DAFTAR PUSTAKA

[1] K. Diwyacitta, R. A. Prasojo, Suwarno, and H. Gumilang, "Effects of lifetime and loading factor on dissolved gases in power transformers," in *2017 International Conference on Electrical Engineering and Computer Science (ICECOS)*, Aug. 2017, pp. 243–247. doi: 10.1109/ICECOS.2017.8167142.

[2] S. Okabe, G. Ueta, and T. Tsuboi, "Investigation of aging degradation status of insulating elements in oil-immersed transformer and its diagnostic method based on field measurement data," *IEEE Trans. Dielectr. Electr. Insul.*, vol. 20, no. 1, pp. 346–355, Feb. 2013, doi: 10.1109/TDEI.2013.6451376.

[3] S. Das, A. Paramane, S. Chatterjee, and U. M. Rao, "Accurate Identification of Transformer Faults From Dissolved Gas Data Using Recursive Feature Elimination Method," *IEEE Trans. Dielectr. Electr. Insul.*, vol. 30, no. 1, pp. 466–473, Feb. 2023, doi: 10.1109/TDEI.2022.3215936.

[4] *IEEE Guide for the Interpretation of Gases Generated in Mineral Oil-Immersed Transformers*. doi: 10.1109/IEEESTD.2019.8890040.

[5] I. E. Commission, "Mineral oil-filled electrical equipment in service–Guidance on the interpretation of dissolved and free gases analysis," *IEC*, vol. 60599, p. 2015, 2015.

[6] M. Duval, "A review of faults detectable by gas-in-oil analysis in transformers," *IEEE Electr. Insul. Mag.*, vol. 18, no. 3, pp. 8–17, May 2002, doi: 10.1109/MEI.2002.1014963.

[7] M. Duval and A. dePabla, "Interpretation of gas-in-oil analysis using new IEC publication 60599 and IEC TC 10 databases," *IEEE Electr. Insul. Mag.*, vol. 17, no. 2, pp. 31–41, Mar. 2001, doi: 10.1109/57.917529.

[8] S. S. M. Ghoneim, I. B. M. Taha, and N. I. Elkalashy, "Integrated ANN-based proactive fault diagnostic scheme for power transformers using dissolved gas analysis," *IEEE Trans. Dielectr. Electr. Insul.*, vol. 23, no. 3, pp. 1838–1845, Jun. 2016, doi: 10.1109/TDEI.2016.005301.

[9] I. B. M. Taha, S. S. M. Ghoneim, and Abdulaziz. S. A. Duaywah, "Refining DGA methods of IEC Code and Rogers four ratios for transformer fault diagnosis," in *2016 IEEE Power and Energy Society General Meeting (PESGM)*, Jul. 2016, pp. 1–5. doi: 10.1109/PESGM.2016.7741157.

[10] T. H. Dwiputranto, N. Akhmad Setiawan, and T. B. Adji, "DGA-Based Early Transformer Fault Detection using GA-Optimized ANN," in *2021 International Conference on Technology and Policy in Energy and Electric Power (ICT-PEP)*, Sep. 2021, pp. 342–347. doi: 10.1109/ICT-PEP53949.2021.9601111.

[11] E. Moradi, "A Data-Driven based Robust Multilayer Perceptron Approach for Fault Diagnosis of Power Transformers," in *2024 20th CSI International*

Symposium on Artificial Intelligence and Signal Processing (AISP), Feb. 2024, pp. 1–5. doi: 10.1109/AISP61396.2024.10475257.

[12] T. Wang, J. Yang, J. Shao, P. Wu, Y. Ma, and J. Liang, "Improvement of Power Transformer Faults Diagnosis Using Random Search with Classification and Regression Tree," in *2023 5th Asia Energy and Electrical Engineering Symposium (AEEES)*, Mar. 2023, pp. 653–658. doi: 10.1109/AEEES56888.2023.10114139.

[13] V. P. Maurya, P. Kumar, and S. Halder, "Optimisation and Classification of EMG signal using PSO-ANN," in *2019 Devices for Integrated Circuit (DevIC)*, Mar. 2019, pp. 191–195. doi: 10.1109/DEVIC.2019.8783882.

[14] G. Chintia, R. A. Prasojo, and Suwarno, "Power Transformer Insulation System Health Index with Missing Data Prediction using Random Forest," in *2023 IEEE 3rd International Conference in Power Engineering Applications (ICPEA)*, Mar. 2023, pp. 5–8. doi: 10.1109/ICPEA56918.2023.10093216.

