

## DAFTAR PUSTAKA

- Albuquerque, M. Moreira, G. D. B. Sartor, W. J. Martinez-burgos, T. Scapini, T. Edwiges, C. R. Soccol, A. Bianchi, and P. Medeiros. 2024. "Biohydrogen Produced via Dark Fermentation : A Review." *Methane* 3(3):500–532.
- Amalia, R., N. Sinaga, & S. W. A. Suedy. 2021. *Tinjauan Singkat Teknologi Produksi Biohidrogen Melalui Konversi Biomassa*. Jurnal Reaksi (Journal of Science and Technology), 19(01), 1–9.
- Amanda, R. 2025. *Optimasi Yield Volume Biohidrogen Berbahan Baku Limbah Kulit Pisang Raja (Musa Paradisiaca L) dengan Katalis H<sub>2</sub>O<sub>2</sub>*. Skripsi. Politeknik Negeri Jember
- Amanda, R., A. Y. Z. Suyata, R. M. Saputra, J. A. S. Putra, & Z. Ulma. 2025. *Peningkatan Hasil Produksi Biohidrogen Berbahan Baku Limbah Kulit Pisang Raja dengan Katalis H<sub>2</sub>O<sub>2</sub> Menggunakan Metode Fermentasi Gelap*. Jurnal Ilmiah Teknologi Dan Rekayasa, 30(1), 61–72.
- Anhari, S., S. H. Bintari, I. Mubarak, & D. Susilaningsih. 2016. *Produksi Biohidrogen dari Limbah Organik Cair Molase dan Vinasse Menggunakan Bakteri Rhodobium marinum*. Journal of Life Science, 8(1), 18–24. <http://journal.unnes.ac.id/sju/index.php/LifeSci>
- Anwar, K., F. Istiqamah, & S. Hadi. 2021. *Optimasi Suhu dan Waktu Ekstraksi Akar Pasak Bumi ( Eurycoma longifolia jack .) Menggunakan Metode RSM ( response surface methodology ) dengan Pelarut Etanol 70 %*. Jurnal Pharmascience, 08(01), 53–64.
- Arifin, Z. 2020. *Metodologi Penelitian Pendidikan*. Jurnal Al-Hikmah, 1(1), 1–5.

- Attia, Y. A., M. Samer, M. A. Moselhy, A. H. Arisha, A. A. Abdelqader, & E. M. Abdelsalam. 2021. *Influence of laser photoactivated graphitic carbon nitride nanosheets and nickel nanoparticles on purple non-sulfur bacteria for biohydrogen production from biomass*. Journal of Cleaner Production, 299, 126898. <https://doi.org/10.1016/j.jclepro.2021.126898>
- Dabestani-Rahmatabad, A., G. Capson-Tojo, E. Trably, Delgenès, J.-P., & R. Escudié. 2024. *Assessing the Impact of Organic Loading Rate on Hydrogen Consumption Rates during In Situ Biomethanation*. Journal of Energies, 17(11), 2490. <https://doi.org/10.3390/en17112490>
- Dursun, N., & H. Gülsen. 2024. *Biohydrogen Production from Waste Black Cumin ( Nigella Sativa ) Extract Liquid*. Journal of Bioengineering, 11(282).
- Elwakeel, K. Z., A. M. Elgarahy, H. M. Alghamdi, & M. El-Qelish. 2023. *Recycling of catering waste for sequential production of biohydrogen and biomethane; pre-treatments, batch, and continuous mode studies*. Journal of Environmental Chemical Engineering, 11(5), 110955. <https://doi.org/10.1016/j.jece.2023.110955>
- Erinda, E., & I. W. Widiarti. 2023. *Analisis Tingkat Pencemaran Airtanah Akibat Limbah Vinasse berdasarkan Metode Indeks Pencemaran di Padukuhan Mrisi , Kalurahan Tirtonirmolo , Kapanewon*. Jurnal Lingkungan Kebumihan Indonesia, 1(1), 1–13.
- Istiqomah, N. 2025. *Optimasi Produksi Biohidrogen Melalui Metode Fermentasi Gelap Limbah Kulit Pisang Raja Menggunakan Nanomaterial Sebagai Katalis*. Skripsi. Politeknik Negeri Jember.
- Jhangiani, R. S., C. Cuttler, & D. C. Leighton. 2019. *Research Methods in Psychology*. In *Psychology for Nurses* (4th Americ). Kwantlen Polytechnic University. [https://doi.org/10.5005/jp/books/12408\\_3](https://doi.org/10.5005/jp/books/12408_3)
- Jiao, H., R. Al-Tohamy, F. Li, Schagerl, J. M., Sun, & S. S. Ali. 2024. *Harnessing*

