

## DAFTAR PUSTAKA

- Adel Niaei, H., & Rostamizadeh, M. (2021). Iron modified zeolite carrier for efficiently pharmaceutical pollutant degradation in heterogeneous electro-Fenton: Influence factors and kinetic. *Environmental Progress and Sustainable Energy*, 40(3). <https://doi.org/10.1002/ep.13570>
- Bhanot, P., Celin, S. M., Sreekrishnan, T. R., Kalsi, A., Sahai, S. K., & Sharma, P. (2020). Application of integrated treatment strategies for explosive industry wastewater—A critical review. In *Journal of Water Process Engineering* (Vol. 35). Elsevier Ltd. <https://doi.org/10.1016/j.jwpe.2020.101232>
- Brillas, E., Sirés, I., & Oturan, M. A. (2009). Electro-fenton process and related electrochemical technologies based on fenton's reaction chemistry. *Chemical Reviews*, 109(12), 6570–6631. <https://doi.org/10.1021/cr900136g>
- Bui, D. N., & Minh, T. T. (2021). Investigation of TNT red wastewater treatment technology using the combination of advanced oxidation processes. *Science of the Total Environment*, 756. <https://doi.org/10.1016/j.scitotenv.2020.143852>
- Chesson, L. A., Tipple, B. J., Howa, J. D., Bowen, G. J., Barnette, J. E., Cerling, T. E., & Ehleringer, J. R. (2013). Stable Isotopes in Forensics Applications. In *Treatise on Geochemistry: Second Edition* (Vol. 14, pp. 285–317). Elsevier Inc. <https://doi.org/10.1016/B978-0-08-095975-7.01224-9>
- Clark, L. T. ' (1933). Diazodinitrophenol, a Detonating Explosive. *Industrial and Engineering Chemistry*, 25(6), 663–669.
- Deng, Y., & Englehardt, J. D. (2006). Treatment of landfill leachate by the Fenton process. In *Water Research* (Vol. 40, Issue 20, pp. 3683–3694). Elsevier Ltd. <https://doi.org/10.1016/j.watres.2006.08.009>
- Dokhani, A., kheirkhah, B., Kalantar-Neyestanaki, D., Rokhbakhsh-Zamin, F., Dolatabadi, M., & Ahmadzadeh, S. (2024). Removal of Staphylococcus aureus using electro-fenton, UV/H<sub>2</sub>O<sub>2</sub>, and combination of electro-fenton and UV/H<sub>2</sub>O<sub>2</sub> processes; optimization of operational parameters. *Applied Water Science*, 14(5). <https://doi.org/10.1007/s13201-024-02151-0>
- Dolatabadi, M., Świergosz, T., & Ahmadzadeh, S. (2021). Electro-Fenton approach in oxidative degradation of dimethyl phthalate - The treatment of aqueous leachate from landfills. *Science of the Total Environment*, 772. <https://doi.org/10.1016/j.scitotenv.2021.145323>
- Droguett, C., Salazar, R., Brillas, E., Sirés, I., Carlesi, C., Marco, J. F., & Thiam, A. (2020). Treatment of antibiotic cephalexin by heterogeneous electrochemical Fenton-based processes using chalcopyrite as sustainable catalyst. *Science of the Total Environment*, 740. <https://doi.org/10.1016/j.scitotenv.2020.140154>

- El-Ghenymy, A., Garcia-Segura, S., Rodríguez, R. M., Brillas, E., El Begrani, M. S., & Abdelouahid, B. A. (2012). Optimization of the electro-Fenton and solar photoelectro-Fenton treatments of sulfanilic acid solutions using a pre-pilot flow plant by response surface methodology. *Journal of Hazardous Materials*, 221–222, 288–297. <https://doi.org/10.1016/j.jhazmat.2012.04.053>
- Göde, J. N., Hoeffling Souza, D., Trevisan, V., & Skoronski, E. (2019). Application of the Fenton and Fenton-like processes in the landfill leachate tertiary treatment. *Journal of Environmental Chemical Engineering*, 7(5). <https://doi.org/10.1016/j.jece.2019.103352>
- Gu, Z., Chen, W., Li, Q., & Zhang, A. (2019). Kinetics study of dinitrodiazophenol industrial wastewater treatment by a microwave-coupled ferrous-activated persulfate process. *Chemosphere*, 215, 82–91. <https://doi.org/10.1016/j.chemosphere.2018.10.009>
- Gu Zhepei, Pan Xupin, Guo Shengpeng, & Zhang Aiping. (2019). Dinitrodiazophenol industrial wastewater treatment by a sequential ozone Fenton process. *Environmental Science and Pollution Research*, 26:32666–32671. <https://doi.org/10.1007/s11356-019-06469-0>
- Guimarães, V., Lucas, M. S., & Peres, J. A. (2019). Combination of adsorption and heterogeneous photo-Fenton processes for the treatment of winery wastewater. *Environmental Science and Pollution Research*, 26(30), 31000–31013. <https://doi.org/10.1007/s11356-019-06207-6>
- Hanna Instruments Inc. (2022). *INSTRUCTION MANUAL HI83314 Multiparameter Photometer with COD for Wastewater*. [www.hannainst.com](http://www.hannainst.com).
- Hanna Instruments Inc. (2023). *INSTRUCTION MANUAL HI839800 Hanna Instruments COD Reactor for Chemical Oxygen Demand and user-specific analysis*. [www.hannainst.com](http://www.hannainst.com)
- Ilhan, F., Ulucan-Altuntas, K., Dogan, C., & Kurt, U. (2019). Treatability of raw textile wastewater using Fenton process and its comparison with chemical coagulation. *Desalination and Water Treatment*, 162, 142–148. <https://doi.org/10.5004/dwt.2019.24332>
- Jiang, C. C., & Zhang, J. F. (2007). Progress and prospect in electro-Fenton process for wastewater treatment. *Journal of Zhejiang University: Science A*, 8(7), 1118–1125. <https://doi.org/10.1631/jzus.2007.A1118>
- Karatas, O., Gengec, N. A., Gengec, E., Khataee, A., & Kobya, M. (2022). High-performance carbon black electrode for oxygen reduction reaction and oxidation of atrazine by electro-Fenton process. *Chemosphere*, 287, 132370. <https://doi.org/10.1016/J.CHEMOSPHERE.2021.132370>
- Lai, B., Chen, Z., Fang, S., & Zhou, Y. (2015). A Combined Treatment Approach Using Fe<sub>0</sub>/Air and Fenton's Reagent for the Treatment of Delay Explosive Wastewater. *Industrial and Engineering Chemistry Research*, 54(28), 7094–7101. <https://doi.org/10.1021/acs.iecr.5b01360>

