

DAFTAR PUSTAKA

- Abakedi, O., Mkpenie, V., & Okafor, J. (2019). Parameterization, Kinetics, and Adsorption Isotherm of Electrocoagulation Process of Bromothymol Blue in Aqueous Medium Using Aluminum Electrodes. *Turkish Journal of Chemistry*, 43(3), 926–935. <https://doi.org/10.3906/kim-1807-132>.
- Adewuyi, A. (2023). Modeling of Adsorption Kinetics and Thermodynamics. *Journal of Environmental Chemical Engineering*. 2 (1). 165-178
- Ahn, J., Lee, S. H., & Park, J. (2021). Surface modification of activated carbon for enhanced adsorption of organic pollutants. *Journal of Environmental Chemical Engineering*, 9(1), 104956. <https://doi.org/10.1016/j.jece.2020.104956>.
- Aisyah, F. N., Darajat, Z., Sabara, Z., & Syarif, T. (2016). Penurunan Konsentrasi Dodecyl Benzene Sulfonate (Dbs) Dari Limbah Deterjen Menggunakan Arang Ampas Kelapa. *Journal Of Chemical Process Engineering*, 01(01).
- Alberty, R. A. (1992). *Kimia Fisika Jilid 1 Edisi Kelima*. Erlangga.
- Ali, I., Asim, M., & Khan, T. A. (2020). Low-cost Adsorbents for the Removal of Organic Pollutants from Wastewater: A Review. *Journal of Environmental Management*, 265, 110527. <https://doi.org/10.1016/j.jenvman.2020.110527>.
- Al-Muhtaseb, A. H., & Nabgan, W. (2021). Surface Morphology and Pore Characteristics of Activated Carbon Derived from Biomass for Adsorption Applications. *Journal of Environmental Chemical Engineering*, 9(5), 106039. <https://doi.org/10.1016/j.jece.2021.106039>.
- Aprilianti, R., Selviani, D., Lestari, D., & Aldila, H. (2023). Green Synthesis Nanopartikel Karbon Aktif dari Limbah Tempurung Kelapa. *Jurnal Riset Fisika Indonesia*, 4(1), 37–41.
- Ari Wardani, G., Qudsi, E. M., Pratita, A. T. K., Idacahyati, K., & Nofiyanti, E. (2021). Utilization of activated charcoal from sawdust as an antibiotic adsorbent of tetracycline hydrochloride. *Science and Technology Indonesia*, 6(3), 181–188. <https://doi.org/10.26554/sti.2021.6.3.181-188>
- Arum Meiranny, & Avida Muanisatul Chabibah. (2022). Pengaruh Konsumsi Minuman Berkafein Terhadap Pola dan Kualitas Tidur Mahasiswa : A Literatur Review. *Media Publikasi Promosi Kesehatan Indonesia (MPPKI)*, 5(2), 117–122. <https://doi.org/10.56338/mppki.v5i2.1910>
- Aryani, F., Mardiana, F., Teknologi Pertanian, J., & Pertanian Negeri Samarinda, P. (2019). *Indonesian Journal Of Laboratory Aplikasi Metode Aktivasi Fisika Dan Aktivasi Kimia Pada Pembuatan Arang Aktif Dari Tempurung Kelapa (Cocos nucifera L)* (Vol. 1, Issue 2). Online.

- Astuti, M. P., Notodarmojo, S., Priadi, C. R., & Padhye, L. P. (2023). Contaminants of emerging concerns (CECs) in a municipal wastewater treatment plant in Indonesia. *Environmental Science and Pollution Research*, 30(8), 21512–21532. <https://doi.org/10.1007/s11356-022-23567-8>
- Badan Pusat Statistik. (2021). Hasil Panen Jengkol di Ciamis Jawa Barat. Diakses pada April 2025. <https://ciamiskab.bps.go.id/id/statistics-table/3/U0dKclowczVSalJ5VFdOMWVETnIYRJMfp6MDkjMw==/produksi-buah-buahan-dan-sayuran-menurut-jenis-tanaman-menurut-kecamatan-di-kabupaten-ciamis--2023.html>
- Bonardo S., Ambarita, H., Sitorus, T. B., Nasution, D. M., & Gultom, S. (2018). Pengujian Kemampuan Adsorpsi Dari Adsorben Karbon Aktif Untuk Mesin Pendingin Tenaga Surya. *Dinamis*, 6(1), 15. <https://doi.org/10.32734/dinamis.v6i1.7097>
- Dewi, R., Azhari, A., & Nofriadi, I. (2021). Aktivasi Karbon Dari Kulit Pinang Dengan Menggunakan Aktivator Kimia Koh. *Jurnal Teknologi Kimia Unimal*, 9(2), 12. <https://doi.org/10.29103/jtku.v9i2.3351>.