*wastewater-based microalgae for biohydrogen production*. *Journal of Process Safety and Environmental Protection*, 190, 372–385. <https://doi.org/10.1016/j.psep.2024.08.019>

Mishra, S., B. Prabhakar, P. S. Kharkar, & A. M. Pethe. 2023. *Banana Peel Waste : An Emerging Cellulosic Material to Extract Nanocrystalline Cellulose*. *ACS Omega*, 8, 1140–1145. <https://doi.org/10.1021/acsomega.2c06571>

Moll, F., L. Hansen, J. Tix, & N. Tippkötter. 2025. *Enhanced Biohydrogen Production Through Continuous Fermentation of *Thermotoga neapolitana* : Addressing By-Product Inhibition and Cell Viability in Different Bioreactor Modes*. *Journal of Fermentation*, 11(579), 1–21.

Moraes, B. S., M. Zaiat, & A. Bonomi. 2015. *Anaerobic digestion of vinasse from sugarcane ethanol production in Brazil: Challenges and perspectives*. *Journal of Renewable and Sustainable Energy Reviews*, 44, 888–903. <https://doi.org/10.1016/j.rser.2015.01.023>

Mulyadi, A. F., P. A. Damayanti, & Sukardi. 2025. Optimasi Rasio Bahan-Pelarut dan Waktu Ekstraksi Ekstrak Jahe Merah (*Zingiber officinale*) dengan Metode Microwave Assisted Extraction (MAE). *Jurnal Teknologi Pertanian*, 26(2), 135–152.

Norio, N., T. Tajima, M. Kawai, C. Niwa, N. Kurosawa, S. Matsui, T. Toda, and M. Toda. 2022. “Effect of Organic Loading Rate on Biohydrogen Production from Food Waste in a Continuous Stirred Tank Reactor.” *Bioresource Technology*. 104:367–73.

Nouha, K., R. S. Kumar, & R. D. Tyagi. 2016. *Heavy metals removal from wastewater using extracellular polymeric substances produced by *Cloacibacterium normanense* in wastewater sludge supplemented with crude glycerol and study of extracellular polymeric substances extraction by different methods*. *Journal of Bioresource Technology*, 212, 120–129.

<https://doi.org/10.1016/j.biortech.2016.04.021>

Nuraini, A., B. R. Sinatria, N. Zulfa, N. F. Adah, & Z. Ulma. 2024. Potensi Limbah Kulit Pisang sebagai Bahan Baku Biohidrogen dengan Teknik Konsorsium Alami Mikroorganisme. *National Multidisciplinary Sciences UMJember Proceeding Series*, 3(1), 54–62.

Nurkholis, Sarto, & M. Hidayat. 2016. *Pengaruh Hydraulic Retention Time Pada Produksi Biohidrogen dari Sampah Buah Melon (Cucumis melo L.) Menggunakan Reaktor Alir Pipa Secara Kontinyu*. *Jurnal Inovasi Teknik Kimia*, 1(2), 78–83.

Nusaibah, K. Syamsu, & D. Susilaningsih. 2020. *Bio-hydrogen Production from Vinasse By Using Agent of Fermentation Bacteria Rhodobium Marinum*. *Indonesian Journal of Environmental Management and Sustainability*, 4(1), 23–27.

Orhorhoro, E. K., P. O. Ebunilo, & G. E. Sadjere. 2017. *Experimental Determination of Effect of Total Solid (TS) and Volatile Solid (VS) on Biogas Yield*. *American Journal of Modern Energy*, 3(6). <https://doi.org/10.11648/j.ajme.20170306.13>

Paramarta, A. Z. 2016. *Efektivitas Organic Loading Rate Terhadap Penyisihan Bahan Organik dengan Media Arang Tempurung Kelapa (Cocos nucifera) pada Reaktor Anaerobik Kontinyu*. Skripsi. Universitas Airlangga.

