

REFERENCES

- Al-Asheh, S., Bagheri, M., & Aidan, A. (2021). Membrane bioreactor for wastewater treatment: A review. In *Case Studies in Chemical and Environmental Engineering* (Vol. 4). Elsevier Ltd.
<https://doi.org/10.1016/j.cscee.2021.100109>
- Andreini, C., Bertini, I., Cavallaro, G., Holliday, G. L., & Thornton, J. M. (2008). Metal ions in biological catalysis: From enzyme databases to general principles. *Journal of Biological Inorganic Chemistry*, 13(8), 1205–1218.
<https://doi.org/10.1007/s00775-008-0404-5>
- Arockiam JeyaSundar, P. G. S., Ali, A., Guo, di, & Zhang, Z. (2020). Waste treatment approaches for environmental sustainability. *Microorganisms for Sustainable Environment and Health*, 119–135.
<https://doi.org/10.1016/B978-0-12-819001-2.00006-1>
- Botheju, D., & Bakke, R. (2011). Oxygen Effects in Anaerobic Digestion-A Review. In *The Open Waste Management Journal* (Vol. 4).
- Chen, J., Calderone, L. A., Pan, L., Quist, T., & Pandelia, M. E. (2023). The Fe and Zn cofactor dilemma. *Biochimica et Biophysica Acta (BBA) - Proteins and Proteomics*, 1871(5), 140931.
<https://doi.org/10.1016/J.BBAPAP.2023.140931>
- Chi, Z. F., Lu, W. J., Li, H., & Wang, H. T. (2012). Dynamics of CH₄ oxidation in landfill biocover soil: Effect of O₂/CH₄ ratio on CH₄ metabolism. *Environmental Pollution*, 170, 8–14.
<https://doi.org/10.1016/J.ENVPOL.2012.06.005>
- Coccia, C. J. R., Gupta, R., Morris, J., & McCartney, J. S. (2013). Municipal solid waste landfills as geothermal heat sources. In *Renewable and Sustainable Energy Reviews* (Vol. 19, pp. 463–474).
<https://doi.org/10.1016/j.rser.2012.07.028>
- EPA. (2023). *What is a Circular Economy?*
- EPA. (2024a). *Basic Information about Landfill Gas*.
<https://epa.gov/system/files/images/2023->
- EPA. (2024b). *Landfill Basics*. <https://epa.gov/home/fo>
- EPA Victoria. (1684). *Landfill gas fugitive emissions monitoring guideline*.
- Fang, J. J., Yang, N., Cen, D. Y., Shao, L. M., & He, P. J. (2012). Odor compounds from different sources of landfill: Characterization and source identification. *Waste Management*, 32(7), 1401–1410.
<https://doi.org/10.1016/j.wasman.2012.02.013>

- Fany, A., Saputra, B., & Mirwan, D. M. (2018). EVALUASI PENCEMARAN LINDI PADA AIR SUMUR SEKITAR TPA JABON (SIDOARJO). *Jurnal Envirotek*, 10(2), 55–59.
- Farahdiba, A. U., Warmadewanthi, I. D. A. A., Fransiscus, Y., Rosyidah, E., Hermana, J., & Yuniarto, A. (2023). The present and proposed sustainable food waste treatment technology in Indonesia: A review. *Environmental Technology & Innovation*, 32, 103256. <https://doi.org/10.1016/J.ETI.2023.103256>
- Formolo, M. (2010). The Microbial Production of Methane and Other Volatile Hydrocarbons. In *Handbook of Hydrocarbon and Lipid Microbiology* (pp. 113–126). Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-540-77587-4_6
- Hernick, M., & Fierke, C. (2010). Mechanisms of Metal-Dependent Hydrolases in Metabolism. *Comprehensive Natural Products II: Chemistry and Biology*, 8, 547–581. <https://doi.org/10.1016/B978-008045382-8.00178-7>
- ILO-WHO. (2006). *ICSC 0021 - CARBON DIOXIDE*.
- Jiang, J., Wang, F., Wang, J., & Li, J. (2021a). Ammonia and hydrogen sulphide odour emissions from different areas of a landfill in Hangzhou, China. *Waste Management and Research*, 39(2), 360–367. <https://doi.org/10.1177/0734242X20960225>
- Jiang, J., Wang, F., Wang, J., & Li, J. (2021b). Ammonia and hydrogen sulphide odour emissions from different areas of a landfill in Hangzhou, China. *Waste Management and Research*, 39(2), 360–367. <https://doi.org/10.1177/0734242X20960225>
- KOMPAS. (2023). *Waste Management Emergency in Indonesia*. https://www.kompas.id/baca/english/2023/07/28/en-darurat-pengelolaan-sampah-di-indonesia?status=sukses_login&utm_source=kompasid&utm_medium=login_paywall&utm_campaign=login&utm_content=https%3A%2F%2Fwww.kompas.id/baca-english-darurat-pengelolaan-sampah-di-indonesia
- Lee, Y. Y., Jung, H., Ryu, H. W., Oh, K. C., Jeon, J. M., & Cho, K. S. (2018). Seasonal characteristics of odor and methane mitigation and the bacterial community dynamics in an on-site biocover at a sanitary landfill. *Waste Management*, 71, 277–286. <https://doi.org/10.1016/j.wasman.2017.10.037>
- Li, S., Yoo, H. K., Macauley, M., Palmer, K., & Shih, J. S. (2014). Assessing the role of renewable energy policies in landfill gas to energy projects. *Energy Economics*, 49, 687–697. <https://doi.org/10.1016/j.eneco.2015.03.022>