[15] G. A. Sudrajad, S. Suwarno, and R. A. Prasojo, "Health Index prediction using Artificial Neural Network (ANN) on Historical Data of Power Transformer," in *2023 IEEE 3rd International Conference in Power Engineering Applications (ICPEA)*, Mar. 2023, pp. 239–242. doi: 10.1109/ICPEA56918.2023.10093199.

[16] S. Li and H. Dong, "Transformer Apparent Age Estimation Based on Probabilistic Health Index," in *2019 IEEE Innovative Smart Grid Technologies - Asia (ISGT Asia)*, May 2019, pp. 3936–3940. doi: 10.1109/ISGT-Asia.2019.8881798.

[17] K. N. V. P. S. Rajesh, U. M. Rao, I. Fofana, P. Rozga, and A. Paramane, "Influence of Data Balancing on Transformer DGA Fault Classification With Machine Learning Algorithms," *IEEE Trans. Dielectr. Electr. Insul.*, vol. 30, no. 1, pp. 385–392, Feb. 2023, doi: 10.1109/TDEI.2022.3230377.

[18] H. Nurcahyanto, J. M. Nainggolan, I. M. Ardita, and C. Hudaya, "Analysis of Power Transformer's Lifetime Using Health Index Transformer Method Based on Artificial Neural Network Modeling," in *2019 International Conference on Electrical Engineering and Informatics (ICEEI)*, Jul. 2019, pp. 574–579. doi: 10.1109/ICEEI47359.2019.8988870.

[19] Y. Irkham, T. B. Adji, and A. R. Pratama, "Assessment of Asset Health Index on Power Transformers Using AI Technique," in *2024 7th International Seminar on Research of Information Technology and Intelligent Systems (ISRITI)*, Dec. 2024, pp. 450–456. doi: 10.1109/ISRITI64779.2024.10963578.

[20] D. Saravanan, A. Hasan, A. Singh, H. Mansoor, and R. N. Shaw, "Fault Prediction of Transformer Using Machine Learning and DGA," in *2020 IEEE International Conference on Computing, Power and Communication Technologies (GUCON)*, Oct. 2020, pp. 1–5. doi:

10.1109/GUCON48875.2020.9231086.

[21] S. D. Patil, A. J. Patil, M. Dharme, and R. K. Jarial, “DGA Based Ensemble Learning Approach for Power Transformer Fault Diagnosis,” in *2023 International Conference in Advances in Power, Signal, and Information Technology (APSIT)*, Jun. 2023, pp. 722–727. doi: 10.1109/APSIT58554.2023.10201755.

[22] A. R. E. Soto, S. L. Lima, and O. R. Saavedra, “Incipient Fault Diagnosis in Power Transformers by DGA using a Machine Learning ANN - Mean Shift Approach,” in *2019 IEEE International Autumn Meeting on Power, Electronics and Computing (ROPEC)*, Nov. 2019, pp. 1–6. doi: 10.1109/ROPEC48299.2019.9057143.

[23] “Ageing of cellulose in mineral-oil insulated transformers,” CIGRE, 2007, pp. 263–267. doi: 10.1109/GPECOM61896.2024.10582728.

[24] U. M. Rao, I. Fofana, K. N. V. P. S. Rajesh, and P. Picher, “Identification and Application of Machine Learning Algorithms for Transformer Dissolved Gas Analysis,” *IEEE Trans. Dielectr. Electr. Insul.*, vol. 28, no. 5, pp. 1828–1835, Oct. 2021, doi: 10.1109/TDEI.2021.009770.

[25] J. P. Tan, J. C. Jueco, and E. M. Tan, “Performance Analysis of Multiple Machine Learning Models Applied to Dissolved Gas Analysis Under Thermal Fault Classification Considering IEEE C57.104-2019TM Standard for Substation Transformer,” in *2024 FORTEI-International Conference on Electrical Engineering (FORTEI-ICEE)*, Oct. 2024, pp. 247–252. doi: 10.1109/FORTEI-ICEE64706.2024.10824661.

[26] V. Cheemala, A. N. Asokan, and P. Preetha, “Transformer Incipient Fault Diagnosis using Machine Learning Classifiers,” in *2019 IEEE 4th International Conference on Condition Assessment Techniques in Electrical Systems (CATCON)*, Nov. 2019, pp. 1–6. doi: 10.1109/CATCON47128.2019.CN0046.