Putra, A. M. 2010. *Analisis Produktifitas Gas Hidrogen dan Gas Oksigen pada Elektrolisis Larutan KOH*. *Jurnal Neutrino*, 2(2), 141–154.

Qu, X., H. Zeng, Y. Gao, T. Mo, & Y. Li. 2022. *Bio-hydrogen production by dark anaerobic fermentation of organic wastewater*. *Journal of Frontiers in Chemistry*, 10. <https://doi.org/10.3389/fchem.2022.978907>

Rachman, F., B. K. Wiro, T. A. Setiawan, & P. Nurkholies. 2020. *Penerapan Metode Taguchi untuk Optimasi Setting Parameter CNC Milling Terhadap Kekasaran Permukaan Material*. *Jurnal Teknologi Dan Rekayasa Manufaktur*, 2(2), 49–60.

Radiena, M. S. Y. 2016. *Umur Optimum Panen Pisang Kepok (Musa paradisiaca, L) terhadap Mutu Tepung Pisang*. *Indonesian Journal of Industrial Research*, 12(2), 27–33.

Rashidi, M., N. Alavi, F. Amereh, M. Rafiee, N. Amanidaz, K. Partovi, S. Mosanefi, & R. Bakhshoodeh. 2024. *Biohydrogen production from co-digestion of sugarcane vinasse and bagasse using anaerobic dark fermentation*. *Journal of Bioresource Technology Reports*, 25, 101793. <https://doi.org/10.1016/j.biteb.2024.101793>

Ratnawati, S. E., N. Ekantari, R. W. Pradipta, & B. L. Paramita. 2018. *Aplikasi Response Surface Methodology (RSM) pada Optimasi Ekstraksi Kalsium Tulang Lele*. *Jurnal Perikanan Universitas Gadjah Mada*, 1, 41–48.

Safarudin, L., & Syahrul. 2023. *Eksplorasi Potensi Energi Hidrogen di Sektor Industri. Prosiding Seminar Nasional Pemanfaatan Sains Dan Teknologi Informasi*, 1(1), 567–580.

Saru, R. 2024. *Potensi ekonomi Kulit Pisang: dari Limbah Menjadi Produk Bernilai Tinggi*. Kompasiana. <https://www.kompasiana.com/regas87/6715923234777c5a576f8762/potensi-ekonomi-kulit-pisang-dari-limbah-menjadi-produk-bernilai-tinggi>

Sinaga, N., & M.Farizan Praevia. 2022. *Pengaruh Variasi Organic Loading Rate Limbah Buah Jeruk Terhadap Konversi Biohidrogen pada Reaktor Kontinyu Sirkulasi*. *Jurnal Metana*, 18(2), 77–82.

<https://doi.org/10.14710/metana.v18i2.46418>

Siregar, T. M., E. N. Situngkir, J. J. P. M. K. Aulia, & R. N. Ramadhani. 2023. *Memprediksi Tingkat Pengangguran di Kota Medan dengan Model Regresi Non-Linier Kuadratik*. *Journal of Social Research*, 3(2), 8661–8670.

Sivagurunathan, P., G. Kumar, P. Bakonyi, S.-H. Kim, T. Kobayashi, K.-Q. Xu, A.-M. Lakaniemi, J. A. Puhakka, N. Nemestóthy, & K. Bélafi-Bakó. 2021. *Continuous biohydrogen production from food waste: A review on recent modifications and the Way Forward*. *Journal of Fuel*, 286, 119337.

