DAFTAR PUSTAKA

Aditia, A. (2020). Pengolahan Air Limbah Menggunakan Bioreaktor Membran (BRM). *Jurnal Ilmiah Maksitek*, *5*(4), 5–24.

Adriansyah, E., Marhadi, M., Herawati, P., Viareco, H., Sufra, R., & Emilia Agustina, T. (2023). Advanced Treatment of Tofu Wastewater using Multilevel Filtration and TiO2 Photocatalysis as Promising Approach for Effective Wastewater Remediation. *Jurnal Presipitasi : Media Komunikasi Dan Pengembangan Teknik Lingkungan*, *20*(3), 560–571. https://doi.org/10.14710/presipitasi.v20i3.560-571

Ahmad, T., Belhaj, H., Al-Muhtaseb, A. H. (2020). Adsorption of emerging organic contaminants by activated carbon from wastewater: A review. *Environmental Technology & Innovation*.

Andriambahiny, R. N. (2025). A review on the recent advancement of acid modified bio-adsorbents for the removal of methyl orange dye from wastewater treatment. *Discover Chemistry*, *92*.

Anna Tałałaj, I., Bartkowska, I., & Biedka, P. (2021). Treatment of young and stabilized landfill leachate by integrated sequencing batch reactor (SBR) and reverse osmosis (RO) process. *Environmental Nanotechnology, Monitoring and Management*, *16*(January). https://doi.org/10.1016/j.enmm.2021.100502

Ardiansyah, Y. F., & Mirwan, M. (2024). *Eco Enzim sebagai Larutan Pendukung untuk Menurunkan TSS dan COD Pada Air Limbah Tahu dengan Proses Anaerob*. *IX*(2), 9023–9029.

Aritonang, B., Ritonga, A. H., Harefa, K., & H, H. (2025). Reduction of BOD, COD, and TSS in Textile Wastewater Using Bentonite Activated Charcoal Adsorbent. *Jurnal Farmasimed (Jfm)*, *7*(2), 381–389. https://doi.org/10.35451/jfm.v7i2.2699

Aviliani, D., Sari, F. I. P., & Mahardika, R. G. (2022). The Effectiveness of Pandan Sea (Pandanus Tectorius) Cellulose Active Charcoal in Reducing BOD, COD, TSS Level's in Liquid Waste Tapioca. *Stannum : Jurnal Sains Dan Terapan Kimia*, *4*(2), 52–59. https://doi.org/10.33019/jstk.v4i2.3326

Babaei, A. A., & Ghanbari, F. (2016). COD removal from petrochemical wastewater by UV/hydrogen peroxide, UV/persulfate and UV/percarbonate: Biodegradability improvement and cost evaluation. *Journal of Water Reuse and Desalination*, *6*(4), 484–494. https://doi.org/10.2166/wrd.2016.188

Beidaghdar, M., Fataei, E., Khanizadeh, B., & Imani, A. A. (2023). Phenol removal from aqueous solution using advanced oxidation process enabled by a hybrid system: UV/H_2O_2/O_3/TiO_2. *Materials and Green Chemistry*. https://doi.org/10.3233/MGC-230039

Chuppa Tostain G, Tan M, Adelard L, ShumCheong-Sing A, François JM, C. Y., & T, P. (2020). Evaluation of filamentous fungi and yeasts for the biodegradation of sugarcane distillery wastewater. *Microorganisms*, *8(10)*, 1–16.

Dewi, R., Dan, A., & Nofriadi, I. (2020). Aktivasi Karbon Dari Kulit Pinang Dengan Menggunakan Aktivator Kimia Koh. *Jurnal Teknologi Kimia Unimal*, *9(2)*, 12–22.

Eddy, M. &. (2014). Wastewater Engineering: Treatment and Resource Recovery. *5th Edition, McGraw-Hill, New York.*

Fessenden, R. J. F. & J. S. (1982). *Organic Chemistry Second Edition*.

Ghosh, N. (2016). *Predicting the products of reaction between ammonia and hydrogen peroxide*. Organic Chemistry. https://chemistry.stackexchange.com/questions/41838/predicting-the-products-of-reaction-between-ammonia-and-hydrogen-peroxide?

Hakika DC, Sarto S, Mindaryani A, H. M. (2019). Decreasing COD in sugarcane vinasse using the fenton reaction : The effect of processing parameters. *Catalysts*, *9(11)*, 881.

Hendrasarie, N., & Febriana, F. (2022). Efektivitas Penambahan Serabut Kelapa Dan Kulit Buah Siwalan Sebagai Adsorben Dan Media Lekat Biofilm Pada Pengolahan Limbah Domestik Menggunakan Sequencing Batch Reactor. *Jurnal Envirotek*, *14*(1), 98–105. https://doi.org/10.33005/envirotek.v14i1.182

Hendrasarie, N., Ramadhani, A. N., Rosariawari, F., & Amalia, A. (2025). Hybrid

Biofilter-Adsorption Performance to Removal Organic Matter and Color on Black Soybean Sauce Wastewater. *IOP Conference Series: Earth and Environmental Science*, *1454*(1). https://doi.org/10.1088/1755-1315/1454/1/012030

Henggu, K. U., Lapu, R. U., Takanjanji, P., Djawa, R. F. N., Lingga, S. R., Abbas, S., Ngunju, H. H., Willy, I. R., & Nalu, N. T. (2022). Modifikasi Kitosan Dari Limbah Cangkang Kepiting Sebagai Sediaan Material Membran Filtrasi Air. *Jambura Fish Processing Journal*, *4*(2), 72–82. https://doi.org/10.37905/jfpj.v4i2.13807

Hodge, J. E. (1953). Dehydrated Foods, Chemistry of Browning Reactions in Model Systems. *Ournal of Agricultural and Food Chemistry*, *1(15)*, 926–943.