- Long, Y., Fang, Y., Shen, D., Feng, H., & Chen, T. (2016). Hydrogen sulfide (H₂S) emission control by aerobic sulfate reduction in landfill. *Scientific Reports*, 6. <https://doi.org/10.1038/srep38103>
- Luthfiani, N. L., & Atmanti, H. D. (2021). WASTE MANAGEMENT SERVICE IN INDONESIA BASED ON STOCHASTIC FRONTIER ANALYSIS. *Diponegoro University Jl. Prof. Sudarto*, 20(2), 50275.
- Ministry of Environment and Forestry Decree No. 13 Year 1995 about the Unmoved Source Emission (1995).
- Ministry of Public Works and Public Housing. (2021a). *Kurangi Dampak Pencemaran, Kementerian PUPR Selesaikan Sistem Sanitary Landfill TPA Sampah Jabon di Sidoarjo Seluas 5,89 Hektar*.
<https://pu.go.id/berita/kurangi-dampak-pencemaran-kementerian-pupr-selesaikan-sistem-sanitary-landfill-tpa-sampah-jabon-di-sidoarjo-seluas-589-hektar>
- Ministry of Public Works and Public Housing. (2021b). *Tempat Pemrosesan Akhir (TPA) Tahun 2021*.
- Mohammadi Torkashvrad, A., Hashemabadi, D., Kaviani, B., & Sedaghat Hoor, S. (2009). Cane Molasses: An Ammonia Suppressant in the Composting Manure and Municipal Wastes. *Environmental Sciences*, 3(5), 567–573.
www.academicjournals.com
- National Center for Biotechnology Information. (2004). *PubChem Compound Summary for CID 1118, Sulfuric Acid*.
<https://pubchem.ncbi.nlm.nih.gov/compound/Sulfuric-Acid>
- NCBI. (2024). *Carbon Dioxide _ CO₂ _ CID 280 - PubChem*.
- Noor, Z. Z., Yusuf, R. O., Abba, A. H., Abu Hassan, M. A., & Mohd Din, M. F. (2013). An overview for energy recovery from municipal solid wastes (MSW) in Malaysia scenario. *Renewable and Sustainable Energy Reviews*, 20, 378–384.
- Overmeyer, V., Trimborn, M., Clemens, J., Hölscher, R., & Büscher, W. (2023). Acidification of slurry to reduce ammonia and methane emissions: Deployment of a retrofittable system in fattening pig barns. *Journal of Environmental Management*, 331.
<https://doi.org/10.1016/j.jenvman.2023.117263>
- Palmonari, A., Cavallini, D., Sniffen, C., Fernandes, L., Holder, P., Fagioli, L., Fusaro, I., Biagi, G., Formigoni, A., & Mammi, L. (2020). *Short communication: Characterization of molasses chemical composition*.
<https://doi.org/10.3168/jds.2019-17644>
- Pavlostathis, S. G. (2011). Kinetics and Modeling of Anaerobic Treatment and Biotransformation Processes. In *Comprehensive Biotechnology, Second*

