

## DAFTAR PUSTAKA

- Abu-Eishah, S. I., 2008, Removal of Zn, Cd, and Pb Ions from Water by Sarooj Clay, *Appl. Clay Sci.*, 42(1), 201–205.
- Adekoya, M. A., Oluyamo, S.S., Oluwasina, O.O., and Popoola, A.I., 2018, Structural Characterization and Solid State Properties of Thermal Insulating Cellulose Materials of Different Size Classifications, *BioResources*, 13(1), 906–917.
- Aguado, J., Arsuaga, J.M., Arencibia, A., Lindo, M., and Gascón, V., 2009, Aqueous Heavy Metals Removal by Adsorption on Amine-Functionalized Mesoporous Silica, *J. Hazard. Mater.*, 163(1), 213–221.
- Ahmad, R. and Kumar, R., 2010, Adsorption Studies of Hazardous Malachite Green onto Treated Ginger Waste, *J. Environ. Manage.*, 91(4), 1032–1038.
- Aiken, G.R., McKnight, D.M., Wershaw, R.L., and MacCarthy, P., 1986, *Humic Substances in Soil, Sediment, and Water: Geochemistry, Isolation, and Characterization*, John Wiley & Sons, New York.
- Alemdar, A. and Sain, M., 2008, Isolation and Characterization of Nanofibers from Agricultural Residues - Wheat Straw and Soy Hulls, *Bioresour. Technol.*, 99(6), 1664–1671.
- Amri, A., Supranto dan Fahrurrozi, M., 2004, Kesetimbangan Adsorpsi Optional Campuran Biner Cd(II) dan Cr(III) dengan Zeolit Alam Terimpregnasi 2-Merkaptobenzotiazol, *Jurnal Natur Indonesia*, 6(2), 111–117.
- Asmoro, N.W., Afriyanti and Ismawati, 2018, Yield and Characteristics of Cellulose from Stalks of Corn Plant (*Zea mays*) Extraction Using Different Blanching Time and Concentration of NaOH, *Jurnal Ilmu dan Teknologi Pangan*, 4(1), 283–288.
- Atkins, P., 1999, *Physical Chemistry*, 8<sup>th</sup> Edition, W.H. Freeman and Company, New York.
- Blais, J.F., Dufresne, S. and Mercier, G., 1999, State of the Art of Technologies for Metal Removal from Industrial Effluents, *J. Water Sci.*, 12(4), 687–711.
- Boguta, P., D’Orazio, V., Senesi, N., Sokołowska, Z. and Szewczuk-Karpisz, K., 2019, Insight Into the Interaction Mechanism of Iron Ions with Soil Humic Acids, the Effect of the pH and Chemical Properties of Humic Acids, *J.*

*Environ. Manag.*, 245, 367–374.

Coffey, D., Bell, D. and Handerson, A., 1995, *Cellulose and Cellulose Derivate*, John Wiley and Sons, New York.

Dehvari, M., Jamshidi, B., Jorfi, S., Pourfadakari, S. and Skandari, Z., 2021, Cadmium Removal from Aqueous Solution Using Cellulose Nanofibers Obtained from Waste Sugarcane Bagasse (Scb): Isotherm, Kinetic, and Thermodynamic Studies, *Desalin. Water Treat.*, 221, 218–228.

Dence, C.W. and Reeve, D.W., 1996, *Pulp Bleaching: Principles and Practice*, TAPPI Press, New York.

Fengel, D. and Wegener, G., 1995, *Kayu: Kimia, Ultrastruktur, Reaksi-reaksi*, Gadjah Mada University Press, Yogyakarta.

Foo, K.Y. and Hameed, B.H., 2010, Insights Into the Modeling of Adsorption Isotherm Systems, *J. Chem. Eng.*, 156(1), 2–10.

Gaffney, J.S., Marley, N.A. and Clark, S.B., 1996, Humic and Fulvic Acids and Organic Colloidal Materials in the Environment, *ACS Symposium Series*, Washington DC.

Granström, M., 2009, *Cellulose Derivatives: Synthesis, Properties and Applications*, Helsinki University Printing House, Helsinki.