Hossain, A. K. M. N. U., Sela, S. K., Saha, S., Das, A., Iqbal, S. F., & Hassan, M. N. (2018). Treatment of textile waste water using natural catalyst (chitosan and microorganism). *Journal of Textile Engineering & Fashion Technology*, *4*(5), 320–325. https://doi.org/10.15406/jteft.2018.04.00159

Hosseinzadeh Beiragh, H., Samipourgiri, M., Rashidi, A., Ghasemi, M., & Pakseresht, S. (2024). Crab shell-based hierarchical micro/meso-porous carbon as an efficient nano-adsorbent for CO2/CH4 separation: experiments and DFT modeling. *Scientific Reports*, *14*(1), 1–16. https://doi.org/10.1038/s41598-024-69565-3

Ito, K., & Matsuyama, A. (2021). Koji Molds for Japanese Soy Sauce Brewing: Characteristics and Key Enzymes. *Journal of Fungi*, *7(8)*, 641.

Jack B.Evett, C. L. (1987). Fundamentals of Fluids Mechanics. In *McGraw Hill*.

Jumiati, E., & Nanda, M. (2024). Pemurnian Minyak Goreng Jelantah Menggunakan Karbon Aktif Tempurung Kelapa dengan Aktivasi Fisika. *Jurnal Fisika Unand*, *13*(2), 254–260. https://doi.org/10.25077/jfu.13.2.254-260.2024

Khopsoh, B., Diyaningsih, M. V., & Haryuni, N. (2022). Penggunaan H2O2 (Hidrogen Peroksida) untuk Mengurangi Kadar Coliform Air Pada Peternakan Ayam Petelur di Kabupaten Blitar. *Briliant: Jurnal Riset Dan Konseptual*, *7*(1), 187. https://doi.org/10.28926/briliant.v7i1.802

Lestari, R. S. D., Sari, D. K., Rosmadiana, A., & Dwipermata, B. (2016). Pembuatan Dan Karaktersasi Karbon Aktif Tempurung Kelapa Dengan Aktivator Asam Fosfat Serta Aplikasinya Pada Pemurnian Minyak Goreng Bekas. *Teknika: Jurnal Sains Dan Teknologi*, *12*(2), 419. https://doi.org/10.36055/tjst.v12i2.6607

Liakos, T. I., & Lazaridis, N. K. (2016). Melanoidin removal from molasses effluents by adsorption. *Journal of Water Process Engineering*, *10*, 156–164.

Liu, Y., Wang, Y. (2019). Optimization of organics to nutrients (COD:N:P) ratio for aerobic granular sludge treating high-strength organic wastewater. *Environmental Technology & Innovation*, *16*. https://doi.org/10.1016/j.eti.2019.100484

Lutfi Nurohmah Paradila, Apriliani Wulandari, R. F. (2019). Kemampuan Adsorpsi Logam Berat Cu Dan Pb Dengan Menggunakan Adsorben Kulit Jagung (Zea Mays) Adsorption Ability Of Cu And Pb Heavy Metal Using Corn Skin Adsorben (Zea Mays). *Jurnal Chemurgy*, *3(2)*.

M. Geetha Devi, J.J. Dumaran, S. F. (2012). Dairy wastewater treatment using low molecular weight crab shell chitosan. *J. Inst. Eng. Ser. E*, *9(3)*, 9–14.

Mahmoud, M. E. M., Abd El-Razek, T. A. M., Abd El- Rahman, H. S., & Saad, M. A. (2021). Enhancing Effluent Quality of Wastewater Treatment Plants Using Advanced Oxidation Process. *Journal of Environmental Science*, *50*(10), 543–578. https://doi.org/10.21608/jes.2021.206547

Maulidifa, N. A., & Hidayah, E. N. (2024). Pengaruh Waktu Pengadukan Biosorben Cangkang Maggot dalam Menyisihkan Ion Fe. *Jurnal Serambi Engineering*, *IX*(2), 9040–9044.

Melani, A., Robiah, & Pratama, P. (2023). Limbah Cangkang Kepiting sebagai Biokoagulan pada Sistem Water Treatment (Kajian Pengaruh Variasi Jenis dan Konsentrasi Koagulan, Kecepatan Pengadukan). *Jurnal Inovator*, *6*(2), 50–55. www.ojs.politeknikjambi.ac.id/index/inovator

Mulder, M. (1996). *Basic Principles of Membrane Technology*. Springer Science & Business Media.

Mulyani, H., Budianto, G. P. I., Margono, M., & Kaavessina, M. (2019). Study of

COD Removal Rate on a Sequencing Batch Reactor (SBR) Treating Tapioca Wastewater. *AgriTECH*, *38*(3), 243. https://doi.org/10.22146/agritech.29271

N. Wang, T. Zheng, G. Zhang, P. W. (2016). A review on Fenton-like processes for organic wastewater treatment. *J. Environ. Chem. Eng.*, *4(1)*, 762–787.