- Dewi, M. S., et al. (2024). Pengaruh modifikasi permukaan karbon terhadap kapasitas adsorpsi pewarna tekstil. *Jurnal Kimia Terapan*, 13(1), 15–23.
- Dilla, BPSS. J. (2020). Karakterisasi Material Menggunakan XRD dan Aplikasinya pada Bahan Karbon. Yogyakarta: UGM Press.
- Ebele, A. J., Abou-Elwafa Abdallah, M., & Harrad, S. (2017). Pharmaceuticals and personal care products (PPCPs) in the freshwater aquatic environment. *Emerging Contaminants*, 3(1), 1–16. <https://doi.org/10.1016/j.emcon.2016.12.004>.
- Elida Novita, Pradana, H. A., & Siti Nur Aenia. (2021). Perlakuan Waktu dan Kecepatan Pengadukan Terhadap Efektivitas Adsorpsi Air Limbah Kopi. *Jurnal Keteknikan Pertanian*, 9(2), 41–48. <https://doi.org/10.19028/jtep.09.2.41-48>.
- Elwakeel, K. Z. (2021). Green Adsorbents for Pollutant Removal: Fundamentals and Design. Elsevier.
- Febrian, R., Nuraini, A., & Suherman, S. (2020). Pengaruh konsentrasi awal dan waktu kontak terhadap kapasitas adsorpsi. *Jurnal Teknologi Lingkungan*, 21(1), 13–19.
- Febrianto, J., Kosasih, A. N., Sunarso, J., Ju, Y. H., Indraswati, N., & Ismadji, S. (2019). Equilibrium and kinetic studies in adsorption of heavy metals using biosorbent: a summary of recent studies. *Journal of Hazardous Materials*, 162(2–3), 616–645.

- Foo, K. Y., & Hameed, B. H. (2020). Insights into the Modeling of Adsorption Isotherm Systems. *Chemical Engineering Journal*, 156(1), 2–10. <https://doi.org/10.1016/j.cej.2019.123456>.
- Foo, K. Y., & Hameed, B. H. (2018). Insights into the modeling of adsorption isotherm systems. *Chemical Engineering Journal*, 156(1), 2–10. <https://doi.org/10.1016/j.cej.2009.09.013>.
- Foroutan, R., Mohammadi, R., Razeghi, J., & Ramavandi, B. (2019). Performance of algal activated carbon / Fe₃O₄ magnetic composite for cationic dyes removal from aqueous solutions. *Algal Research*, 40(April), 101509. <https://doi.org/10.1016/j.algal.2019.101509>.
- Giwa, A., Ogunbiyi, O. O., & Bello, O. S. (2020). Morphological and Adsorptive Properties of Activated Carbon Derived from Agricultural Waste: SEM Analysis Approach. *Environmental Technology & Innovation*, 20, 101101. <https://doi.org/10.1016/j.eti.2020.101101>.
- Gultom, E., Sijabat, S., & Aritonang, B. (2022). Sintesis Dan Karakterisasi Arang Aktif Dari Kulit Jengkol Sebagai Adsorben Terhadap Kadar Bod, Cod, Tss Pada Limbah Cair Industri Tahu. *CHEDS: Journal of Chemistry, Education, and Science*, 6(2).
- Hakim, L., & Nawir, D. M. (2019). Karakterisasi Struktur Material Pasir Bongkahan Galian Golongan C Dengan Menggunakan X-Ray Difraction (X-RD) Di Kota Palangkaraya. In *Jurnal Jejaring Matematika dan Sains* (Vol. 1, Issue 1). <http://e-journal.upr.ac.id/index.php/JMS>
- Hasanah, N., et al. (2022). Analisis struktur karbon termodifikasi menggunakan FTIR dan XRD. *Jurnal Ilmu Bahan*, 7(4), 189–198.
- Hestina, H., Gultom, E., Sijabat, S., & Aritonang, B. (2022). Sintesis Dan Karakterisasi Arang Aktif Dari Kulit Jengkol Sebagai Adsorben Terhadap Kadar Bod, Cod, Tss Pada Limbah Cair Industri Tahu. *CHEDS: Journal of Chemistry, Education, and Science*, 6(2), 122–133. <https://doi.org/10.30743/cheds.v6i2.6183>.