[27] Y. Benmahamed, O. Kherif, S. Chiheb, and M. Teguar, “PSO and SLPSO to Improve the SVM with RBF Kernel for the Diagnosis of Power Transformer Oil by DGA,” in *2024 1st International Conference on Electrical, Computer, Telecommunication and Energy Technologies (ECTE-Tech)*, Dec. 2024, pp. 1–4. doi: 10.1109/ECTE-Tech62477.2024.10851122.

[28] V. Anand and A. Dhabale, “Machine Learning Based Incipient Fault Identification of Power Transformer Through Dissolved Gas Analysis,” in *2024 IEEE 4th International Conference on Sustainable Energy and Future Electric Transportation (SEFET)*, Jul. 2024, pp. 1–6. doi: 10.1109/SEFET61574.2024.10718194.

[29] A. Dhiman, H. K. Azmeera, and C. C. Reddy, “Intelligent Diagnosis of Transformer Faults Using DGA,” in *2024 IEEE 7th International Conference*

on Condition Assessment Techniques in Electrical Systems (CATCON), Nov. 2024, pp. 166–170. doi: 10.1109/CATCON60527.2024.10831256.

[30] N. Poonnoy, C. Suwanasri, and T. Suwanasri, "Neural Network Approach to Dissolved Gas Analysis for Fault Analysis in Power Transformers," in *2022 International Electrical Engineering Congress (iEECON)*, Mar. 2022, pp. 1–4. doi: 10.1109/iEECON53204.2022.9741595.

[31] J. Nan, "PSO-BP Neural Network Based Prediction Study for Nonlinear Problems," in *2023 IEEE International Conference on Electrical, Automation and Computer Engineering (ICEACE)*, Dec. 2023, pp. 1507–1512. doi: 10.1109/ICEACE60673.2023.10442603.

[32] R. Salih Jawad and H. Abid, "Fault Detection and Location for VSC- HVDC Systems with the Coexistence of AC and DC Faults by Using PSO- Neural Network," in *2022 IEEE 21st international Ccnference on Sciences and Techniques of Automatic Control and Computer Engineering (STA)*, Dec. 2022, pp. 487–491. doi: 10.1109/STA56120.2022.10019041.

[33] C. Liu, W. Ding, Z. Li, and C. Yang, "Prediction of high-speed grinding temperature of titanium matrix composites using BP neural network based on PSO algorithm," *Int. J. Adv. Manuf. Technol.*, vol. 89, no. 5, pp. 2277–2285, Mar. 2017, doi: 10.1007/s00170-016-9267-z.

[34] L. Tang, S. Yuan, Y. Tang, and Z. Qiu, "Optimization of impulse water turbine based on GA-BP neural network arithmetic," *J. Mech. Sci. Technol.*, vol. 33, no. 1, pp. 241–253, Jan. 2019, doi: 10.1007/s12206-018-1224-3.

[35] Y. Shi and R. Eberhart, "A modified particle swarm optimizer," in *1998 IEEE International Conference on Evolutionary Computation Proceedings. IEEE World Congress on Computational Intelligence (Cat. No.98TH8360)*, May 1998, pp. 69–73. doi: 10.1109/ICEC.1998.699146.

[36] A. Nickabadi, M. M. Ebadzadeh, and R. Safabakhsh, "A novel particle swarm optimization algorithm with adaptive inertia weight," *Appl. Soft Comput.*, vol. 11, no. 4, pp. 3658–3670, 2011, doi: https://doi.org/10.1016/j.asoc.2011.01.037.

[37] A. Ratnaweera, S. K. Halgamuge, and H. C. Watson, "Self-organizing hierarchical particle swarm optimizer with time-varying acceleration coefficients," *IEEE Trans. Evol. Comput.*, vol. 8, no. 3, pp. 240–255, Jun. 2004, doi: 10.1109/TEVC.2004.826071.

[38] W. Zhang and Y. Liu, "Multi-objective reactive power and voltage control based on fuzzy optimization strategy and fuzzy adaptive particle swarm," *Int. J. Electr. Power Energy Syst.*, vol. 30, no. 9, pp. 525–532, 2008, doi: https://doi.org/10.1016/j.ijepes.2008.04.005.