Nuba, D. D. (2016). AERATION TIME VARIATION IN THE TREATMENT OF WASTEWATER INDUSTRIAL SOY AND SAUCE. *Jurnal Gloria Justitia*.

Nursten, H. (2005). The Maillard Reaction: Chemistry, Biochemistry, and Implications. *Royal Society of Chemistry*.

Oktaviani, Z., & Hendrasarie, N. (2024). *Efektivitas Konsorsium Mikroalga Chlorella sp . dan Mikroba Indigenous Dalam Menurunkan BOD , COD , dan TN Air Limbah Industri Kecap Menggunakan MBBR*. *IX*(4), 10724–10730.

Pandharipande, S. L., Bhagat, P. H., Professor, A., Tech, B., & Semester, th. (2016). Synthesis of Chitin from Crab Shells and its Utilization in Preparation of Nanostructured Film. *International Journal of Science, Engineering and Technology Research (IJSETR)*, *5*(5), 2278–7798.

Permatasari, T., Rahman, A., Ruhaini, Arifuddin, M. R., Firmansyah, A. D., Rahmayanti, A., Sumiyarsono, E., & Afkar, K. (2023). Penyisihan BOD, COD, TSS, dan TDS Menggunakan Adsorben Lumpur Lapindo dan Cangkang Kerang Darah pada Limbah Tekstil Jetis Sidoarjo. *Journal of Research and Technology*, *9*(2), 245–251.

Poltak, R. F. (2005). Sequencing Batch Reactor Design and Operational Considerations Manual. *New England Interstate Water Pollution Control Commission: Massachusetts, USA*.

Pramesti, H. N. (2022). Potensi Limbah Cangkang Kepiting dan Kulit Udang Sebagai Masker Berlapis Chitosan Polymer Medium (CPM) Pereduksi Asap Rokok. In *skripsi teknik lingkungan*.

Q. Zhang, C. Wang, Y. L. (2016). Fenton’s oxidation kinetics, pathway, and toxicity evaluation of diethyl phthalate in aqueous solution. *J. Adv. Oxid. Technol.*, *19(1)*, 125–133.

Rais, D. R., & Setiawan, O. (2024). Pengolahan limbah cair industri sarung dengan metode fenton Treatment of sarong industrial liquid waste by fenton method.

Jurnal Integrasi Proses Dan Lingkungan, *1*(2), 55–61. http://ejournal.ft.umg.ac.id/index.php/jtk

Rame, N. I. H. (2018). Reuse Air Limbah Industri Kecap dengan Teknologi Mobile Ozonasi Katalitik (E-Sikat) dan Filtrasi secara Realtime dan Online. *Balai Besar Teknologi Pencegahan Pencemaran Industri*.

Reynolds, T. D. (1982). Unit operations and processes in environmental engineering. In *Monterey, Calif. : Brooks/Cole, Engineering Division*.

Riztu, S., Pradita, N. A., Sufra, R., Adriansyah, E., Luter, P. T. Z., Suzana, A., Satria, A. W., & Sanjaya, A. (2024). *Penurunan Kadar COD Air Limbah Domestik Menggunakan Fly Ash d engan Metode Adsorpsi*. *24*(3), 2570–2574. https://doi.org/10.33087/jiubj.v24i3.5677

Rosydi, H. A., Ali, M., & Jawwad, M. A. S. (2024). Efektivitas proses aerasi dan penggunaan adsorben cangkang telur bebek & kepiting dalam penurunan Fe, Mn, TDS, TOC pada air tanah. *Jurnal Serambi Engineering*, *IX*(3), 9425–9433.

S.J. Sreeja, K. Tamilarutselvi, A. Tamilselvi, K.P. Sarojini, K.J. Jasmin, M. M. M. (2023). Production of chitin and conversion into chitosan from crab (Scylla tranquebarica) shells and evaluation of its antioxidant activities. *Biomass Convers. Biorefinery*.

Said, N. I. (2017). Teknologi Pengolahan Air Limbah : Teori dan Aplikasi. *Erlangga*.

Santi, D. A. (2021). Penanganan limbah cair kecap dengan pengendapan menggunakan koagulan tawas : studi kasus di PT Wowin Purnomo, Trenggalek, Jawa Timur. *Sarjana Thesis, Universitas Brawijaya.*

Setiaty Pandia, Astri Devi Yunita Siahaan, & Anita Tiurmaida Hutagalung. (2017). PEMANFAATAN ADSORBEN DARI KULIT BUAH KAKAO (Theobroma cacao l.) UNTUK MENURUNKAN CHEMICAL OXYGEN DEMAND PADA PALM OIL MILL EFFLUENT. *Jurnal Teknik Kimia USU*, *6*(3), 34–40. https://doi.org/10.32734/jtk.v6i3.1587

Setyorini, D., Arninda, A., Syafaatullah, A. Q., & Panjaitan, R. (2023). Penentuan Konstanta Isoterm Freundlich dan Kinetika Adsorpsi Karbon Aktif Terhadap

Asam Asetat. *Eksergi*, *20*(3), 149. https://doi.org/10.31315/e.v20i3.10835

Shivraj., Quraishi, W and Basu, S. (2023). A Comprehensive Review on the Progress of Coagulation for Natural Organic Matter Removal in Water Treatment. *Jurnal Penelitian Dan Pengkajian Ilmu Pendidikan E-Saintika*, *7(2)*, 1–32.