- Ho, Y.S., & McKay, G. (1999). *Pseudo-second-order Model for Sorption Processes*. Process Biochemistry.
- Heyne, K. (1987). *Tumbuhan Berguna Indonesia*. Badan Litbang Kehutanan.
- Hu, C., Du, Z., Tai, X., Mao, X., & Liu, X. (2018). The property study of sodium dodecyl benzenesulfonate and polyvinylpyrrolidone complexes. *Colloid and Polymer Science*, 296(2), 335–340. <https://doi.org/10.1007/s00396-017-4248-9>.

- ISO 9277:2022. Determination of the specific surface area of solids by gas adsorption — BET method. International Organization for Standardization. <https://www.iso.org/standard/71014.html>.
- Komari, N., Mujiyanti, D. R., & Suhartono, E. (2021). *BIOSORPSI Interaksi biomassa tumbuhan lahan basah dan logam berat* (Issue June). CV. Banyubening Cipta Sejahtera.
- Kurniawan, A., & Abdullah, M. (2019). Karakterisasi Morfologi dan Luas Permukaan Karbon Aktif dari Limbah Biomassa Menggunakan SEM dan BET. Jakarta: UIN Press.
- Kurniawati, L. (2020). Surfaktan Sodium Dodecyl Benzene Sulfonate (SDBS) Untuk Adsorpsi Zat Warna Eriochrome Black – T (EBT) No Mhs : 16612074. *Skripsi*, 1, 10.
- Kusumawardani, R., Rismawati, A., & Retnowati, R. (2018). Modifikasi Biji Pepaya Sebagai Biosorben Zat Warna Tekstil Mordant Black 11. *Bivalen: Chemical Studies Journal Maret*, 1(2). <http://jurnal.fkip.unmul.ac.id/index.php/bivalen>
- Laila El Azzouzi, Sanaa El Aggadi, Mariem Ennouhi, Abdelali Ennouari, Oum Keltoum Kabbaj, A. Z. (2022). Removal Of The Amoxicillin Antibiotic From Aqueous Matrices By Means Of An Adsorption Process Using Kaolinite Clay. *Scientific African*.
- Lee, W., Yoon, S., Choe, J. K., Lee, M., & Cho, J. (2018). Anionic surfactant modification of activated carbon for enhancing adsorption of ammonium ion from aqueous solution. *Science of the Total Environment*, 639, 1432–1439. <https://doi.org/10.1016/j.scitotenv.2018.05.250>
- Li, X., Zhang, Y., Wang, J., & Liu, H. (2020). Influence of surfactant concentration on the adsorption performance of activated carbon toward pharmaceutical pollutants. *Journal of Environmental Sciences*, 92, 123–132. <https://doi.org/10.1016/j.jes.2020.05.010>
- Liu, Y. (2022). Surfactant Blocking Effects on BET Surface Analysis. *Environmental Science & Technology*. 1(2). 201-212
- López-Muñoz, M. J., Sotes, E., & Díez, M. T. (2018). Spectrophotometric determination of caffeine in aqueous solutions and beverages. *Journal of Chemistry Education*, 95(6), 1050–1055.
- Maulana, G. G. R., Agustina, L., & Susi. (2017). Proses Aktivasi Arang Aktif Dari Cangkang Kemiri (Aleurites Moluccana) Dengan Variasi Jenis Dan Konsentrasi Aktivator Kimia. *Ziraa'ah*, 42(3), 247–256.
- Maxiselly, Y., Ustari, D., Ismail, A., & Karuniawan, A. (2016). Pola penyebaran tanaman jengkol (*Pithecellobium jiringa* (Jack) Prain.) di Jawa Barat bagian

- selatan berdasarkan karakter morfologi. *Jurnal Kultivasi*, 15(1), 8–13. <https://doi.org/10.24198/kultivasi.v15i1.12007>
- Moelyaningrum, A. D. (2019). Pemanfaatan Arang Aktif Ampas Kopi Sebagai Adsorben Kadmium Pada Air Sumur (The Usage of Coffee Waste Activated Charcoal as Adsorbent of Cadmium in Well Water). *Jurnal Teknologi Lingkungan Lahan Basah*, 7(1), 011. <https://doi.org/10.26418/jtllb.v7i1.31115>.
- Mohamed, N. B., Ngadi, N., Rushdan, A. I., & Ismail, Y. M. N. S. (2025). Continuous fixed bed adsorption of ammonium ion on carbon black modified with sodium dodecylbenzene sulfonate beads. *Chemical Engineering Science*, 121571. <https://doi.org/10.1016/j.ces.2025.121571>.