- Liu, X., Wen, L., Wang, C., Zhang, L., & Zhang, A. (2020). Treatment of dinitrodiazophenol industrial wastewater by an ozone/persulfate process. *Desalination and Water Treatment*, 198, 224–231. <https://doi.org/10.5004/dwt.2020.25913>
- Maher, E. K., O'Malley, K. N., Heffron, J., Huo, J., Mayer, B. K., Wang, Y., & McNamara, P. J. (2019). Analysis of operational parameters, reactor kinetics, and floc characterization for the removal of estrogens via electrocoagulation. *Chemosphere*, 220, 1141–1149. <https://doi.org/10.1016/j.chemosphere.2018.12.161>
- Manner, V. W., Smilowitz, L., Freye, C. E., Cleveland, A. H., Brown, G. W., Suvorova, N., & Tian, H. (2022). Chemical Evaluation and Performance Characterization of Pentaerythritol Tetranitrate (PETN) under Melt Conditions. *ACS Materials Au*, 2(4), 464–473. <https://doi.org/10.1021/acsmaterialsau.2c00022>
- Mohadesi, M., & Shokri, A. (2017). Evaluation of Fenton and photo-Fenton processes for the removal of p-chloronitrobenzene in aqueous environment using Box-Behnken design method. *Desalination and Water Treatment*, 81, 199–208. <https://doi.org/10.5004/dwt.2017.21182>
- Nandiyanto, A. B. D., Oktiani, R., & Ragadhita, R. (2019). How to read and interpret ftir spectroscopy of organic material. *Indonesian Journal of Science and Technology*, 4(1), 97–118. <https://doi.org/10.17509/ijost.v4i1.15806>
- Nidheesh, P. V., & Gandhimathi, R. (2012). Trends in electro-Fenton process for water and wastewater treatment: An overview. In *Desalination* (Vol. 299, pp. 1–15). <https://doi.org/10.1016/j.desal.2012.05.011>
- O'Shea, K. E., & Dionysiou, D. D. (2012). Advanced oxidation processes for water treatment. In *Journal of Physical Chemistry Letters* (Vol. 3, Issue 15, pp. 2112–2113). <https://doi.org/10.1021/jz300929x>
- Pandis, P. K., Kalogirou, C., Kanellou, E., Vaitsis, C., Savvidou, M. G., Sourkouni, G., Zorpas, A. A., & Argiris, C. (2022). Key Points of Advanced Oxidation Processes (AOPs) for Wastewater, Organic Pollutants and Pharmaceutical Waste Treatment: A Mini Review. In *ChemEngineering* (Vol. 6, Issue 1). MDPI. <https://doi.org/10.3390/chemengineering6010008>
- Paramo-Vargas, J., Camargo, A. M. E., Gutierrez-Granados, S., Godinez, L. A., & Peralta-Hernandez, J. M. (2015). Applying electro-Fenton process as an alternative to a slaughterhouse effluent treatment. *Journal of Electroanalytical Chemistry*, 754, 80–86. <https://doi.org/10.1016/j.jelechem.2015.07.002>
- PPRI. (2021). *PP RI No. 22 Tahun 2021 Penyelenggaraan Perlindungan dan Pengelolaan Lingkungan Hidup*.
- Rana, A. G., Tasbihi, M., Schwarze, M., & Minceva, M. (2021). Efficient advanced oxidation process (Aop) for photocatalytic contaminant degradation using exfoliated metal-free graphitic carbon nitride and visible light-emitting diodes. *Catalysts*, 11(6). <https://doi.org/10.3390/catal11060662>