Shurtleff, W., & Aoyagi, A. (2012). History of Koji – Grains and/or Soybeans Enrobed with a Mold Culture (300 BCE to 2012). *Soyinfo Center*.

Siswoyo, E., Zahra, R. N., Mai, N. H. A., Nurmiyanto, A., Umemura, K., & Boving, T. (2023). Chitosan of blood cockle shell (Anadara granosa) as a natural coagulant for removal of total suspended solids (TSS) and turbidity of well-water. *Egyptian Journal of Aquatic Research*, *49*(3), 283–289. https://doi.org/10.1016/j.ejar.2023.04.004

Skudaev, Solomonov, Morozovskii, I. (2008). Oxidation of hydrogen chloride with hydrogen peroxide in aqueous solution. *Russian Journal of Applied Chemistry*, *81(1)*, 14–16.

Soroosh, H., Otterpohl, R., & Hanelt, D. (2022). Influence of hydraulic retention time on municipal wastewater treatment using microalgae-bacteria flocs in sequencing batch reactors. *Bioresource Technology Reports*. https://doi.org/10.1016/j.biteb.2021.100884

Sperling, M. (2007). Biological Wastewater Treatment Series. Vol. 5: Activated Sludge and Aerobic Biofilm Reactors. *IWA Publishing, London.*

Steinkraus, K. H. (1996). Handbook of Indigenous Fermented Foods (2nd ed.). *CRC Press*.

Tang, J.-Y. Y.-S. X. a. M.-X. L. R. J. L.-S. Z. B.-H. F. (2023). Hyperbranched polyethyleneimine-functionalised chitosan aerogel for highly efficient removal of melanoidins from wastewater. *Journal of Hazardous Materials*, *447*. https://www.sciencedirect.com/science/article/abs/pii/S0304389423000134?via%3Dihub

Thapeetha, Y., Digamadulla, S., Sashikesh, G., & Kuganathan Sivashanthini. (2020). Determination of chitin content in shells of selected crab species

available in Jaffna. *Vingnanam Journal of Science* , *15*(1), 15–18. https://www.researchgate.net/publication/353014367_Determination_of_chitin_content_in_shells_of_selected_crab_species_available_in_Jaffna

Tünay, O. (2010). Chemical Oxidation Applications for Industrial Wastewaters. In *Water Intelligence Online* (Vol. 9). https://doi.org/10.2166/9781780401416

Ursada, R., Alfani, Z. J., & Bagastyo, A. Y. (2023). *Treatment of leachate from Bantargebang Landfill using oxidation process with H 2 O 2*. *7*(2).

Vida, F. & Hendrasarie, N. . (2023). Spent Bleaching Earth sebagai Adsorben untuk Menyisihkan Krom dan Warna pada Limbah Cair Batik. *Jurnal Serambi Engineering*, *9*(1), 7642–7653. https://doi.org/10.32672/jse.v9i1.722

Willy, T. A. E. D., & Mukono, J. (2023). Pengolahan Air Limbah Proses Utama Menggunakan Wastewater Treatment Plant pada PT. Indonesia Power Grati POMU. *Media Gizi Kesmas*, *12*(1), 66–74. https://doi.org/10.20473/mgk.v12i1.2023.66-74

Wiranatha IG, Aryasih IG, P. DA. (2014). Pengaruh Lama Kontak Hidrogen PeroksidA terhadap Keluhan Subyektif Pengrajin Lontar. *Jurnal Kesehatan Lingkungan*, *4*(1), 61–69. http://poltekkes-denpasar.ac.id/files/JURNAL KESEHATAN LINGKUNGAN/I Gede Pandu Wiranatha1, I Gusti Ayu Made Aryasih2,.pdf

Wu, S. X., & Maskaly, J. (2018). Study on the effect of total dissolved solids (TDS) on the performance of an SBR for COD and nutrients removal. *Jurnal Ilmu Lingkungan Kesehatan Zat Berbahaya Toksin Lingkungan*. https://pubmed.ncbi.nlm.nih.gov/29111848/

Yadaturrahmah, I. I. (2020). Pengaruh Penambahan Impeller Pada Fase Aerobik Terhadap Efisiensi Kinerja Sequencing Batch Reactor Pada Limbah Cair Industri Tahu. *Universitas Pembangunan Nasional "Veteran" Jawa Timur*.

Yasmin, H. Z. (2023). Efektivitas Kombinasi Konsentrasi Hidrogen Peroksida (H2O2) Dan Waktu Kontak Sinar Ultraviolet-C Terhadap Penurunan Bakteri Coliform Pada Limbah Cair Rs Pku Muhammadiyah Surakarta. *Jurnal Kesehatan Masyarakat*, *11*(1), 72–82. https://doi.org/10.14710/jkm.v11i1.34578

Yospy Guntur, A. D., Wibowo Jati, A. N., & Indah Murwani Yulianti, L. (2017). *PERBAIKAN KUALITAS LIMBAH CAIR INDUSTRI KECAP DAN SAOS PT. LOMBOK GANDARIA DENGAN VARIASI BAKTERI INDIGENUS Quality Improvement of Ketchup and soy Sauce's Industrial Liquid Waste in PT. Lombok Gandaria with Indigenous Bacteria Variance*.