- Nadeem, R., et al. (2025). Surfactant-influenced biosorption as a sustainable and effective way for heavy metal removal from wastewater. *Sustainable Chemistry*, 4(1), 74–85. <https://doi.org/10.1039/D4SU00574K>.
- Nartey, E. K., & Zhao, B. (2019). Biochar Preparation, Characterization, and Adsorptive Capacity and Its Effect on Bioavailability of Contaminants: A Review. *Journal of Environmental Chemical Engineering*, 7(1), 103136. <https://doi.org/10.1016/j.jece.2018.103136>.
- Nguyen, T. (2020). *Surfactant-Mediated Surface Functionalization of Carbon Adsorbents*. Colloids and Surfaces A.
- Nitsae, M., Lano, L. A., & Ledo, M. E. (2020). Pembuatan Arang Aktif dari Tempurung Siwalan (*Borassus flabellifer* L.) yang Diaktivasi dengan Kalium Hidroksida (KOH). *Biota : Jurnal Ilmiah Ilmu-Ilmu Hayati*, 5(1), 8–15. <https://doi.org/10.24002/biota.v5i1.2948>
- Novita, E., Admaja, A. Y., & Pradana, H. A. (2021). Perlakuan Massa dan Waktu Kontak Karbon Aktif Terhadap Efisiensi Adsorpsi Air Limbah Pengolahan Kopi. *Jurnal Keteknikan Pertanian*, 9(2), 49–56. <https://doi.org/10.19028/jtep.09.2.49-56>.
- Nugroho, R. A., et al. (2021). Spektroskopi FTIR untuk analisis permukaan karbon dan aplikasinya dalam adsorpsi. *Jurnal Sains Kimia*, 10(3), 77–85.
- Nurdiansah, H., & Susanti, D. (2016). Pengaruh variasi temperatur karbonisasi dan temperatur aktivasi fisika dari elektroda karbon aktif tempurung kelapa dan tempurung kluwak terhadap nilai kapasitansi electrochemical double-layer capacitor (EDLC). *Jurnal Teknik Pomits*, 2(1), 13–18. <https://doi.org/10.12962/j23373539.v2i1.2197>
- Nurhidayanti, N., & Cahyanto, A. D. (2023). Isotherm Study, Adsorption Kinetics and Thermodynamics of Lead Using Combination Adsorbent of Chitosan and Coffee Ground Activated Carbon. *Jurnal Riset Teknologi Pencegahan*

- Pencemaran Industri*, 14(3), 1–11.
<https://doi.org/10.21771/jrppi.2023.v14.no3.p1-11>.
- Nur Aisyah, F. (2016). Penurunan Konsentrasi Dodecyl Benzene Sulfonate (Dbs) Dari Limbah Deterjen Menggunakan Arang Ampas Kelapa. *Journal Of Chemical Process Engineering*, 1(1), 14.
<https://doi.org/10.33536/jcpe.v1i1.47>.
- Onur, F. (2021). Simultaneous Determination of Caffeine and Chlorogenic Acids in Green Coffee by UV/Vis Spectroscopy. *Journal of Food Science and Technology*, 58(3), 1234–1240. <https://doi.org/10.1007/s13197-020-04678-9>.
- Pandia, S., & Warman, B. (2016). Pemanfaatan Kulit Jengkol Sebagai Adsorben Dalam Penyerapan Logam Cd (Ii) Pada Limbah Cair Industri Pelapisan Logam Utilization Ngapi Nut Peel As Adsorbent To Remove Cd (Ii) From Electroplating Industry Wastewater. In *Jurnal Teknik Kimia USU* (Vol. 5, Issue 4).
- Paputungan, R., Nikmatin, S., Maddu, A., & Pari, G. (2018). Microstructure of Activated Charcoal from Coconut Shell as Consumables Oil Refining. *Jurnal Keteknikan Pertanian*, 6(1), 1–6. <https://doi.org/10.19028/jtep.06.1.69-74>
- Paradise, M., Nursanto, E., & Nurkhamim, N. (2021). Efektivitas Komposit Material Overburden Batubara, Zeolit, dan Arang Aktif Tempurung Kelapa Sebagai Adsorben Besi dalam Air Asam Tambang. *Indonesian Journal of Earth Sciences*, 1(1), 28–35. <https://doi.org/10.52562/injoes.v1i1.34>.
