

DAFTAR PUSTAKA

- Abbou, B., Lebdiri, I., & Ouaddari, H. (2024). Evaluation of Illitic-Kaolinite clay as an adsorbent for Cr³⁺ removal from synthetic aqueous solutions: Isotherm, kinetic, and thermodynamic analyses. *Chemical Physics Impact*, 8, 100527. <https://doi.org/10.1016/j.chphi.2024.100527>
- Akbar, N. A., Aziz, H. A., & Adlan, M. N. (2020). *Characteristic Study of Physical and Chemical Properties of Limestone Subjected to Adsorption of Fe and Mn in Groundwater* (pp. 621–627). https://doi.org/10.1007/978-3-030-32816-0_43
- Aktar, M. S., Shakil, M. S. R., & Tuj-Zohra, F. (2023). Potentials of bio-adsorbent prepared from coconut fibre in mitigation of pollution from tanning effluent. *Cleaner Engineering and Technology*, 17, 100687. <https://doi.org/10.1016/j.clet.2023.100687>
- Aslam, F., Zaid, O., Althoey, F., Alyami, S. H., Qaidi, S. M. A., de Prado Gil, J., & Martínez-García, R. (2023). RETRACTED: Evaluating the influence of fly ash and waste glass on the characteristics of coconut fibers reinforced concrete. *Structural Concrete*, 24(2), 2440–2459. <https://doi.org/10.1002/suco.202200183>
- Basile, M. L., Triunfo, C., Gärtner, S., Fermani, S., Laurenzi, D., Maoloni, G., Mazzon, M., Marzadori, C., Adamiano, A., Iafisco, M., Montroni, D., Gómez Morales, J., Cölfen, H., & Falini, G. (2024). Stearate-Coated Biogenic Calcium Carbonate from Waste Seashells: A Sustainable Plastic Filler. *ACS Omega*, 9(10), 11232–11242. <https://doi.org/10.1021/acsomega.3c06186>
- Bassareh, H., Karamzadeh, M., & Movahedirad, S. (2023). Synthesis and characterization of cost-effective and high-efficiency biochar for the adsorption of Pb²⁺ from wastewater. *Scientific Reports*, 13(1), 15608. <https://doi.org/10.1038/s41598-023-42918-0>
- Chan, A. A., Abdul Raman, A. A., Chong, W. L., & Buthiyappan, A. (2024). Graphene oxide impregnated activated carbon derived from coconut shell through hydrothermal carbonization for cationic dye removal: Adsorptive performance, kinetics, and chemistry of interaction. *Journal of Cleaner Production*, 437, 140655. <https://doi.org/10.1016/j.jclepro.2024.140655>
- Egbosiuba, T. C., Tran, T. Q., Arole, K., Zhang, Y., Enyoh, C. E., Mustapha, S., Tijani, J. O., Yadav, V. K., Anadebe, V. C., & Abdulkareem, A. S. (2024). Biotreatment of clay-based adsorbent to eliminate arsenic (V) ions and malachite green from wastewater: Isotherm, kinetics, thermodynamics, reusability and mechanism. *Results in Engineering*, 22, 102073. <https://doi.org/10.1016/j.rineng.2024.102073>
- El Kerdoudi, Z., Bensalah, J., Ferraa, N., El Mekkaoui, A., Berisha, A., Safi, Z., Ouaddari, H., Khallouki, F., Dauebait, M., Nafidi, H.-A., Z. Gaafar, A.-R., Bourhia, M., Habsaoui, A., & Mejdoub, N. EL. (2023). Physicochemical Characterization of Clay and Study of Cationic Methylene Blue Dye Adsorption. *ACS Omega*, 8(43), 40848–40863. <https://doi.org/10.1021/acsomega.3c06019>

- Gregorkiewicz, M., & Boschetti, A. (2024). Lattice symmetry relaxation as a cause for anisotropic line broadening and peak shift in powder diffraction. *Acta Crystallographica Section A Foundations and Advances*, 80(6), 439–445. <https://doi.org/10.1107/S2053273324008799>
- Groz dov, D., & Zinicovscaia, I. (2023). Mesoporous Materials for Metal-Laden Wastewater Treatment. *Materials*, 16(17), 5864. <https://doi.org/10.3390/ma16175864>
- Guo, S., Hermann, J., Tang, P., Chu, X., Chen, Y., & Su, B. (2022). Formation of carbon-bearing silicate melts by melt-metacarbonate interaction at convergent plate margins. *Earth and Planetary Science Letters*, 597, 117816. <https://doi.org/10.1016/j.epsl.2022.117816>