Aditia, A. (2020). Pengolahan Air Limbah Menggunakan Bioreaktor Membran (BRM). *Jurnal Ilmiah Maksitek*, *5*(4), 5–24.

Adriansyah, E., Marhadi, M., Herawati, P., Viareco, H., Sufra, R., & Emilia Agustina, T. (2023). Advanced Treatment of Tofu Wastewater using Multilevel Filtration and TiO2 Photocatalysis as Promising Approach for Effective Wastewater Remediation. *Jurnal Presipitasi : Media Komunikasi Dan Pengembangan Teknik Lingkungan*, *20*(3), 560–571. https://doi.org/10.14710/presipitasi.v20i3.560-571

Ahmad, T., Belhaj, H., Al-Muhtaseb, A. H. (2020). Adsorption of emerging organic contaminants by activated carbon from wastewater: A review. *Environmental Technology & Innovation*.

Andriambahiny, R. N. (2025). A review on the recent advancement of acid modified bio-adsorbents for the removal of methyl orange dye from wastewater treatment. *Discover Chemistry*, *92*.

Anna Tałałaj, I., Bartkowska, I., & Biedka, P. (2021). Treatment of young and stabilized landfill leachate by integrated sequencing batch reactor (SBR) and reverse osmosis (RO) process. *Environmental Nanotechnology, Monitoring and Management*, *16*(January). https://doi.org/10.1016/j.enmm.2021.100502

Ardiansyah, Y. F., & Mirwan, M. (2024). *Eco Enzim sebagai Larutan Pendukung untuk Menurunkan TSS dan COD Pada Air Limbah Tahu dengan Proses Anaerob*. *IX*(2), 9023–9029.

Aritonang, B., Ritonga, A. H., Harefa, K., & H, H. (2025). Reduction of BOD, COD, and TSS in Textile Wastewater Using Bentonite Activated Charcoal Adsorbent. *Jurnal Farmasimed (Jfm)*, *7*(2), 381–389. https://doi.org/10.35451/jfm.v7i2.2699

Aviliani, D., Sari, F. I. P., & Mahardika, R. G. (2022). The Effectiveness of Pandan

Sea (Pandanus Tectorius) Cellulose Active Charcoal in Reducing BOD, COD, TSS Level's in Liquid Waste Tapioca. *Stannum : Jurnal Sains Dan Terapan Kimia*, *4*(2), 52–59. https://doi.org/10.33019/jstk.v4i2.3326

Babaei, A. A., & Ghanbari, F. (2016). COD removal from petrochemical wastewater by UV/hydrogen peroxide, UV/persulfate and UV/percarbonate: Biodegradability improvement and cost evaluation. *Journal of Water Reuse and Desalination*, *6*(4), 484–494. https://doi.org/10.2166/wrd.2016.188

Beidaghdar, M., Fataei, E., Khanizadeh, B., & Imani, A. A. (2023). Phenol removal from aqueous solution using advanced oxidation process enabled by a hybrid system: UV/H_2O_2/O_3/TiO_2. *Materials and Green Chemistry*. https://doi.org/10.3233/MGC-230039

Chuppa Tostain G, Tan M, Adelard L, ShumCheong-Sing A, François JM, C. Y., & T, P. (2020). Evaluation of filamentous fungi and yeasts for the biodegradation of sugarcane distillery wastewater. *Microorganisms*, *8(10)*, 1–16.

Dewi, R., Dan, A., & Nofriadi, I. (2020). Aktivasi Karbon Dari Kulit Pinang Dengan Menggunakan Aktivator Kimia Koh. *Jurnal Teknologi Kimia Unimal*, *9(2)*, 12–22.

Eddy, M. &. (2014). Wastewater Engineering: Treatment and Resource Recovery. *5th Edition, McGraw-Hill, New York.*

Fessenden, R. J. F. & J. S. (1982). *Organic Chemistry Second Edition*.

Ghosh, N. (2016). *Predicting the products of reaction between ammonia and hydrogen peroxide*. Organic Chemistry. https://chemistry.stackexchange.com/questions/41838/predicting-the-products-of-reaction-between-ammonia-and-hydrogen-peroxide?

Hakika DC, Sarto S, Mindaryani A, H. M. (2019). Decreasing COD in sugarcane vinasse using the fenton reaction : The effect of processing parameters. *Catalysts*, *9(11)*, 881.

Hendrasarie, N., & Febriana, F. (2022). Efektivitas Penambahan Serabut Kelapa Dan Kulit Buah Siwalan Sebagai Adsorben Dan Media Lekat Biofilm Pada Pengolahan Limbah Domestik Menggunakan Sequencing Batch Reactor.

Jurnal Envirotek, *14*(1), 98–105. https://doi.org/10.33005/envirotek.v14i1.182

Hendrasarie, N., Ramadhani, A. N., Rosariawari, F., & Amalia, A. (2025). Hybrid Biofilter-Adsorption Performance to Removal Organic Matter and Color on Black Soybean Sauce Wastewater. *IOP Conference Series: Earth and Environmental Science*, *1454*(1). https://doi.org/10.1088/1755-1315/1454/1/012030

Henggu, K. U., Lapu, R. U., Takanjanji, P., Djawa, R. F. N., Lingga, S. R., Abbas, S., Ngunju, H. H., Willy, I. R., & Nalu, N. T. (2022). Modifikasi Kitosan Dari Limbah Cangkang Kepiting Sebagai Sediaan Material Membran Filtrasi Air. *Jambura Fish Processing Journal*, *4*(2), 72–82. https://doi.org/10.37905/jfpj.v4i2.13807

Hodge, J. E. (1953). Dehydrated Foods, Chemistry of Browning Reactions in Model Systems. *Ournal of Agricultural and Food Chemistry, 1(15)*, 926–943.

