

REFERENCES

- [1] H. Osei, C. B. Bavoh, and B. Lal, “Research Advances in Machine Learning Techniques in Gas Hydrate Applications,” *ACS Omega*, vol. 9, no. 4, pp. 4210–4228, 2024, doi: 10.1021/acsomega.3c04825.
- [2] S. Elhenawy, M. Khraisheh, F. Almomani, M. A. Al-Ghouti, M. K. Hassan, and A. Al-Muhtaseb, “Towards Gas Hydrate-Free Pipelines: A Comprehensive Review of Gas Hydrate Inhibition Techniques,” *Energies*, vol. 15, no. 22, pp. 1–44, 2022, doi: 10.3390/en15228551.
- [3] KESDM, “Team Handbook Energy & Economic Statistics Indonesia,” *Minist. Energy Miner. Resour. Repub. Indones.*, pp. 23–26, 2021, [Online]. Available: <https://www.esdm.go.id/en/publication/handbook-of-energy-economic-statistics-of-indonesia-heesi>
- [4] S. S. D. Fonte, G. Simonelli, and L. C. L. Santos, “a Review of the Main Techniques To Avoid the Formation of Hydrates,” *Brazilian J. Pet. Gas*, vol. 12, no. 1, pp. 61–73, 2018, doi: 10.5419/bjpg2018-0006.
- [5] S. Dey, N. M. Reang, A. Majumder, M. Deb, and P. K. Das, “A hybrid ANN-Fuzzy approach for optimization of engine operating parameters of a CI engine fueled with diesel-palm biodiesel-ethanol blend,” *Energy*, vol. 202, p. 117813, 2020, doi: 10.1016/j.energy.2020.117813.
- [6] I. H. Sarker, “AI-Based Modeling: Techniques, Applications and Research Issues Towards Automation, Intelligent and Smart Systems,” *SN Comput. Sci.*, vol. 3, no. 2, pp. 1–20, 2022, doi: 10.1007/s42979-022-01043-x.
- [7] K. M. N. C. kumar Reddy and D. N. Kanagasabai, “Performance Analysis of ANFIS-PID Controller based Speed Regulation and Harmonic Reduction in BLDC Motor Application,” *Int. J. Electr. Electron. Res.*, vol. 12, no. 1, pp. 187–194, 2024, doi: 10.37391/ijeer.120127.
- [8] J. S. Stevanovic, “A neuro-fuzzy artificial intelligence system,” vol. 4, no. 2, pp. 21–26, 2019.
- [9] J. Rochette, M. Wemaëre, L. Chabason, and S. Callet, “Seeing beyond the horizon for deepwater oil and gas: strengthening the international

