

## DAFTAR PUSTAKA

- Abbas, M., Harrache, Z. and Trari, M., 2020, Mass-Transfer Processes in the Adsorption of Crystal Violet by Activated Carbon Derived from Pomegranate Peels: Kinetics and Thermodynamic Studies, *J. Eng. Fibers Fabr.*, 15, 1558925020919847.
- Abi, F. D. Y. P., Tjahjanto, R.T., and Prananto, Y. P., 2023, Leaching Optimization of Manganese Ore from North Central Timor Using H<sub>2</sub>O<sub>2</sub> as a Reducing Agent, *Indones. Min. J.*, 26(1), 19-27.
- Ahmad, W., Khan, A., Ali, N., Khan, S., Uddin, S., Malik, S., Ali, N., Khan, H., Khan, H., Bilal, M., 2021, Photocatalytic Degradation of Crystal Violet Dye Under Sunlight by Chitosan-Encapsulated Ternary Metal Selenide Microspheres, *Environ. Sci. Pollut. Res.*, 28, 8074–8087.
- Ahmed, M.B., Zhou, J.L., Ngo, H.H., Guo, W., and Chen, M., 2016, Progress in the Preparation and Application of Modified *Biochar* for Improved Contaminant Removal from Water and Wastewater, *Bioresour. Technol.*, 214, 836-851.
- Al-Ghouti, M.A. And Da'ana, D.A., 2020, Guidelines for the Use and Interpretation of Adsorption Isotherm Models: A Review, *J. Hazard. Mater.*, 393, 122383.
- Alqarbeh, M., 2021, Adsorption Phenomena: Definition, Mechanisms, and Adsorption Types: Short Review, *Rhazes: Green Appl. Chem.*, 13, 43-51.
- Anshar, A. M., Taba, P., and Raya, I., 2016, Kinetic and Thermodynamics Studies the Adsorption of Phenol on Activated Carbon from Rice Husk Activated by ZnCl<sub>2</sub>-, *Indones. J. Sci. Technol.*, 1(1), 47-60.
- Balbino, T.A.C., Bellato, C.R., Da Silva, A.D., Neto, J.D.O.M., and De Moura Guimarães, L., 2020, Magnetic Cross-Linked Chitosan Modified with Ethylenediamine and B-Cyclodextrin for Removal of Phenolic Compounds, *Colloids Surf. A: Physicochem. Eng. Asp.*, 602, 125119.
- Belcaid, A., Beakou, B.H., El Hassani, K., Bouhsina, S., and Anouar, A., 2021, Efficient Removal Of Cr(VI) and Co(II) from Aqueous Solution by Activated Carbon from Manihot Esculenta Crantz Agricultural Bio-Waste, *Water Sci. Technol.*, 83(3), 556-566.
- Belcaid, A., Beakou, B.H., Bouhsina, S. And Anouar, A., 2024, Insight into Adsorptive Removal of Methylene Blue, Malachite Green, and Rhodamine B Dyes by Cassava Peel *Biochar* (Manihot Esculenta Crantz) in Single, Binary, and Ternary Systems: Competitive Adsorption Study and Theoretical Calculations, *Biomass Convers. Biorefin.*, 14(6), 7783-7806.