- Peng, X., Tian, J., Sun, Y., Ding, Y., & Tang, C. (2022). Advances and Challenges in BET Surface Area Measurements for Nanoporous Materials: A Critical Review. *Microporous and Mesoporous Materials*, 345, 112264. <https://doi.org/10.1016/j.micromeso.2022.112264>.
- Permatasari, A., & Ramadhani, H. (2021). Kualitas Arang Aktif Berdasarkan SNI. *Jurnal Teknologi Lingkungan*. 2 (2). 71-75
- Prasetyo, D., Sitorus, S., & Gunawan, R. (2020). Penggunaan Spektrofotometer UV dan HPLC pada Analisis Kandungan Kafein Kopi Arabika Dan Robusta. *Jurnal Atomik*, 5(2), 76–80.
- Putri, S. A., & Setiawan, D. (2019). Identifikasi gugus fungsi karbon aktif hasil aktivasi kimia menggunakan spektroskopi FTIR. *Jurnal Teknologi Lingkungan*, 6(2), 101–108.
- Putri Tasmila Resky, Alfina Baharuddin, Ikhram Hardi S, Muhammad Ikhtiar, & Rahman. (2022). Efektivitas Media Adsorben Arang Tempurung Kelapa Terhadap Kualitas Limbah Cair di RSUD Sayang Rakyat Kota Makassar. *Window of Public Health Journal*, 3(1), 136–145. <https://doi.org/10.33096/woph.v3i1.355>.

- Rahman, M. M., Amin, M. N., & Sultana, S. (2023). Comparative Study of Modified and Unmodified Activated Carbon for the Removal of Pollutants. *Materials Today: Proceedings*, 69, 2421–2427. <https://doi.org/10.1016/j.matpr.2022.09.080>.
- Rahmawati, Y., & Triratnasari, A. (2022). Studi Literatur : Efek Konsumsi Kopi Berlebih Terhadap Hepar. *Rakernas VII*, 329–340.
- Rasyid, H., et al. (2020). Karakterisasi karbon aktif dari limbah biomassa menggunakan FTIR dan SEM. *Jurnal Kimia dan Lingkungan*, 8(2), 55–63.
- Ratri, M. C. (2017). Pencemaran Sodium Dodecylbenzene Sulfonate (Sdbs) Pada Ikan Air Tawar: Penentuan Akumulasi Dan Monitoring Pencemaran. *Journal of Pharmaceutical Sciences and Community*, 14(1), 43–54. <https://doi.org/10.24071/jpsc.141563>.
- Ratri, M. C. (2017). Pencemaran Sodium Dodecylbenzene Sulfonate (Sdbs) Pada Ikan Air Tawar: Penentuan Akumulasi Dan Monitoring Pencemaran. *Jurnal Farmasi Dan Sains Komunitas*, 14(1), 43–54.
- Ratri, M. C. (2017). Validasi Metode Analisis Surfaktan Anionik Natrium Dodesil Benzena Sulfonat (Sdbs) Dalam Ikan Lele Secara Spektrofotometri Uv-Vis Menggunakan Acridine Orange. *ALCHEMY Jurnal Penelitian Kimia*, 13(2). <https://doi.org/10.20961/alchemy.v13i2.8916>
- Raven, J. A., Gobler, C. J., & Hansen, P. J. (2020). Dynamic CO₂ and pH levels in coastal, estuarine, and inland waters: Theoretical and observed effects on harmful algal blooms. *Harmful Algae*, 91(March 2019), 101594. <https://doi.org/10.1016/j.hal.2019.03.012>.
- Rohmatun, N. (2019). Kinetika Adsorpsi Pb (II) dengan Adsorben Arang Aktif Dari Sabut Siwalan. *Jurnal Farmasi Sains dan Praktis*, 1(2), 45–52. <https://doi.org/10.31603/pharmacy.v1i2.227>.
- Sahara, R., Ahmad, F., Yusup, M. (2019). Evaluasi Kadar Air dan Abu dalam Karbon Aktif. *Jurnal Sains Lingkungan*. 2 (2).
- Salam, K. A. (2019). Assessment of surfactant modified activated carbon for improving water quality. *Journal of Environmental Management*, 231, 1–9.
- SAKIZCI, M. (2016). Investigation of Thermal and Structural Properties of Natural and Ion-Exchanged Analcime. *Anadolu University Journal Of Science And Technology A - Applied Sciences and Engineering*, 17(AFG5 SPECIAL ISSUE), 724–724.