Hossain, A. K. M. N. U., Sela, S. K., Saha, S., Das, A., Iqbal, S. F., & Hassan, M. N. (2018). Treatment of textile waste water using natural catalyst (chitosan and microorganism). *Journal of Textile Engineering & Fashion Technology*, *4*(5), 320–325. https://doi.org/10.15406/jteft.2018.04.00159

Hosseinzadeh Beiragh, H., Samipourgiri, M., Rashidi, A., Ghasemi, M., & Pakseresht, S. (2024). Crab shell-based hierarchical micro/meso-porous carbon as an efficient nano-adsorbent for CO2/CH4 separation: experiments and DFT modeling. *Scientific Reports*, *14*(1), 1–16. https://doi.org/10.1038/s41598-024-69565-3

Ito, K., & Matsuyama, A. (2021). Koji Molds for Japanese Soy Sauce Brewing: Characteristics and Key Enzymes. *Journal of Fungi*, *7(8)*, 641.

Jack B.Evett, C. L. (1987). Fundamentals of Fluids Mechanics. In *McGraw Hill*.

Jumiati, E., & Nanda, M. (2024). Pemurnian Minyak Goreng Jelantah Menggunakan Karbon Aktif Tempurung Kelapa dengan Aktivasi Fisika. *Jurnal Fisika Unand*, *13*(2), 254–260. https://doi.org/10.25077/jfu.13.2.254-260.2024

Khopsoh, B., Diyaningsih, M. V., & Haryuni, N. (2022). Penggunaan H2O2

(Hidrogen Peroksida) untuk Mengurangi Kadar Coliform Air Pada Peternakan Ayam Petelur di Kabupaten Blitar. *Briliant: Jurnal Riset Dan Konseptual*, *7*(1), 187. https://doi.org/10.28926/briliant.v7i1.802

Lestari, R. S. D., Sari, D. K., Rosmadiana, A., & Dwipermata, B. (2016). Pembuatan Dan Karaktersasi Karbon Aktif Tempurung Kelapa Dengan Aktivator Asam Fosfat Serta Aplikasinya Pada Pemurnian Minyak Goreng Bekas. *Teknika: Jurnal Sains Dan Teknologi*, *12*(2), 419. https://doi.org/10.36055/tjst.v12i2.6607

Liakos, T. I., & Lazaridis, N. K. (2016). Melanoidin removal from molasses effluents by adsorption. *Journal of Water Process Engineering*, *10*, 156–164.

Liu, Y., Wang, Y. (2019). Optimization of organics to nutrients (COD:N:P) ratio for aerobic granular sludge treating high-strength organic wastewater. *Environmental Technology & Innovation*, *16*. https://doi.org/10.1016/j.eti.2019.100484

Lutfi Nurohmah Paradila, Apriliani Wulandari, R. F. (2019). Kemampuan Adsorpsi Logam Berat Cu Dan Pb Dengan Menggunakan Adsorben Kulit Jagung (Zea Mays) Adsorption Ability Of Cu And Pb Heavy Metal Using Corn Skin Adsorben (Zea Mays). *Jurnal Chemurgy, 3(2).*

M. Geetha Devi, J.J. Dumaran, S. F. (2012). Dairy wastewater treatment using low molecular weight crab shell chitosan. *J. Inst. Eng. Ser. E*, *9(3)*, 9–14.

Mahmoud, M. E. M., Abd El-Razek, T. A. M., Abd El- Rahman, H. S., & Saad, M. A. (2021). Enhancing Effluent Quality of Wastewater Treatment Plants Using Advanced Oxidation Process. *Journal of Environmental Science*, *50*(10), 543–578. https://doi.org/10.21608/jes.2021.206547

Maulidifa, N. A., & Hidayah, E. N. (2024). Pengaruh Waktu Pengadukan Biosorben Cangkang Maggot dalam Menyisihkan Ion Fe. *Jurnal Serambi Engineering*, *IX*(2), 9040–9044.

Melani, A., Robiah, & Pratama, P. (2023). Limbah Cangkang Kepiting sebagai Biokoagulan pada Sistem Water Treatment (Kajian Pengaruh Variasi Jenis dan Konsentrasi Koagulan, Kecepatan Pengadukan). *Jurnal Inovator*, *6*(2), 50–55. www.ojs.politeknikjambi.ac.id/index/inovator

Mulder, M. (1996). *Basic Principles of Membrane Technology*. Springer Science & Business Media.

Mulyani, H., Budianto, G. P. I., Margono, M., & Kaavessina, M. (2019). Study of COD Removal Rate on a Sequencing Batch Reactor (SBR) Treating Tapioca Wastewater. *AgriTECH*, *38*(3), 243. https://doi.org/10.22146/agritech.29271

N. Wang, T. Zheng, G. Zhang, P. W. (2016). A review on Fenton-like processes for organic wastewater treatment. *J. Environ. Chem. Eng.*, *4(1)*, 762–787.