Haafiz, M.K.M., Hassana, A., Zakariac, Z. and Inuwa, I.M., 2014, Isolation and Characterization of Cellulose Nanowhiskers from Oil Palm Biomass Microcrystalline Cellulose, *Carbohydr. Polym.*, 103(1), 119–125.

Harmsen, P., Bermudez, L. and Bakker, R., 2010, Literature Review of Physical and Chemical Pretreatment Processes for Lignocellulosic Biomass, *Biomass* January, 1–49.

Herwanto, B. dan Santoso, E., 2006, Adsorpsi Ion Logam Pb(II) pada Membran Selulosa-Khitosan Terikat Silang, *Akta Kimindo*, 2(1), 9–24.

Ho, Y. S. and Mckay, G., 1998, A Comparison of Chemisorption Kinetic Models Applied To Pollutant Removal on Various Sorbents, *Trans. Ichem. E.*, 76 B, 332–340.

Ismillayli, N. dan Hermanto, D., 2020, Humic Acid Isolation from Batujai Dam

Lombok Tengah-NTB and its Potential as Reductive–Biosorbent Au(III) in The Batch System, *J. Ilmu Dasar*, 21(1), 43.

Jonoobi, M., Harun, J., Mathew, A.P., Hussein, M.Z.B. and Oksman, K., 2010, Preparation of Cellulose Nanofibers with Hydrophobic Surface Characteristics, *Cellulose*, 17(2), 299–307.

Kayranli, B., 2022, Cadmium Removal Mechanisms from Aqueous Solution by Using Recycled Lignocelluloses, *J. Alexandria Eng.*, 61(1), 443–457.

Kulkarni, S.J. and Kaware, J.P., 2013, A Review on Research for Cadmium Removal from Effluent, *Int. J. Eng. Sci. Innov. Technol.*, 2(4), 465–469.

Lee, H.V., Hamid, S.B.A. and Zain, S.K., 2014, Conversion of Lignocellulosic Biomass to Nanocellulose: Structure and Chemical Process, *Sci. World J.*, 2014, 1–20.

Lestari dan Edward, 2004, Dampak Pencemaran Logam Berat Terhadap Kualitas Air Laut Dan Sumberdaya Perikanan (Studi Kasus Kematian Massal Ikan-Ikan Di Teluk Jakarta), *MAKARA of Science Series*, 8(2), 52–58.

Lestari, M.D., 2018, Ekstraksi Selulosa dari Limbah Pengolahan Agar Menggunakan Larutan NaOH sebagai Prekursor Bioetanol, *Indones. J. Chem. Sci.*, 7(3), 236–241.

Li, C.I., Ji, F., Wang, S., Zhang, J.J., Gao, Q., Wu, J.G., Zhao, L.P., Wang, L.C. and Zheng, L.R., 2015, Adsorption of Cu(II) on Humic Acids Derived from Different Organic Materials, *J. Integr. Agric.*, 14(1), 168–177.

Liao D.D., Zheng, W., Li, X., Yang, Q., Yue, X., Guo, L., Zeng, G., 2010, Removal of Lead(II) from Aqueous Solutions Using Carbonate Hydroxyapatite Extracted from Eggshell Waste, *J. Hazard. Mater.*, 177(1-3), 126-130.

Lynam, M.M., Kilduff, J.E. and Weber, W J., 1995, Adsorption of p-Nitrophenol from Dilute Aqueous Solution: An Experiment in Physical Chemistry with An Environmental Application, *J. Chem. Educ.*, 72(1), 80–84.

Manahan, S.E., 2002, *Environmental Chemistri*, Lewis Publisher, New York.

Marwah, R.A., Supriharyono dan Haeruddin, 2015, Analisis Konsentrasi Kadmium (Cd) dan Timbal (Pb) pada Air dan Ikan dari Perairan Sungai Wakak Kendal, *Diponegoro Journal of Maquares*, 4(3), 37–41.