- Cao, D. J., Wang, J. J., Zhang, Q., Wen, Y. Z., Dong, B., Liu, R. J., Yang, X., Geng, G., 2019, Biodegradation of Triphenylmethane Dye Crystal Violet by *Cedecea Davisae*, *Spectrochim. Acta, Part A*, 210, 9–13.
- Chandanshive, V., Kadam, S., Rane, N., Jeon, B.H., Jadhav, J., and Govindwar, S., 2020, In Situ Textile Wastewater Treatment in High-Rate Transpiration System Furrows Planted with Aquatic Macrophytes and Floating Phytobeds, *Chemosphere*, 252, 126513.
- Chen, Y., Zhou, C., Xing, X., Chen, L., Yao, B., Chao, L., Zhang, Y., Wang, J., Dong, J., Liu, C., and Dai, J., 2024, Interconnected Pyrolysis and Activation with In-Situ H<sub>3</sub>PO<sub>4</sub> Activation of *Biochar* from Pear Wood Chips in A Pilot Scale Dual Fluidized Bed, *Chem. Eng. J.*, 495, 153579.
- Deraz, N.M., 2019, Green synthesis, Characterization and Magnetic Properties of Hausmannite Nano Particles, *Acta Phys. Pol. A*, 136(1), 147-150.
- Druzian, D.M., Oviedo, L.R., Wouters, R.D., Loureiro, S.N., Ruiz, Y.P.M., Galembeck, A., Pavoski, G., Espinosa, D.C.R., Dos Santos, C., Dos Santos, J.H.Z., and Da Silva, W.L., 2023, A Bimetallic Nanocatalyst from Carbonaceous Waste for Crystal Violet Degradation, *Mater. Chem. Phys.*, 297, 127455.
- Du, L. N., Wu, H., Li, G., Wei, Y., Wang, F., Xu, L. G., Dong, X. J., 2023, Efficient Degradation and Decolorization of Triphenylmethane Dyes by *Serratia* Sp. Wkd Under Extreme Environmental Conditions and The Mechanism, *Int. Biodeterior. Biodegrad.*, 179, 105565.
- Du Plessis, A., 2022, Persistent Degradation: Global Water Quality Challenges and Required Actions, *One Earth*, 5(2), 129-131.
- El-Desouky, M.G., Khalil, M.A.G., El-Afify, M.A.M., El-Bindary, A.A., and El-Bindary, M.A., 2022, Effective Methods for Removing Different Types of Dyes–Modelling Analysis Statistical Physics Treatment and Dft Calculations: A Review, *Desalin. Water Treat.*, 280, 89-127.
- Enoch, N.N., Frances, E.C., Johnson, O.O., Eziamaka, A.E.C., and Onyinye, M., 2022, Proximate Analysis and Mineral Composition of the Peels of Three Varieties of Sweet Cassava, *Asian J. Microbiol. Biotechnol.*, 7(2), 35-41.
- Fatombi, J.K., Osseni, S.A., Idohou, E.A., Agani, I., Neumeyer, D., Verelst, M., Mauricot, R., and Aminou, T., 2019, Characterization and Application of Alkali-Soluble Polysaccharide of *Carica Papaya* Seeds for Removal of Indigo Carmine and Congo Red Dyes from Single and Binary Solutions, *J. Environ. Chem. Eng.*, 7(5), 103343.

- Garces Goncalves Jr, P.R., De Abreu, H.A., and Duarte, H.A., 2018, Stability, Structural, and Electronic Properties of Hausmannite (Mn<sub>3</sub>O<sub>4</sub>) Surfaces and Their Interaction with Water, *J. Phys. Chem. C*, 122(36), 20841-20849.
- Guilhen, S., Watanabe, T., Tiekko Silva, T., Rovani, S., Takehiro Marumo, J., Alberto Soares Tenório, J., Mašek, O., and Goulart De Araujo, L., 2022, Role of Point of Zero Charge in The Adsorption of Cationic Textile Dye on Standard *Biochars* from Aqueous Solutions: Selection Criteria and Performance Assessment, *Recent Progr. Mater.*, 4(2), 1-30.
- Hokkanen, S., Bhatnagar, A., and Sillanpää, M., 2016, A Review on Modification Methods to Cellulose-Based Adsorbents to Improve Adsorption Capacity, *Water Res.*, 91, 156-173.
- Hubbe, M.A., Azizian, S., and Douven, S., 2019, Implications of Apparent Pseudo-Second-Order Adsorption Kinetics onto Cellulosic Materials: A Review, *Bioresour.*, 14(3).
- Hussain, S., Aslam, A., Tajammal, A., Othman, F., Mustafa, Z., Alsuhaibani, A.M., Refat, M.S., Shahid, M., Sagir, M., and Zakaria, Z.A., 2024, Tagetes Erecta-Mediated Biosynthesis of Mn<sub>3</sub>O<sub>4</sub> Nanoparticles: Structural, Electrochemical, and Biological investigations, *ACS Omega*, 9(33), 35408-35419.
- Iftekhhar, S., Ramasamy, D.L., Srivastava, V., Asif, M.B., and Sillanpää, M., 2018, Understanding the Factors Affecting the Adsorption of Lanthanum Using Different Adsorbents: A Critical Review, *Chemosphere*, 204, 413-430.
- Irawati, H., Aprilita, N.H., and Sugiharto, E., 2018, Adsorpsi Zat Warna Kristal Violet Menggunakan Limbah Kulit Singkong (Manihot Esculenta), *Bimipa*, 25(1), 17-31.
- Jawad, A.H., Abdulhameed, A.S., Wilson, L.D., Syed-Hassan, S.S.A., Alothman, Z.A., and Khan, M.R., 2021, High Surface Area and Mesoporous Activated Carbon from Koh-Activated Dragon Fruit Peels for Methylene Blue Dye Adsorption: Optimization and Mechanism Study, *Chin. J. Chem. Eng.*, 32, 281-290.
- Kementerian Lingkungan Hidup, 2014, Peraturan Menteri Lingkungan Hidup Republik Indonesia Nomor 5 Tahun 2014 Tentang Baku Mutu Air Limbah, Jakarta, KLH.
- Kishor, R., Purchase, D., Saratale, G.D., Saratale, R.G., Ferreira, L.F.R., Bilal, M., Chandra, R., and Bharagava, R.N., 2021, Ecotoxicological and Health Concerns of Persistent Coloring Pollutants of Textile Industry Wastewater and Treatment Approaches for Environmental Safety, *J. Environ. Chem. Eng.*, 9(2), 105012.