Nuba, D. D. (2016). AERATION TIME VARIATION IN THE TREATMENT OF WASTEWATER INDUSTRIAL SOY AND SAUCE. *Jurnal Gloria Justitia*.

Nursten, H. (2005). The Maillard Reaction: Chemistry, Biochemistry, and Implications. *Royal Society of Chemistry*.

Oktaviani, Z., & Hendrasarie, N. (2024). *Efektivitas Konsorsium Mikroalga Chlorella sp . dan Mikroba Indigenous Dalam Menurunkan BOD , COD , dan TN Air Limbah Industri Kecap Menggunakan MBBR*. *IX*(4), 10724–10730.

Pandharipande, S. L., Bhagat, P. H., Professor, A., Tech, B., & Semester, th. (2016). Synthesis of Chitin from Crab Shells and its Utilization in Preparation of Nanostructured Film. *International Journal of Science, Engineering and Technology Research (IJSETR)*, *5*(5), 2278–7798.

Permatasari, T., Rahman, A., Ruhaini, Arifuddin, M. R., Firmansyah, A. D., Rahmayanti, A., Sumiyarsono, E., & Afkar, K. (2023). Penyisihan BOD, COD, TSS, dan TDS Menggunakan Adsorben Lumpur Lapindo dan Cangkang Kerang Darah pada Limbah Tekstil Jetis Sidoarjo. *Journal of Research and Technology*, *9*(2), 245–251.

Poltak, R. F. (2005). Sequencing Batch Reactor Design and Operational Considerations Manual. *New England Interstate Water Pollution Control Commission: Massachusetts, USA*.

Pramesti, H. N. (2022). Potensi Limbah Cangkang Kepiting dan Kulit Udang Sebagai Masker Berlapis Chitosan Polymer Medium (CPM) Pereduksi Asap Rokok. In *skripsi teknik lingkungan*.

Q. Zhang, C. Wang, Y. L. (2016). Fenton's oxidation kinetics, pathway, and toxicity evaluation of diethyl phthalate in aqueous solution. *J. Adv. Oxid.*

Technol., *19(1)*, 125–133.

Rais, D. R., & Setiawan, O. (2024). Pengolahan limbah cair industri sarung dengan metode fenton Treatment of sarong industrial liquid waste by fenton method. *Jurnal Integrasi Proses Dan Lingkungan*, *1*(2), 55–61. http://ejournal.ft.umg.ac.id/index.php/jtk

Rame, N. I. H. (2018). Reuse Air Limbah Industri Kecap dengan Teknologi Mobile Ozonasi Katalitik (E-Sikat) dan Filtrasi secara Realtime dan Online. *Balai Besar Teknologi Pencegahan Pencemaran Industri*.

Reynolds, T. D. (1982). Unit operations and processes in environmental engineering. In *Monterey, Calif. : Brooks/Cole, Engineering Division*.

Riztu, S., Pradita, N. A., Sufra, R., Adriansyah, E., Luter, P. T. Z., Suzana, A., Satria, A. W., & Sanjaya, A. (2024). *Penurunan Kadar COD Air Limbah Domestik Menggunakan Fly Ash d engan Metode Adsorpsi*. *24*(3), 2570–2574. https://doi.org/10.33087/jiubj.v24i3.5677

Rosydi, H. A., Ali, M., & Jawwad, M. A. S. (2024). Efektivitas proses aerasi dan penggunaan adsorben cangkang telur bebek & kepiting dalam penurunan Fe, Mn, TDS, TOC pada air tanah. *Jurnal Serambi Engineering*, *IX*(3), 9425–9433.

S.J. Sreeja, K. Tamilarutselvi, A. Tamilselvi, K.P. Sarojini, K.J. Jasmin, M. M. M. (2023). Production of chitin and conversion into chitosan from crab (Scylla tranquebarica) shells and evaluation of its antioxidant activities. *Biomass Convers. Biorefinery*.

Said, N. I. (2017). Teknologi Pengolahan Air Limbah : Teori dan Aplikasi. *Erlangga*.

Santi, D. A. (2021). Penanganan limbah cair kecap dengan pengendapan menggunakan koagulan tawas : studi kasus di PT Wowin Purnomo, Trenggalek, Jawa Timur. *Sarjana Thesis, Universitas Brawijaya.*

Setiaty Pandia, Astri Devi Yunita Siahaan, & Anita Tiurmaida Hutagalung. (2017). PEMANFAATAN ADSORBEN DARI KULIT BUAH KAKAO (Theobroma cacao l.) UNTUK MENURUNKAN CHEMICAL OXYGEN DEMAND PADA PALM OIL MILL EFFLUENT. *Jurnal Teknik Kimia USU*, *6*(3), 34–

40. https://doi.org/10.32734/jtk.v6i3.1587

Setyorini, D., Arninda, A., Syafaatullah, A. Q., & Panjaitan, R. (2023). Penentuan Konstanta Isoterm Freundlich dan Kinetika Adsorpsi Karbon Aktif Terhadap Asam Asetat. *Eksergi*, *20*(3), 149. https://doi.org/10.31315/e.v20i3.10835

Shivraj., Quraishi, W and Basu, S. (2023). A Comprehensive Review on the Progress of Coagulation for Natural Organic Matter Removal in Water Treatment. *Jurnal Penelitian Dan Pengkajian Ilmu Pendidikan E-Saintika*, *7(2)*, 1–32.