[39] E. F. Campana, G. Fasano, and A. Pinto, "Dynamic analysis for the selection of parameters and initial population, in particle swarm optimization," *J. Glob.*

Optim., vol. 48, no. 3, pp. 347–397, Nov. 2010, doi: 10.1007/s10898-009-9493-0.

[40] S. Weizheng and W. Wenxiang, "The prediction of energy and optimal structure of gold clusters under PSO-BP neural network model and GA algorithm," in *2021 IEEE International Conference on Electrical Engineering and Mechatronics Technology (ICEEMT)*, Jul. 2021, pp. 720–723. doi: 10.1109/ICEEMT52412.2021.9601741.

[41] A. D. Laksito, A. Yaqin, S. Adi, and M. Hayaty, "Neural Network Optimization for Prediction of Student Study Period," in *2021 Sixth International Conference on Informatics and Computing (ICIC)*, Nov. 2021, pp. 1–5. doi: 10.1109/ICIC54025.2021.9632965.

[42] H. K. Ibrahim, N. Rokbani, A. Wali, and A. M. Alimi, "GA-NN and PSO-NN for Medical Images Classification: A Comparative Analysis," in *2023 IEEE International Conference on Artificial Intelligence & Green Energy (ICAIGE)*, Oct. 2023, pp. 1–6. doi: 10.1109/ICAIGE58321.2023.10346503.

[43] G. E. Hinton, S. Osindero, and Y.-W. Teh, "A Fast Learning Algorithm for Deep Belief Nets," *Neural Comput.*, vol. 18, no. 7, pp. 1527–1554, Jul. 2006, doi: 10.1162/neco.2006.18.7.1527.

[44] CIGRE, "Ageing of cellulose in mineral-oil insulated transformers," vol. 323, pp. 1–88, 2007.

[45] "IEEE Guide for the Interpretation of Gases Generated in Mineral Oil-Immersed Transformers," *IEEE Std C57104-2019 Revis. IEEE Std C57104-2008*, pp. 1–98, Nov. 2019, doi: 10.1109/IEEESTD.2019.8890040.

[46] "IEEE Guide for the Interpretation of Gases Generated in Oil-Immersed Transformers," *IEEE Std C57104-1991*, p. 0_1-, 1992, doi: 10.1109/IEEESTD.1992.106973.

[47] U. N. Dulhare, K. Ahmad, and K. A. B. Ahmad, *Machine Learning and Big Data ; Concept, Tools and Applications*. Hoboken: John Wiley & Son Ltd.

[48] J. Brownlee, *Machine Learning Mastery with Python*, vol. V1.13. 2018.

[49] A. S. Miller, B. H. Blott, and T. K. Hames, "Review of neural network applications in medical imaging and signal processing," *Med Biol Eng Comput*, vol. 30, no. 5, pp. 449–464, Sep. 1992.

[50] J. Kennedy and R. Eberhart, "Particle Swarm Optimization," *ICNN'95 – Int. Conf. Neural Netw.*, pp. 1942–1948, 1995.

[51] S. Cheng, Y. Shi, Q. Qin, and R. Bai, "Swarm intelligence in big data analytics In Lecture Notes in Computer Science," *Springer-Verl. Berl. Heidelb.*, vol. 8206, no. 60975080, pp. 417–426, 2013.

[52] D. Saravanan, A. Hasan, A. Singh, H. Mansoor, and R. N. Shaw, "Fault Prediction of Transformer Using Machine Learning and DGA," in *2020 IEEE International Conference on Computing, Power and Communication*

Technologies (GUCON), Oct. 2020, pp. 1–5. doi: 10.1109/GUCON48875.2020.9231086.

[53] L. Breiman, “Random Forests,” *Kluwer Acad. Publ.*, vol. 45, pp. 5–32, 2001.

[54] N. V. Chawla, K. W. Bowyer, L. O. Hall, and W. P. Kegelmeyer, “SMOTE: Synthetic Minority Over-sampling Technique,” *J. Artif. Intell. Res.*, vol. 16, pp. 321–357.

[55] N. S. Krishna, Y. V. P. Kumar, K. P. Prakash, and G. P. Reddy, “Machine Learning and Statistical Techniques for Outlier Detection in Smart Home Energy Consumption,” in *2024 IEEE Open Conference of Electrical, Electronic and Information Sciences (eStream)*, Apr. 2024, pp. 1–4. doi: 10.1109/eStream61684.2024.10542609.