- Leng, L., Xiong, Q., Yang, L., Li, H., Zhou, Y., Zhang, W., Jiang, S., Li, H., and Huang, H., 2021, An Overview on Engineering the Surface Area and Porosity of *Biochar*, *Sci. Total Environ.*, 763, P.144204.
- Li, D., Li, Y., He, S., Hu, T., Li, H., Wang, J., Zhang, Z., and Zhang, Y., 2024, Resourcization of Argillaceous Limestone with  $Mn_3O_4$  Modification for Efficient Adsorption of Lead, Copper, and Nickel, *Toxics*, 12(1), 72.
- Liu, W.J., Jiang, H., and Yu, H.Q., 2015, Development of *Biochar*-Based Functional Materials: Toward a Sustainable Platform Carbon Material, *Chem. Rev.*, 115(22), 12251-12285.
- Liu, Y., Luo, J., Tang, L., Feng, C., Wang, J., Deng, Y., Liu, H., Yu, J., Feng, H. and Wang, J., 2020, Origin of the Enhanced Reusability and Electron Transfer of the Carbon-Coated  $Mn_3O_4$  Nanocube for Persulfate Activation, *ACS Catal.*, 10(24), 14857-14870.
- Mansournia, M., Azizi, F., and Rakhshan, N., 2015, A novel Ammonia-Assisted Method for The Direct Synthesis of  $Mn_3O_4$  Nanoparticles at Room Temperature and Their Catalytic Activity During the Rapid Degradation of Azo Dyes, *J. Phys. Chem. Solids*, 80, 91-97.
- Mantellato, S., Palacios, M., and Flatt, R.J., 2015, Reliable Specific Surface Area Measurements on Anhydrous Cements, *Cem. Concr. Res.*, 67, 286-291.
- Maqbool, Q., Cavallini, I., Lasemi, N., Sabbatini, S., Tittarelli, F., and Rupprechter, G., 2024, Waste-Valorized Nanowebs for Crystal Violet Removal from Water, *Small Sci.*, 4(4), 2300286.
- Marco-Brown, J.L., Guz, L., Olivelli, M.S., Schampera, B., Sánchez, R.T., Curutchet, G. and Candal, R., 2018, New Insights on Crystal Violet Dye Adsorption on Montmorillonite: Kinetics and Surface Complexes Studies, *Chem. Eng. J.*, 333, 495-504.
- Mhemeed, A.H., 2018, A General Overview on the Adsorption, *IJONS*, 9(51), 16127-16131.
- Micháleková-Richveisová, B., Frišták, V., Pipiška, M., Ďuriška, L., Moreno-Jimenez, E., and Soja, G., 2017. Iron-Impregnated *Biochars* as Effective Phosphate Sorption Materials, *Environ. Sci. Pollut. Res.*, 24, 463-475.
- Muhammad, M., 2019, Penyerapan B-Karoten Menggunakan Karbon Aktif Tempurung Kelapa Sawit: Kajian Kinetika, *J. Teknol. Kim. Unimal*, 3(2), 53-63.
- Nandiyanto, A. B. D., Girsang, G. C. S., Maryanti, R., Ragadhita, R., Anggraeni, S., Fauzi, F. M., and Al-Obaidi, A. S. M., 2020, Isotherm Adsorption

Characteristics of Carbon Microparticles Prepared from Pineapple Peel Waste, *Commun. Sci. Technol.*, 5(1), 31-39.

