. IADC/SPE Drilling Conference and Exhibition. Fort Worth, TX, USA, Paper Number: SPE-189678-MS. <https://doi.org/10.2118/189678-MS>
34. Dadmohammadi, Y., Salehi, S., **Kiran, R.**, Jeon, J., Kang, Z., Cokely, E.T., and Ybarra, V. (2017, October). Integrating Human Factors into Petroleum Engineering's Curriculum: Essential Training for Students. SPE Annual Technical Conference and Exhibition. San Antonio, TX, USA. Paper Number: SPE-187241-MS. <https://doi.org/10.2118/187241-MS>
35. **Kiran, R.**, Salehi, S., and Karimi, M. (2014, September). Finite Element Analysis of Casing Drilling Smearing Effect, SPE Deepwater Drilling and Completions Conference. Galveston, TX, USA. Paper Number: SPE 170314. <https://doi.org/10.2118/170314-MS>

Conference Presentations

36. **Kiran, R.** (2020, November). Worst Case Discharge (WCD) computational tool in Sonic and Supersonic. Presented at 24th Annual GoM Deepwater Technical Symposium, Virtual.
37. **Kiran, R.** (2019, April). Worst Case Discharge Estimation Based on Experimental and Numerical Investigation. AADE National Technical Conference and Exhibition University Student Paper and Poster Presentation. Denver, CO, USA.
38. **Kiran, R.** (2019, April). Worst Case Discharge Estimation Based on Experimental and Numerical Investigation of High-velocity Multi-phase Flow Characterization. SPE Mid-continent Regional Student Paper Presentation. Oklahoma City, OK, USA.
39. **Kiran, R.** and Salehi, S. (2017, September). Situation Awareness Assessment in Well Control Training using Eye Tracking Data and Scenario Planning. IADC Human Factors Conference & Exhibition. Galveston, TX, USA.
40. **Kiran, R.** and Salehi, S. (2017, April). Thermo-Poro-Elastic Modeling of Time-Dependent Wellbore Strengthening and Casing Smear. AADE National Technical Conference and Exhibition, Houston, TX, USA.
41. **Kiran, R.**, Salehi, S., and Karimi, M. 2014. Unravelling Casing Drilling Smearing: Finite Element Analysis. AADE National Technical Conference and Exhibition, Houston, TX, USA.
42. **Kiran, R.** and Salehi, S. 2015. Integrated Experimental, Numerical, and Analytical Investigation of Wellbore Strengthening and Casing Smear. Presented at 19th Annual GoM Deepwater Technical Symposium, New Orleans

43. **Kiran, R.** and Salehi, S. 2014. Numerical Investigation of Casing while Drilling Technology: Understanding Mechanisms. Presented at 18th Annual GoM Deepwater Technical Symposium, New Orleans

Invited Talks

44. **Kiran, R.** 2020. Cognitive engineering and its societal impacts of Deepwater horizon incident. International Webinar on Social Cost Benefit Analysis of Projects under the aegis of UGC-UKIERI Joint Research Program.
45. Salehi, S. Ahmed, R., Elgaddafi, R., Fajemidupe, O., and **Kiran R.** 2019. Project Overview - Research and Development on Critical (Sonic) Flow of Multiphase Fluids through Wellbores in Support of Worst-Case-Discharge Analysis for Offshore Wells. Technical Meeting of BOEM. New Orleans, LA, USA.
46. **Kiran, R.** 2015 Finite Element Analysis and Technological Benefits of Casing while Drilling. General Meeting AADE Lafayette Chapter. Lafayette, LA, USA.

Technical Reports

47. Salehi, S. Ahmed, R., Elgaddafi, R., Fajemidupe, O., and **Kiran R.** 2019. WCD Computational Tool - Research and Development on Critical (Sonic) Flow of Multiphase Fluids through Wellbores in Support of Worst-Case-Discharge Analysis for Offshore Wells, BOEM Report Prepared under Contract Award M16PS00059, Mewbourne School of Petroleum and Geological Engineering, University of Oklahoma, Norman, OK. <https://www.boem.gov/University-of-Oklahoma-Final-Report-WCD-Computational-Tool-10-2/>
48. Salehi, S. Ahmed, R., Elgaddafi, R., Fajemidupe, O., and **Kiran R.** 2019. Experimental Report - Research and Development on Critical (Sonic) Flow of Multiphase Fluids through Wellbores in Support of Worst-Case-Discharge Analysis for Offshore Wells, BOEM Report Prepared under Contract Award M16PS00059, Mewbourne School of Petroleum and Geological Engineering, University of Oklahoma, Norman, OK. <https://www.boem.gov/Experimental-Report/>
49. Salehi, S. Ahmed, R., Elgaddafi, R., and **Kiran R.** 2019. CFD Modeling Report - Research and Development on Critical (Sonic) Flow of Multiphase Fluids through Wellbores in Support of Worst-Case-Discharge Analysis for Offshore Wells, BOEM Report Prepared under Contract Award M16PS00059, Mewbourne School of Petroleum and Geological Engineering, University of Oklahoma, Norman, OK. <https://www.boem.gov/CFD-Modeling-Report/>
50. Salehi, S. Ahmed, R., Elgaddafi, R., and **Kiran R.** 2019. WCD Literature Review - Research and Development on Critical (Sonic) Flow of Multiphase Fluids through Wellbores in Support of Worst-Case-Discharge Analysis for Offshore Wells, BOEM Report Prepared under Contract Award M16PS00059, Mewbourne School of Petroleum and Geological Engineering, University of Oklahoma, Norman, OK. <https://www.boem.gov/WCD-Literature-Review/>

Ph.D. Dissertation

51. **Kiran, R.**, “Effect of Fluid Dynamics in Loss of Well Control Incidents in Subsea Wells,” Doctoral Dissertation, Mewbourne School of Petroleum and Geological Engineering, University of Oklahoma, USA. May 2019. Link to Dissertation: <https://shareok.org/handle/11244/319699>

MS Thesis

52. **Kiran, R.**, “Finite Element Analysis of Casing while Drilling’s Smearing Effect,” MS Thesis, Department of Petroleum Engineering, University of Louisiana at Lafayette, USA. December 2014. Link: <https://search.proquest.com/openview/73a98f9c947043085716e694c19b780e/1?pq-origsite=gscholar&cbl=18750&diss=y>