- Heryanto, H. (2025). Rice husk-derived biosilica/clay hybrids for photocatalytic dye degradation. *Materials Chemistry and Physics*, 332, 130245. <https://doi.org/10.1016/j.matchemphys.2024.130245>
- Heryanto, H., Tahir, D., Akmal, A., Akouibaa, A., & Rahmat, R. (2024a). Photocatalysis and microwave absorption performance of cobalt particles dispersed on activated carbon surface under the role of surface, optical, and magnetic properties. *Materials Chemistry and Physics*, 327, 129902. <https://doi.org/10.1016/j.matchemphys.2024.129902>
- Heryanto, H., Tahir, D., Akmal, A., Akouibaa, A., & Rahmat, R. (2024b). Photocatalysis and microwave absorption performance of cobalt particles dispersed on activated carbon surface under the role of surface, optical, and magnetic properties. *Materials Chemistry and Physics*, 327, 129902. <https://doi.org/10.1016/j.matchemphys.2024.129902>
- Heryanto, H., Tahir, D., Akmal, A., Akouibaa, A., & Rahmat, R. (2024c). Photocatalysis and microwave absorption performance of cobalt particles dispersed on activated carbon surface under the role of surface, optical, and magnetic properties. *Materials Chemistry and Physics*, 327, 129902. <https://doi.org/10.1016/j.matchemphys.2024.129902>
- Hunvik, K. W. B., Loch, P., Cavalcanti, L. P., Seljelid, K. K., Røren, P. M., Rudić, S., Wallacher, D., Kirch, A., Knudsen, K. D., Rodrigues Miranda, C., Breu, J., Bordallo, H. N., & Fossum, J. O. (2020). CO₂ Capture by Nickel Hydroxide Interstratified in the Nanolayered Space of a Synthetic Clay Mineral. *The Journal of Physical Chemistry C*, 124(48), 26222–26231. <https://doi.org/10.1021/acs.jpcc.0c07206>
- Hurai, V., Huraiová, M., Habler, G., Horschinegg, M., Milovský, R., Milovská, S., Hain, M., & Abart, R. (2023). Carbonatite-melilitite-phosphate immiscible melts from the aragonite stability field entrained from the mantle by a Pliocene basalt. *Mineralogy and Petrology*, 117(3), 467–496. <https://doi.org/10.1007/s00710-022-00783-1>
- Iyer, S., Deshmukh, S. M., & Tapre, R. W. (2025). Review on removal of heavy metals from industrial effluents by adsorption. *Reviews in Inorganic Chemistry*, 45(3), 479–496. <https://doi.org/10.1515/revic-2024-0079>

- Jiang, X., Liu, Z., Yan, B., Zhao, L., Chen, T., & Yang, X. (2024). Effects of active silicon amendment on Pb(II)/Cd(II) adsorption: Performance evaluation and mechanism. *Journal of Hazardous Materials*, 478, 135614. <https://doi.org/10.1016/j.jhazmat.2024.135614>
- Kettum, W., Samart, C., Chanlek, N., Pakawanit, P., Reubroycharoen, P., Guan, G., Kongparakul, S., & Kiatkamjornwong, S. (2021). Enhanced adsorptive composite foams for copper (II) removal utilising bio-renewable polyisoprene-functionalised carbon derived from coconut shell waste. *Scientific Reports*, 11(1), 1459. <https://doi.org/10.1038/s41598-020-80789-x>
- Khanzada, A. K., Al-Hazmi, H. E., Kurniawan, T. A., Majtacz, J., Piechota, G., Kumar, G., Ezzati, P., Saeb, M. R., Rabiee, N., Karimi-Maleh, H., Lima, E. C., & Maĭinia, J. (2024). Hydrochar as a bio-based adsorbent for heavy metals removal: A review of production processes, adsorption mechanisms, kinetic models, regeneration and reusability. *Science of The Total Environment*, 945, 173972. <https://doi.org/10.1016/j.scitotenv.2024.173972>