Edition (Vol. 6, pp. 385–397). Elsevier Inc. <https://doi.org/10.1016/B978-0-08-088504-9.00385-8>

- Radityaningrum, A. D., Pramestyawati, T. N., Ni'Am, A. C., Wahyudi, E., Aulady, M. F. N., & Hamidah, N. L. (2022). Environmental Assessment Using Integrated Risk Based Approach (IRBA) at Jabon Landfill, Sidoarjo. *IOP Conference Series: Earth and Environmental Science*, 1111(1). <https://doi.org/10.1088/1755-1315/1111/1/012040>
- Rahim, I. R., & Jamaluddin, A. (2015). *Cost Analysis of The Fukuoka Method Landfill System In North Kolaka Regency, Southeast Sulawesi, Indonesia*. <http://publikasiilmiah.ums.ac.id/handle/11617/6307>
- Sabour, M. R., Alam, E., & Hatami, A. M. (2020). Global trends and status in landfilling research: a systematic analysis. *Journal of Material Cycles and Waste Management*, 22(3), 711–723. <https://doi.org/10.1007/S10163-019-00968-5/FIGURES/12>
- Sari, M. M., Septiariva, I. Y., Istanabi, T., Suhardono, S., Sianipar, I. M. J., Tehupeior, A., & Suryawan, I. W. K. (2023). Comparison of Solid Waste Generation During and Before Pandemic Covid-19 in Indonesia Border Island (Riau Islands Province, Indonesia). *Ecological Engineering and Environmental Technology*, 24(2), 251–260. <https://doi.org/10.12912/27197050/157170>
- Shabdin, N. H., Tamunaidu, P., Rambat, S., & Mansor, M. R. (2019). Greenhouse gas emissions trend in old landfill, Malaysia. *Chemical Engineering Transactions*, 72, 211–216. <https://doi.org/10.3303/CET1972036>
- Sokolov, V., Habtewold, J., VanderZaag, A., Dunfield, K., Gregorich, E., Wagner-Riddle, C., Venkiteswaran, J. J., & Gordon, R. (2021). Response Curves for Ammonia and Methane Emissions From Stored Liquid Manure Receiving Low Rates of Sulfuric Acid. *Frontiers in Sustainable Food Systems*, 5. <https://doi.org/10.3389/fsufs.2021.678992>
- Szulc, J., Okrasa, M., Nowak, A., Nizioł, J., Ruman, T., & Kuberski, S. (2022). Assessment of Physicochemical, Microbiological and Toxicological Hazards at an Illegal Landfill in Central Poland. *International Journal of Environmental Research and Public Health*, 19(8). <https://doi.org/10.3390/ijerph19084826>
- Thauer, R. K., Kaster, A. K., Seedorf, H., Buckel, W., & Hedderich, R. (2008). Methanogenic archaea: Ecologically relevant differences in energy conservation. In *Nature Reviews Microbiology* (Vol. 6, Issue 8, pp. 579–591). <https://doi.org/10.1038/nrmicro1931>
- The World Bank. (2019). *Internation Bank For Reconstruction and Development Project Appraisal Document on A Proposed Loan in the Amount of \$100*

Million to the Republic of Indonesia for a Improvement of Solid Waste Management to Support Regional and Metropolitan Cities.

- Yadav, S., Kundu, S., Ghosh, S. K., & Maitra, S. S. (2015). Molecular analysis of methanogen richness in landfill and marshland targeting 16S rDNA sequences. *Archaea*, 2015. <https://doi.org/10.1155/2015/563414>
- Yang, S., Li, L., Peng, X., Zhang, R., & Song, L. (2021). Methanogen Community Dynamics and Methanogenic Function Response to Solid Waste Decomposition. *Frontiers in Microbiology*, 12. <https://doi.org/10.3389/fmicb.2021.743827>
- Yang, Z., Wang, W., He, Y., Zhang, R., & Liu, G. (2018). Effect of ammonia on methane production, methanogenesis pathway, microbial community and reactor performance under mesophilic and thermophilic conditions. *Renewable Energy*, 125, 915–925. <https://doi.org/10.1016/j.renene.2018.03.032>
- Zhang, S., Wang, J., & Jiang, H. (2021). Microbial production of value-added bioproducts and enzymes from molasses, a by-product of sugar industry. *Food Chemistry*, 346, 128860. <https://doi.org/10.1016/J.FOODCHEM.2020.128860>