- Rekhate, C. V., & Srivastava, J. K. (2020). Recent advances in ozone-based advanced oxidation processes for treatment of wastewater- A review. In *Chemical Engineering Journal Advances* (Vol. 3). Elsevier B.V. <https://doi.org/10.1016/j.cej.2020.100031>
- Ribeiro, J. P., Gomes, H. G. M. F., Sarinho, L., Marques, C. C., & Nunes, M. I. (2022). Synergies of metallic catalysts in the Fenton and photo-Fenton processes applied to the treatment of pulp bleaching wastewater. *Chemical Engineering and Processing - Process Intensification*, 181. <https://doi.org/10.1016/j.cep.2022.109159>
- Salnuddin, Susanto, A. N., & Bemba, J. (2024). Perbandingan Penggunaan Model Regresi Linear dan Nonlinear dalam Mendeterminasi Daya Simpan Panas (DSP) Gerabah Pengembangan. *Statistika*, 24(1), 65–74. <https://doi.org/10.29313/statistika.v24i1.3466>
- Shokri, A., & Nasernejad, B. (2023). Treatment of spent caustic wastewater by electro-Fenton process: Kinetics and cost analysis. *Process Safety and Environmental Protection*, 172, 836–845. <https://doi.org/10.1016/j.psep.2023.02.077>
- Shokri, A., Nasernejad, B., & Fard, M. S. (2023). Challenges and Future Roadmaps in Heterogeneous Electro-Fenton Process for Wastewater Treatment. *Water Air Soil Pollut.* <https://doi.org/https://doi.org/10.1007/s11270-023-06139-5>
- Suhan, M. B. K., Shuchi, S. B., Anis, A., Haque, Z., & Islam, M. S. (2020). Comparative degradation study of remazol black B dye using electro-coagulation and electro-Fenton process: Kinetics and cost analysis. *Environmental Nanotechnology, Monitoring and Management*, 14. <https://doi.org/10.1016/j.enmm.2020.100335>
- Wei, L. L., Chen, W. M., Li, Q. Bin, Gu, Z. P., & Zhang, A. P. (2018). Treatment of dinitrodiazophenol industrial wastewater in heat-activated persulfate system. *RSC Advances*, 8(37), 20603–20611. <https://doi.org/10.1039/c8ra01995a>
- Xiao, L., Guo, S., Su, H., Gou, B., Liu, Q., Hao, G., Hu, Y., Wang, X., & Jiang, W. (2019). Preparation and characteristics of a novel PETN/TKX-50 co-crystal by a solvent/non-solvent method. *RSC Advances*, 9(16), 9204–9210. <https://doi.org/10.1039/c8ra10512j>
- Yuan, Y., Cao, P., Lai, B., Yang, P., & Zhou, Y. (2016). Treatment of ultra-high concentration 2-diazo-4,6-dinitrophenol (DDNP) industry wastewater by the combined Fe/Cu/air and Fenton process. *RSC Advances*, 6(42), 35539–35549. <https://doi.org/10.1039/c6ra05371h>
- Yuan, Y., Lai, B., & Tang, Y. Y. (2016). Combined Fe<sup>0</sup>/air and Fenton process for the treatment of dinitrodiazophenol (DDNP) industry wastewater. *Chemical Engineering Journal*, 283, 1514–1521. <https://doi.org/10.1016/j.cej.2015.08.104>
- Zaher Abdalla, K., & Hammam, G. (2014). Correlation between Biochemical Oxygen Demand and Chemical Oxygen Demand for Various Wastewater Treatment Plants in Egypt to Obtain the Biodegradability Indices. *International Journal of Sciences: Basic and Applied Research*, 13(1), 42–48. <http://gssrr.org/index.php?journal=JournalOfBasicAndApplied>



UNIVERSITAS  
GADJAH MADA

**STUDI KINETIKA PENGOLAHAN LIMBAH CAIR ELEMENTED DETONATOR DENGAN METODE ELEKTRO-FENTON**

Safira Aulia Rinanda, Dr. Joko Wintoko, S.T., M.Sc. ; Ir. Moh Fahrurrozi, M.Sc., Ph.D., IPU.

Universitas Gadjah Mada, 2025 | Diunduh dari <http://etd.repository.ugm.ac.id/>

- Zhang, H., Fei, C., Zhang, D., & Tang, F. (2006). Degradation of 4-nitrophenol in aqueous medium. *Journal of Hazardous Materials*, 227–232. <https://doi.org/10.1016/j.jhazmat.2006.11.016>
- Zhou, M., Yu, Q., Lei, L., & Barton, G. (2007). Electro-Fenton method for the removal of methyl red in an efficient electrochemical system. *Separation and Purification Technology*, 57(2), 380–387. <https://doi.org/10.1016/j.seppur.2007.04.021>