- Kurajica, S., Šipušić, J., Zupancic, M., Brautović, I., & Albrecht, M. (2021a). ZnO-Al₂O₃-SiO₂ glass ceramics: Influence of composition on crystal phases, crystallite size and appearance. *Journal of Non-Crystalline Solids*, 553, 120481. <https://doi.org/10.1016/j.jnoncrysol.2020.120481>
- Kurajica, S., Šipušić, J., Zupancic, M., Brautović, I., & Albrecht, M. (2021b). ZnO-Al₂O₃-SiO₂ glass ceramics: Influence of composition on crystal phases, crystallite size and appearance. *Journal of Non-Crystalline Solids*, 553, 120481. <https://doi.org/10.1016/j.jnoncrysol.2020.120481>
- Leng, L., Xiong, Q., Yang, L., Li, H., Zhou, Y., Zhang, W., Jiang, S., Li, H., & Huang, H. (2021). An overview on engineering the surface area and porosity of biochar. *Science of The Total Environment*, 763, 144204. <https://doi.org/10.1016/j.scitotenv.2020.144204>
- Li, C., Zhu, N., Yang, S., He, X., Zheng, S., Sun, Z., & Dionysiou, D. D. (2021). A review of clay based photocatalysts: Role of phyllosilicate mineral in interfacial assembly, microstructure control and performance regulation. *Chemosphere*, 273, 129723. <https://doi.org/10.1016/j.chemosphere.2021.129723>
- Li, W., Guo, M., Wang, Y., Deng, H., Lei, H., Yu, C., & Liu, Z. (2024). Selective adsorption of heavy metal ions by different composite-modified semi-carbonized fibers. *Separation and Purification Technology*, 328, 125022. <https://doi.org/10.1016/j.seppur.2023.125022>
- Liang, L., Ge, Z., Lei, W., Wang, F., Xia, M., & Wang, Z. (2025). Innovative citric acid/polydopamine@sepiolite composites for efficient removal of Ni²⁺ and methylene blue in single and binary adsorption systems: Regulation and mechanism. *Journal of Environmental Chemical Engineering*, 13(2), 115523. <https://doi.org/10.1016/j.jece.2025.115523>
- Liu, H., Zhang, J., Liu, J., Chen, L., Huang, H., & Evrendilek, F. (2021). Co-pyrolytic mechanisms and products of textile dyeing sludge and durian shell in changing operational conditions. *Chemical Engineering Journal*, 420, 129711. <https://doi.org/10.1016/j.cej.2021.129711>

- Ma, M., Wang, T., Ke, X., Liu, Y., Song, Y., Shang, X., Li, J., & Han, Q. (2023). A novel slag composite for the adsorption of heavy metals: Preparation, characterization and mechanisms. *Environmental Research*, 216, 114442. <https://doi.org/10.1016/j.envres.2022.114442>
- Nascimento, P. F. P., Neto, E. L. B., Pereira, J. E. S., & Silva, A. J. F. (2020). Cu²⁺ and Cd²⁺ Adsorption Mechanism by Coconut Husk Powder with and without Amine Modification. *Journal of Environmental Engineering*, 146(8). [https://doi.org/10.1061/\(ASCE\)EE.1943-7870.0001746](https://doi.org/10.1061/(ASCE)EE.1943-7870.0001746)
- Nkutha, C. S., Naidoo, E. B., & Shooto, N. D. (2021). Adsorptive studies of toxic metal ions of Cr(VI) and Pb(II) from synthetic wastewater by pristine and calcined coral limestones. *South African Journal of Chemical Engineering*, 36, 43–57. <https://doi.org/10.1016/j.sajce.2021.01.001>
- Palencia, M., Chate, N. G., & García-Quintero, A. (2024a). Obtaining micrometric-scale hollow fibers from wastes aged coir by oxidative chloro-sulfonation of lignin: HClO/H₂SO₄. *Bioresource Technology Reports*, 25, 101812. <https://doi.org/10.1016/j.biteb.2024.101812>
- Palencia, M., Chate, N. G., & García-Quintero, A. (2024b). Obtaining micrometric-scale hollow fibers from wastes aged coir by oxidative chloro-sulfonation of lignin: HClO/H₂SO₄. *Bioresource Technology Reports*, 25, 101812. <https://doi.org/10.1016/j.biteb.2024.101812>
- Qiao, L., & Fu, D. (2025). N-doped carbon sphere-SiO₂ composite structure materials with high adsorption rate and low regeneration energy consumption for CO₂ capture from flue gas. *Journal of Environmental Chemical Engineering*, 13(1), 115218. <https://doi.org/10.1016/j.jece.2024.115218>