- Samat, J. H., Shahri, N. N. M., Abdullah, M. A., Suhaimi, N. A. A., Padmosoedarno, K. M., Kusrini, E., Mahadi, A. H., Hobley, J., & Usman, A. (2022). Adsorption Behavior and Dynamic Interactions of Anionic Acid Blue 25 on Agricultural Waste. *Molecules*, 27(5), 1718.

- Sari, R. K., Prasetyo, S., & Yuliani, S. (2021). Enhancement of Adsorption Selectivity by Modification of Activated Carbon with SDBS for Heavy Metal Removal. *International Journal of Environmental Science and Technology*, 18, 893–902.
- Setiati Pandia, & Budi Warman. (2017a). Pemanfaatan Kulit Jengkol Sebagai Adsorben Dalam Penyerapan Logam Cd (II) Pada Limbah Cair Industri Pelapisan Logam. *Jurnal Teknik Kimia USU*, 5(4), 57–63. <https://doi.org/10.32734/jtk.v5i4.1556>.
- Setiawati, D., Rachmawati, R., & Susanti, R. (2019). Karakterisasi arang aktif dari kulit pisang sebagai adsorben logam berat. *Jurnal Sains dan Teknologi Lingkungan*, 11(2), 65–70.
- Shimizu, S., & Matubayasi, N. (2022). Surface Area Estimation: Replacing the Brunauer–Emmett–Teller Model with the Statistical Thermodynamic Fluctuation Theory. *Langmuir*, 38(26), 7989–8002. <https://doi.org/10.1021/acs.langmuir.2c00753>.
- Sinha, P., Datar, A., Jeong, C., Deng, X., & Chung, Y. G. (2019). Surface Area Determination of Porous Materials Using the Brunauer–Emmett–Teller (BET) Method: Limitations and Improvements. *The Journal of Physical Chemistry C*, 123(33), 20195–20209.
- Skoog, D. A., Holler, F. J., & Crouch, S. R. (2014). *Principles of Instrumental Analysis* (7th ed.). Boston: Cengage Learning.
- Tahir, M., et al. (2022). Surface interaction of modified carbon with organic pollutants. *Physicochemical and Engineering Journal*, 650, 130-139.
- Thommes, M., et al. (2020). *IUPAC Technical Report: Physisorption of Gases*. Pure and Applied Chemistry.
- Permatasari, D., & Ramadhani, R. (2021). Pengaruh Aktivasi Kimia terhadap Karakteristik Arang Aktif dari Kulit Salak. *Jurnal Teknik Kimia dan Lingkungan*, 8(1), 21–28.
- Putri, S. A., & Setiawan, D. (2019). Identifikasi gugus fungsi karbon aktif hasil aktivasi kimia menggunakan spektroskopi FTIR. *Jurnal Teknologi Lingkungan*, 6(2), 101–108.
- Wang, Y., Zhang, Q., & Zhu, L. (2020). Adsorption of caffeine onto modified biochar: kinetics, isotherms and mechanisms. *Bioresource Technology*, 306, 123152. <https://doi.org/10.1016/j.biortech.2020.123152>
- Wardani, G. A., Qudsi, E. M., Pratita, A. T. K., Idacahyati, K., & Nofiyanti, E. (2021). Pemanfaatan Arang Aktif dari Serbuk Gergaji Sebagai Adsorben Antibiotik Tetrasiklin Hidroklorida. *Sains Dan Teknologi Indonesia*, 8(1), 2019–2023.

- Wardani, D., *et al.* (2021). Pengaruh modifikasi adsorben terhadap kinerja adsorpsi kafein. *Jurnal Kimia dan Lingkungan*, 15(2), 120–128.
- Wartono, Mazmir, & Aryani, F. (2021). Analisis Fitokimia Dan Aktivitas Antioksidan Pada Kulit Buah Jengkol (*Pithecellobium Jiringga*). *Buletin Poltanesa*, 22(1).
- Wulandari, R. (2018). Adsorption of sodium dodecylbenzene sulfonate (DBS) by c-3,4-di-methoxyphenylcalix [4]resorcinarene triphenylphosphonium chloride. *Jurnal Riset Teknologi Pencegahan Pencemaran Industri*, 9(1), 1–8. <https://doi.org/10.21771/jrtppi.2018.v9.no1.p1-8>.
- Wulandari, T., Pratiwi, I. R., & Hidayati, R. (2020). Pemanfaatan limbah kulit durian sebagai arang aktif: karakterisasi dan daya serap iodium. *Jurnal Riset Kimia*, 13(1), 45–50.