Soares, J. F., T. C. Confortin, I. Todero, F. D. Mayer, & M. A. Mazutti. 2020. *Dark fermentative biohydrogen production from lignocellulosic biomass: Technological challenges and future prospects*. *Journal of Renewable and Sustainable Energy Reviews*, 117, 109484. <https://doi.org/10.1016/j.rser.2019.109484>

Sogo, S. H., I. Kurniasari, & S. Sutoyo. 2018. *Pengaruh Penambahan Limbah Kulit Pisang kepok (Musa paradisiaca Linn) dalam Pembuatan Kerupuk*. *Jurnal Agriekstensia*, 17(1), 77–81. <https://doi.org/10.34145/agriekstensia.v17i1.76>

Srivastava, N., M. Srivastava, E. F. Abdullah, R. Singh, A. Hashem, & V. K. Gupta. 2021. *Biohydrogen production using kitchen waste as the potential substrate: A sustainable approach*. *Journal of Chemosphere*, 271, 129537. <https://doi.org/10.1016/j.chemosphere.2021.129537>

Suhari, D. K., & P. Pujiastuti. 2020. *Analisis Chemical Oxygen Demand ( COD ) Air Limbah Tinta Industri Percetakan Menggunakan Metode Titrimetri*. *Jurnal Kimia Dan Rekayasa*, 1(1), 24–31.

Syauqi, A., I. R. Kusumawardhany, & L. U. Widodo. 2018. *Produksi Gas Hidrogen*

dari Biomassa dengan Proses Anaerob. *Jurnal Teknik Kimia*, 13(1), 17–21.  
[https://doi.org/10.33005/jurnal\\_tekkim.v13i1.1147](https://doi.org/10.33005/jurnal_tekkim.v13i1.1147)

Ulma, Z., N. Faizin, Y. Hananto, & Qanitah. 2024. Optimization of Biohydrogen Production from *Vinasse* and Cow Manure Using the Response Surface Method (RSM). *IOP Conference Series: Earth and Environmental Science*, 1338(1).  
<https://doi.org/10.1088/1755-1315/1338/1/012062>

Valentino, N., Z. D. Hastuti, & A. Wibowo. 2020. *Pengaruh Suhu Terhadap Proses Produksi Biohidrogen dari Hasil fermentasi Palm Oil Mill Effluent (POME)*. *Jurnal Energi Dan Lingkungan*, 13(2), 43–46.

Wang, C., Y. Yang, Y. Ma, & X. Zhu. 2021. *Experimental study on the composition evolution and selective separation of biomass pyrolysis vapors in the four-staged indirect heat exchangers*. *Journal of Bioresource Technology*, 332, 125115.  
<https://doi.org/10.1016/j.biortech.2021.125115>

Wibowo, A. 2017. *Pemanfaatan Palm Oil Mill Effluent (POME) Sebagai Substrat Pertumbuhan Mikroba Mix Culture Penghasil Biohidrogen*. Skripsi. Universitas Islam Negeri Syarif Hidayatullah.

Wibowo, N. A., & E. B. Tjahjana. 2014. *Pengembangan Energi Alternatif Biohidrogen Berbasis Biomassa Limbah Kakao dan Kopi*. *Jurnal Sirinov*, 2(2), 113–122.

Yagmur Goren, A., & I. Dincer. 2025. *Emerging trends of biohydrogen ecosystem on environmental sustainability: A case study*. *Journal of Environmental Chemical Engineering*, 13(1). <https://doi.org/10.1016/j.jece.2024.115212>

Yani, S., N. Nurjannah, & M. Muhlis. 2022. *Produksi Biohidrogen dari Sampah Organik Kulit Pisang dengan cara Fermentasi Anaerob dengan Peninjauan Analisa Ekonomi Sederhana*. *Journal of Chemical Process Engineering*, 7(1), 53–

57. <https://doi.org/10.33536/jcpe.v7i1.1152>

Yuliatun, S., & F. B. I. Akbar. 2022. *Effect of Fresh Vinasse Application on Soil Chemical Characteristics*. Indonesian Sugar Research Journal, 2(2), 67–78. <https://doi.org/10.54256/isrj.v2i2.80>

Zhang, Q., S. Zhu, Z. Zhang, H. Zhang, & C. Xia. 2021. *Enhancement strategies for photo-fermentative biohydrogen production: A review*. Journal of Bioresource Technology, 340, 125601. <https://doi.org/10.1016/j.biortech.2021.125601>

Zhu, H., W. Parker, R. Basnar, A. Proracki, P. Falletta, & P. Seto. 2008. *Biohydrogen Production by Anaerobic Co-digestion of Municipal Food Waste and Sewage Sludges*. International Journal of Hydrogen Energy, 33, 3651–3659. <https://doi.org/10.1016/j.ijhydene.2008.04.040>