- De Melo, B.A.G., Motta, F.L. and Santana, M.H.A., 2016, Humic Acids: Structural Properties and Multiple Functionalities for Novel Technological Developments, *Mater. Sci. Eng. C.*, 62, 967–974.
- Motsi, T., Rowson, N.A. and Simmons, M.J.H., 2011, Kinetic Studies of the Removal of Heavy Metals from Acid Mine Drainage by Natural Zeolite, *Int. J. Miner. Process.*, 101, 42–49.
- Nandi, B.K., Goswami, A. and Purkait, M.K., 2009, Adsorption Characteristics of Brilliant Green Dye on Kaolin, *J. Hazard. Mater.*, 161(1), 387–395.
- Nuryono, N., Susanti, V.V.H. and Narsito, N., 2010, Kinetic Study on Adsorption of Chromium(Lil) to Diatomaceous Earth Pre-Treated with Sulfuric and Hydrochloric Acids, *Indones. J. Chem.*, 3(1), 32–38.
- Olivera, S., Santos, M.H., Souza, L.P.F., Mansur, H. S. and Vanconcelos, W.L., 2016, Potential Applications of Cellulose and Chitosan Nanoparticles/Composites in Wastewater Treatment: A Review, *Carbohydr. Polym.*, 153, 600–618.
- Oscik, J., 1982, *Adsorption*, John Wiley and Sons, New York.
- Öztürk, H.B., Vu-manh, H. and Bechtold, T., 2009, Interaction of Cellulose with Alkali Metal Ions and Complexed Heavy Metals, *Lenzinger Berichte*, 87, 142–150.
- Paulino, A.T., Guilherme, M.R., Reis, A.V., Tambourgi, E.B., Nozaki, J. and Muniz, E.C., 2007, Capacity of Adsorption of  $Pb^{2+}$  and  $Ni^{2+}$  from Aqueous Solutions by Chitosan Produced from Silkworm Chrysalides in Different Degrees of Deacetylation, *J. Hazard. Mater.*, 147, 139–147.
- Powell, K. J., Brown, P.L., Byrne, R.H., Gajda, T., Hefter, G., Sjöberg, S. and Wanner, H., 2011, Chemical Speciation of Environmentally Significant Metals with Inorganic Ligands. Part 4: the  $Cd^{2+}$  -OH<sup>-</sup>, Cl<sup>-</sup>,  $CO_3^{2-}$ ,  $SO_4^{2-}$ , and  $PO_4^{3-}$  Systems, *Pure Appl. Chem.*, 83(5), 1163–1214.
- Rahmatullah, Selpiana, Sari, E.O., Putri, R.W., Waluyo, U. dan Andrianto, T., 2020, Kadar Selulosa pada Proses Delignifikasi dari Serat Kapuk Sebagai Bahan Baku Biodegradable Plastic Berbasis Selulosa, *Prosiding AVoER*, 18-19 November 2020, Palembang.
- Rahmawati, A. dan Santoso, S.J., 2013, Studi Adsorpsi Logam Pb(II) dan Cd(II) pada Asam Humat dalam Medium Air, *Alchemy*, 2(1), 46–57.