Shurtleff, W., & Aoyagi, A. (2012). History of Koji – Grains and/or Soybeans Enrobed with a Mold Culture (300 BCE to 2012). *Soyinfo Center*.

Siswoyo, E., Zahra, R. N., Mai, N. H. A., Nurmiyanto, A., Umemura, K., & Boving, T. (2023). Chitosan of blood cockle shell (Anadara granosa) as a natural coagulant for removal of total suspended solids (TSS) and turbidity of well-water. *Egyptian Journal of Aquatic Research*, *49*(3), 283–289. https://doi.org/10.1016/j.ejar.2023.04.004

Skudaev, Solomonov, Morozovskii, I. (2008). Oxidation of hydrogen chloride with hydrogen peroxide in aqueous solution. *Russian Journal of Applied Chemistry*, *81(1)*, 14–16.

Soroosh, H., Otterpohl, R., & Hanelt, D. (2022). Influence of hydraulic retention time on municipal wastewater treatment using microalgae-bacteria flocs in sequencing batch reactors. *Bioresource Technology Reports*. https://doi.org/10.1016/j.biteb.2021.100884

Sperling, M. (2007). Biological Wastewater Treatment Series. Vol. 5: Activated Sludge and Aerobic Biofilm Reactors. *IWA Publishing, London.*

Steinkraus, K. H. (1996). Handbook of Indigenous Fermented Foods (2nd ed.). *CRC Press*.

Tang, J.-Y. Y.-S. X. a. M.-X. L. R. J. L.-S. Z. B.-H. F. (2023). Hyperbranched polyethyleneimine-functionalised chitosan aerogel for highly efficient removal of melanoidins from wastewater. *Journal of Hazardous Materials*, *447*.

https://www.sciencedirect.com/science/article/abs/pii/S0304389423000134?

via%3Dihub

Thapeetha, Y., Digamadulla, S., Sashikesh, G., & Kuganathan Sivashanthini. (2020). Determination of chitin content in shells of selected crab species available in Jaffna. *Vingnanam Journal of Science* , *15*(1), 15–18. https://www.researchgate.net/publication/353014367_Determination_of_chitin_content_in_shells_of_selected_crab_species_available_in_Jaffna

Tünay, O. (2010). Chemical Oxidation Applications for Industrial Wastewaters. In *Water Intelligence Online* (Vol. 9). https://doi.org/10.2166/9781780401416

Ursada, R., Alfani, Z. J., & Bagastyo, A. Y. (2023). *Treatment of leachate from Bantargebang Landfill using oxidation process with H 2 O 2*. *7*(2).

Vida, F. & Hendrasarie, N. . (2023). Spent Bleaching Earth sebagai Adsorben untuk Menyisihkan Krom dan Warna pada Limbah Cair Batik. *Jurnal Serambi Engineering*, *9*(1), 7642–7653. https://doi.org/10.32672/jse.v9i1.722

Willy, T. A. E. D., & Mukono, J. (2023). Pengolahan Air Limbah Proses Utama Menggunakan Wastewater Treatment Plant pada PT. Indonesia Power Grati POMU. *Media Gizi Kesmas*, *12*(1), 66–74. https://doi.org/10.20473/mgk.v12i1.2023.66-74

Wiranatha IG, Aryasih IG, P. DA. (2014). Pengaruh Lama Kontak Hidrogen PeroksidA terhadap Keluhan Subyektif Pengrajin Lontar. *Jurnal Kesehatan Lingkungan*, *4*(1), 61–69. http://poltekkes-denpasar.ac.id/files/JURNAL KESEHATAN LINGKUNGAN/I Gede Pandu Wiranatha1, I Gusti Ayu Made Aryasih2,.pdf

Wu, S. X., & Maskaly, J. (2018). Study on the effect of total dissolved solids (TDS) on the performance of an SBR for COD and nutrients removal. *Jurnal Ilmu Lingkungan Kesehatan Zat Berbahaya Toksin Lingkungan*. https://pubmed.ncbi.nlm.nih.gov/29111848/

Yadaturrahmah, I. I. (2020). Pengaruh Penambahan Impeller Pada Fase Aerobik Terhadap Efisiensi Kinerja Sequencing Batch Reactor Pada Limbah Cair Industri Tahu. *Universitas Pembangunan Nasional "Veteran" Jawa Timur*.

Yasmin, H. Z. (2023). Efektivitas Kombinasi Konsentrasi Hidrogen Peroksida (H2O2) Dan Waktu Kontak Sinar Ultraviolet-C Terhadap Penurunan Bakteri

Coliform Pada Limbah Cair Rs Pku Muhammadiyah Surakarta. *Jurnal Kesehatan Masyarakat*, *11*(1), 72–82. https://doi.org/10.14710/jkm.v11i1.34578

Yospy Guntur, A. D., Wibowo Jati, A. N., & Indah Murwani Yulianti, L. (2017). *PERBAIKAN KUALITAS LIMBAH CAIR INDUSTRI KECAP DAN SAOS PT. LOMBOK GANDARIA DENGAN VARIASI BAKTERI INDIGENUS Quality Improvement of Ketchup and soy Sauce's Industrial Liquid Waste in PT. Lombok Gandaria with Indigenous Bacteria Variance*.