- Rizwan, M., Usman, K., & Alsafran, M. (2024). Ecological impacts and potential hazards of nickel on soil microbes, plants, and human health. *Chemosphere*, 357, 142028. <https://doi.org/10.1016/j.chemosphere.2024.142028>
- Samanta, P. K. (2025). Effect of microstrain on the crystallite size of ZnO nanoparticles: X-ray peak profile and Rietveld analysis. *Next Materials*, 8, 100841. <https://doi.org/10.1016/j.nxmte.2025.100841>
- Sokolova, T. S., & Dorogokupets, P. I. (2021). Equations of State of Ca-Silicates and Phase Diagram of the CaSiO₃ System under Upper Mantle Conditions. *Minerals*, 11(3), 322. <https://doi.org/10.3390/min11030322>
- Taharia, Md., Dey, D., Das, K., Sukul, U., Chen, J.-S., Banerjee, P., Dey, G., Sharma, R. K., Lin, P.-Y., & Chen, C.-Y. (2024). Microbial induced carbonate precipitation for remediation of heavy metals, ions and radioactive elements: A comprehensive exploration of prospective applications in water and soil treatment. *Ecotoxicology and Environmental Safety*, 271, 115990. <https://doi.org/10.1016/j.ecoenv.2024.115990>
- Vakili, M., Rafatullah, M., Yuan, J., Zwain, H. M., Mojiri, A., Gholami, Z., Gholami, F., Wang, W., Giwa, A. S., Yu, Y., Cagnetta, G., & Yu, G. (2021). Nickel ion removal from aqueous solutions through the adsorption process: a review. *Reviews in Chemical Engineering*, 37(6), 755–778. <https://doi.org/10.1515/revce-2019-0047>

- Wang, F., Marcuson, S., Elsayi, R., Liu, L., Ramos, J. M., Walker, M., & Barati, M. (2024). Effect of agglomeration on nickel extraction and sulfur release from ultramafic nickel sulfide concentrates. *Minerals Engineering*, 211, 108684. <https://doi.org/10.1016/j.mineng.2024.108684>
- Wang, P., Shen, X., Qiu, S., Zhang, L., Ma, Y., & Liang, J. (2024). Clay-Based Materials for Heavy Metals Adsorption: Mechanisms, Advancements, and Future Prospects in Environmental Remediation. *Crystals*, 14(12), 1046. <https://doi.org/10.3390/cryst14121046>
- Wu, Y., Fang, X., Shen, X., Yu, X., Xia, C., Xu, L., Zhang, Y., & Gan, L. (2023). Synergetic effect of photocatalytic oxidation plus catalytic oxidation on the performance of coconut shell fiber biochar decorated α -MnO₂ under visible light towards BPA degradation. *Journal of Environmental Management*, 345, 118911. <https://doi.org/10.1016/j.jenvman.2023.118911>
- Xiang, H., Yang, Z., Liu, X., Lu, F., Zhao, F., & Chai, L. (2025). Advancements in functional adsorbents for sustainable recovery of rare earth elements from wastewater: A comprehensive review of performance, mechanisms, and applications. *Advances in Colloid and Interface Science*, 338, 103403. <https://doi.org/10.1016/j.cis.2025.103403>
- Yang, X., Zhou, Y., Hu, J., Zheng, Q., Zhao, Y., Lv, G., & Liao, L. (2024). Clay minerals and clay-based materials for heavy metals pollution control. *Science of The Total Environment*, 954, 176193. <https://doi.org/10.1016/j.scitotenv.2024.176193>
- Zhang, H., Du, S., Wang, Y., & Xue, F. (2024). Prevention of Crystal Agglomeration: Mechanisms, Factors, and Impact of Additives. *Crystals*, 14(8), 676. <https://doi.org/10.3390/cryst14080676>
- Zhang, R., Richardson, J. J., Masters, A. F., Yun, G., Liang, K., & Maschmeyer, T. (2018). Effective Removal of Toxic Heavy Metal Ions from Aqueous Solution by CaCO₃ Microparticles. *Water, Air, & Soil Pollution*, 229(4), 136. <https://doi.org/10.1007/s11270-018-3787-0>