- Rupiasih, N.N. and Vidyasagar, P.B., 2016, A Review: Compositions, Structures, Properties and Applications of Humic Substances, *J. Adv. Sci. Technol.*, 8, 16–25.
- Santosa, S.J. dan Muzakky, D., 2002, *Kinetika Adsorpsi Logam Berat (Krom, Tembaga dan Uranium) oleh Senyawa Humat Tanah Gambut*, Lembaga Penelitian Universitas Gadjah Mada, Yogyakarta.
- Sekewael, S.J., Latupeirissa, J. and Johannes, R., 2015, Adsorpsi Logam Cd Menggunakan Arang Aktif dari Kulit Buah Coklat (*Theobroma Cacao L.*), *Indones. J. Chem. Res.*, 2, 197–204.
- Silva, L.S., Carvalho, J., Bezerra, R.D.S., Silva, M.S., Ferreira, F.J.L., Osajima, J.A. and Filho, E.C.S., 2018, Potential of Cellulose Functionalized with Carboxylic Acid as Biosorbent for the Removal of Cationic Dyes in Aqueous Solution, *Molecules*, 23(4), 1-14.
- Stevenson, F.J., 1994, *Humus Chemistry: Genesis, Composition, Reactions*, 2<sup>nd</sup> Edition, John Wiley and Sons, New York.
- Stumm, W. and Morgan, J.J., 1996, Metal Ions in Aqueous Solutions: Aspects of Coordination Chemistry, in *Aquatic Chemistry: Chemical Equilibria and Rates in Natural Waters*, 3<sup>rd</sup> Ed., John Willey and Sons Inc., New York.
- Subhedar, P.B. and Gogate, P.R., 2014, Alkaline And Ultrasound Assisted Alkaline Pretreatment For Intensification Of Delignification Process From Sustainable Raw-Material, *Ultrason. Sonochem.*, 21(1), 216–225.
- Sumada, Tamara, P.E. dan Alqani, F., 2011, Isolation Study of Efficient  $\alpha$ -Cellulose from Waste Plant Stem *Manihot Esculenta* Crantz, *Jurnal Teknik Kimia*, 5(2), 434–438.
- Tan, K.H., 1991, *Dasar-Dasar Kimia Tanah*, Terj. Didiek Hajar Geonardi, Gadjamada University Press, Yogyakarta.
- Thanh, N.D. and Nhung, H.L., 2019, Cellulose Modified with Citric Acid and Its Absorption of  $Pb^{2+}$  And  $Cd^{2+}$  Ions, *The 13th International Electronic Conference on Synthetic Organic Chemistry*, 1-30 November, Hanoi.
- Trache, D., Donnot, A., Khimeche, K., Benelmir, R., Brosse, N., 2014, Physico-Chemical Properties and Thermal Stability of Microcrystalline Cellulose Isolated from Alfa Fibres, *Carbohydr. Polym.*, 104(1), 223–230.

- Vogel, 1990, Buku Teks Analisis Anorganik Kualitatif Makro dan Semimikro. Terjemahan Setiono dan Pudjaatmaka, H.A, *Edisi ke-5, Kalman Media Pusaka, Jakarta.*
- Volesky, B. and Naja, G., 2005, Biosorption: Application Strategies, *Proceedings of the 16th Internat. Biotechnol. Symp.*, IBS – Compress Co., Cape Town South Africa.
- Whistler, R.L. and BeMiller, J.N., 2012, *Industrial Gums: Polysaccharides and Their Derivatives*, Third Edition, Academic Press, San Diego.
- Widodo, L.U., Sumada, K., Pujiastuti, C. dan Karaman, N., 2013, Pemisahan Alpha-Selulosa dari Limbah Batang Ubi Kayu Menggunakan Larutan Natrium Hidroksida, *Jurnal Teknik Kimia*, 43–47.
- Xue, Z. Liu, Na., Hu, H., Huang, J., Kalkhajeh, Y.K., Wu, X., Xu, N., Fu, X., Zhan, L. 2019, Adsorption of Cd(II) In Water By Mesoporous Ceramic Functional Nanomaterials, *R. Soc. Open Sci.*, 6(4).
- Yuan, X., Zhou, D., Xia, W., An, J., Zhou, X. and Yin, J., 2020, Adsorption of Cd(II) Ions from Aqueous Solution by Wasted Low-Grade Phosphorus-Containing Oolitic Hematite: Equilibrium, Kinetics, And Thermodynamics, *Desalin. Water Treat.*, 192, 271–282.
- Yumi, J. S., Escudeya, M., Gacitua, M. and Pizarro, C., 2018, Kinetics, Adsorption and Desorption of Cd(II) and Cu(II) on Natural Allophane: Effect of Iron Oxide Coating, *Geoderma*, 319, 70–79.
- Zaini, M.A.A., Amano, Y. and Machida, M., 2010, Adsorption of Heavy Metals Onto Activated Carbons Derived from Polyacrylonitrile Fiber, *J. Hazard. Mater.*, 180(1-3), 52-60.
- Zhang, X., 2014, *Fundamentals of Fiber Science*, DEStech Publications Inc., Pennsylvania.