- Nandiyanto, A.B.D., Ragadhita, R., and Fiandini, M., 2023, Interpretation of Fourier Transform Infrared Spectra (FTIR): A Practical Approach in the Polymer/Plastic Thermal Decomposition, *Indones. J. Sci. Technol.*, 8(1), 113-126.
- Noorani, N., Barzegar, B., Mehrdad, A., Aghdasinia, H., Peighambardoust, S.J., and Kazemian, H., 2023, CO<sub>2</sub> Capture in Activated Pyrolytic Coke/Metal Oxide Nanoparticle Composites, *Colloids Surf. A: Physicochem. Eng. Asp.*, 679, 132554.
- Qin, M., Yin, T., and Shen, W., 2016, The Interaction Between Crystal Violet and Bovine Serum Albumin: Spectroscopic and Molecular Docking Investigations, *J. Dispersion Sci. Technol.*, 37(11), 1623-1629.
- Rahdar, S., Rahdar, A., Zafar, M. N., Shafqat, S.S., and Ahmadi, S., 2019, Synthesis and Characterization of MgO Supported Fe-Co-Mn Nanoparticles with Exceptionally High Adsorption Capacity for Rhodamine B Dye, *J. Mater. Res. Technol.*, 8, 3800–3810.
- Rahma, F., Rahmadina, R., Hardiansyah, E., Audi, F., Lubis, A., and Hasriana, E., 2024, Pemanfaatan Kulit Singkong (Manihot Utilisima) Sebagai Bahan Pakan Ternak Alternatif di Desa Tuntungan Ii, *J. Biol. Educ. Sci. Technol.*, 7(1), 1094-1100.
- Rahmat, M., Rehman, A., Rahmat, S., Bhatti, H.N., Iqbal, M., Khan, W.S., Bajwa, S.Z., Rahmat, R., and Nazir, A., 2019, Highly Efficient Removal of Crystal Violet Dye from Water by MnO<sub>2</sub> Based Nanofibrous Mesh/Photocatalytic Process, *J. Mater. Res. Technol.*, 8(6), 5149-5159.
- Raj, B.G.S., Asiri, A.M., Wu, J.J., and Anandan, S., 2015, Synthesis of Mn<sub>3</sub>O<sub>4</sub> Nanoparticles Via Chemical Precipitation Approach for Supercapacitor Application, *J. Alloys Compd.*, 636, 234-240.
- Rizwan, M., Ali, S., Qayyum, M.F., Ibrahim, M., Zia-Ur-Rehman, M., Abbas, T., and Ok, Y.S., 2016, Mechanisms of Biochar-Mediated Alleviation of Toxicity of Trace Elements in Plants: a Critical Review, *Environ. Sci. Pollut. Res.*, 23, 2230-2248.
- Rouahna, N., Salem, D.B., Bouchareb, I., Nouioua, A., Ouakouak, A., Fadel, A., Hamdi, N., and Boopathy, R., 2023, Reduction of Crystal Violet Dye from Water by Pomegranate Peel–Derived Efficient Biochar: Influencing Factors and Adsorption Behaviour, *Water, Air, Soil Pollut.*, 234(5), 324.