- regulation of offshore exploration and exploitation,” *IDDRI, Study n° 01/14*, no. february, pp. 1–36, 2014, [Online]. Available: https://www.iddri.org/sites/default/files/import/publications/st0114_jr-et-al._offshore-en.pdf
- [10] Z. Yu and H. Tian, “Application of Machine Learning in Predicting Formation Condition of Multi-Gas Hydrate,” *Energies*, vol. 15, no. 13, 2022, doi: 10.3390/en15134719.
 - [11] A. G. Aregbe, “Wellbore Stability Problems in Deepwater Gas Wells,” *World J. Eng. Technol.*, vol. 05, no. 04, pp. 626–647, 2017, doi: 10.4236/wjet.2017.54053.
 - [12] K. Huot, M. White, and T. Acharya, “Natural Gas Hydrates: A Review of Formation, and Prevention/Mitigation in Subsea Pipelines,” *Adv. Sci. Eng. Med.*, vol. 11, no. 6, pp. 453–464, 2019, doi: 10.1166/ase.2019.2384.
 - [13] H. Yang, L. Hao, and M. Wu, “Risk Analysis of Gas Hydrate Formation during Deepwater Gas Well Testing,” *Int. J. Geosci.*, vol. 07, no. 09, pp. 1057–1063, 2016, doi: 10.4236/ijg.2016.79080.
 - [14] N. . Makwashi, D. Zhao, T. . Ahmed, and I. Paikol, “Pipeline Gas Hydrate Formation and Treatment: A Review,” *3rd Natl. Eng. Conf. Bridg. Gap Between Avademia Ind.*, no. January, pp. 1–12, 2018.
 - [15] Z. WEN *et al.*, “Analysis of the world deepwater oil and gas exploration situation,” *Pet. Explor. Dev.*, vol. 50, no. 5, pp. 1060–1076, 2023, doi: 10.1016/S1876-3804(23)60449-5.
 - [16] A. S. Shameem Banu, M. Mathuri, Y. Bineshlal, and S. Jayakumar, *Virulence factors and antibiogram of uropathogenic Escherichia coli isolated at tertiary care hospital*, vol. 5, no. 5. 2014.
 - [17] L. A. Zadeh, “Fuzzy logic,” *Comput. Complex. Theory, Tech. Appl.*, vol. 9781461418, pp. 1177–1200, 2013, doi: 10.1007/978-1-4614-1800-9_73.
 - [18] A. A. Noaman, “Optimization and Controlling of Gas Hydrate Mitigation Methods in the Gas Wellhead Flowlines,” vol. 16, no. 1, pp. 9–25, 2022, doi: 10.22587/ajbas.2022.16.1.2.
 - [19] V. K. Arun Shankar, S. Umashankar, P. Sanjeevikumar, and S.

- Paramasivam, “Adaptive Neuro-Fuzzy Inference System (ANFIS) based Direct Torque Control of PMSM driven centrifugal pump,” *Int. J. Renew. Energy Res.*, vol. 7, no. 3, pp. 1436–1447, 2017, doi: 10.20508/ijrer.v7i3.5885.g7177.
- [20] M. I. Hamidiy, M. F. Amir, M. Nainggolan, A. Nengkoda, and A. N. Sommeng, “Cleanliness Correlation of Mono Ethylene Glycol (MEG) as Thermodynamic Hydrate Inhibitor to forecast Fresh Injection Period using Supervised Machine Learning”.
- [21] B. M, “A New Inhibitor to Prevent Hydrate Formation,” *Pet. Petrochemical Eng. J.*, vol. 5, no. 1, pp. 1–6, 2021, doi: 10.23880/ppej-16000251.
- [22] L. P. Holmblad and J. J. Ostergaard, “Control of a Cement Kiln By Fuzzy Logic,” *Fuzzy Inf Decis Process.*, pp. 389–399, 1982, doi: 10.1016/b978-1-4832-1450-4.50039-0.
- [23] S. Yasunobu, S. Miyamoto, and H. Ihara, *Fuzzy Control for Automatic Train Operation System*. IFAC, 1984. doi: 10.1016/b978-0-08-029365-3.50010-9.
- [24] I. Güler and E. D. Übeyli, “Adaptive neuro-fuzzy inference system for classification of EEG signals using wavelet coefficients,” *J. Neurosci. Methods*, vol. 148, no. 2, pp. 113–121, 2005, doi: 10.1016/j.jneumeth.2005.04.013.
- [25] A. B. Asghar and X. Liu, “Adaptive neuro-fuzzy algorithm to estimate effective wind speed and optimal rotor speed for variable-speed wind turbine,” *Neurocomputing*, vol. 272, pp. 495–504, 2018, doi: 10.1016/j.neucom.2017.07.022.
- [26] S. Mohanty, P. K. Patra, A. Mohanty, A. Harrag, and H. Rezk, “Adaptive Neuro-Fuzzy Approach for Solar Radiation Forecasting in Cyclone Ravaged Indian Cities: A Review,” *Front. Energy Res.*, vol. 10, no. May, pp. 1–21, 2022, doi: 10.3389/fenrg.2022.828097.