- Roy, D.C., Biswas, S.K., Saha, A.K., Sikdar, B., Rahman, M., Roy, A.K., Prodhan, Z.H., and Tang, S.S., 2018, Biodegradation of Crystal Violet Dye by Bacteria Isolated from Textile Industry Effluents, *PeerJ*, 6, 5015.
- Sayyed, S.G., Shaikh, A.V., Dubal, D.P., and Pathan, H.M., 2021, Paving the Way Towards Mn<sub>3</sub>O<sub>4</sub> Based Energy Storage Systems, *ES Energy Environ.*, 14, 3-21.
- Shakila, P. B., 2018, Removal of Crystal Violet from Wastewater Using ZnCl<sub>2</sub> Activated Crescentia Cujete Carbon: Adsorption Isotherm and Kinetics, *J. Pharm, Biol. Sci.*, 9(2), 311 – 319.
- Shirendev, N., Bat-Amgalan, M., Aleksandr, A., Gunchin, B., and Yunden, G., 2021, *Cu (II), Pb (II) and Cr (VI) Adsorption on the Modified Activated Carbon*, In *5<sup>th</sup> International Conference on Chemical Investigation and Utilization of Natural Resource (ICCIUNR-2021)*, Atlantis Press.
- Suhas, Gupta, V.K., Carrot, P.J.M., Singh, R., Chaudhary, M., and Kuhswaha, S., 2016, Cellulose: A Review as Natural, Modified, and Activated Carbon Adsorbent, *Bioresour. Technol.*, 216, 1066-1076.
- Sukhdev, A., Challa, M., Narayani, L., Manjunatha, A.S., Deepthi, P.R., Angadi, J.V., Kumar, P.M., and Pasha, M., 2020, Synthesis, Phase Transformation, and Morphology of Hausmannite Mn<sub>3</sub>O<sub>4</sub> Nanoparticles: Photocatalytic and Antibacterial Investigations, *Heliyon*, 6(1).
- Tan, K. L. and Hameed, B. H., 2017, Insight into the Adsorption Kinetics Models for The Removal of Contaminants from Aqueous Solutions, *J. Taiwan Inst. Chem. Eng.*, 74, 25-48.
- Tholkappiyan, R., Naveen, A.N., Vishista, K., and Hamed, F., 2018, Investigation on the Electrochemical Performance of Hausmannite Mn<sub>3</sub>O<sub>4</sub> Nanoparticles by Ultrasonic Irradiation Assisted Co-Precipitation Method for Supercapacitor Electrodes, *J. Taibah Univ. Sci.*, 12(5), 669-677.
- Tran, T.K.N., Dang, N.K., Doan, V.D., Tran, V.A., Vasseghian, Y., and Aminabhavi, T.M., 2023, Mn<sub>3</sub>O<sub>4</sub>/Activated Carbon Nanocomposites for Adsorptive Removal of Methylene Blue, *Chem. Eng. J.*, 474, 145903.
- Villota, S.M., Lei, H., Villota, E., Qian, M., Lavarias, J., Taylan, V., Agulto, I., Mateo, W., Valentin, M., and Denson, M., 2019, Microwave-Assisted Activation of Waste Cocoa Pod Husk by H<sub>3</sub>PO<sub>4</sub> and KOH—Comparative Insight into Textural Properties and Pore Development, *ACS Omega*, 4(4), 7088-7095.
- Vinayagam, R., Murugesan, G., Varadavenkatesan, T., Bhole, R., Goveas, L.C., Samanth, A., Ahmed, M.B., and Selvaraj, R., 2022, Algal Biomass-Derived



Nano-Activated Carbon for The Rapid Removal of Tetracycline by Adsorption: Experimentation and Adaptive Neuro-Fuzzy Inference System Modeling, *Bioresour. Technol. Rep.*, 20, 101291.

Wang, J. and Guo, X., 2020, Adsorption Kinetic Models: Physical Meanings, Applications, and Solving Methods, *J. Hazard. Mater.*, 390, 122156.

Wang, J. and Wang, S., 2019, Preparation, Modification and Environmental Application of *Biochar*: A Review, *J. Cleaner Prod.*, 227, 1002-1022.

Wathukarage, A., Herath, I., Iqbal, M.C.M., and Vithanage, M., 2019, Mechanistic Understanding of Crystal Violet Dye Sorption by Woody *Biochar*: Implications for Wastewater Treatment, *Environ. Geochem. Health*, 41, 1647-1661.

Zbair, M., Ainassaari, K., Drif, A., Ojala, S., Bottlinger, M., Pirilä, M., Keiski, R.L., Bensitel, M., and Brahmi, R., 2018, Toward New Benchmark Adsorbents: Preparation and Characterization of Activated Carbon from Argan Nutshell for Bisphenol A Removal, *Environ. Sci. Pollut. Res.*, 25, 1869-1882.

Zhao, J., Xu, L., Xie, T., and Xie, C., 2015, Preparation of Mn<sub>3</sub>O<sub>4</sub> from Low-Grade Rhodochrosite Ore by Chemical Bath Deposition Method, *Chin. J. Geochem.*, 34, 55-61.