DAFTAR PUSTAKA

Adamson, A.W. dan Gast, A.P., 1997*, Physical Chemistry of Surface,* 6th ed., John Wiley & Sons Inc, New Jersey.

Allous, D., Essamlali, Y., Chakir, A., Khadhar, S., dan Zahouily, M., 2019, Effective removal of Cu(II) from aqueous solution over graphene oxide encapsulated carboxymethylcellulose-alginate hydrogel microspheres: towards real wastewater treatment plant, *Environ. Sci. Pollut. Res.,* 27 (1): 7476-7492.

Al-Saydeh, S.A., El-Naas, M.H., dan Zaidi, S.J., 2017, Copper Removal from Industrial Water: A Comprehensive Review, *J. Ind. Eng, Chem.*, 3530 (2017): 1-10.

Anonim, 2020, *Peraturan Menteri Lingkungan Hidup Republik Indonesia No 12 Tentang Penyimpanan Limbah Bahan Berbahaya dan Beracun.*

Atkins, P.W., 1994, *Physical Chemistry,* 5th ed., Oxford University Press, Oxford.

Atykyan, N., Revin, V., dan Shutova, V., 2020, Raman and FT-IR Spectroscopy investigation the cellulose structural differences from bacteria *Glucoacetobacter scrofermentans* during the different regimes of cultivation on a molasses media, *AMB Expr,* 10 (84).

Bishop, C., 2007, *Vaccum Deposition onto Web, Films, and Foils*, 1st ed., Elsevier Inc., Oxford.

Bell,. B., Briggs, J.R., Campbell, R.M., Chambers, S.M., Gaarenstroom, P.D., Hippler, J.G., Hook, B.D., Kearns, K., Kenney, J.M., Kruper, W.J., Schreck, D.J., Therlault, C.N., dan Wolfe, C.P., 2008, Glycerin as a Renewable Feedstock for Epichlorohydrin Production. The GTE Process, *Clean-Soil. Air. Water,* 36 (8): 657-661.

Benzaoui, A., Selatnia, A., dan Djabali, D., 2018, Adsorption of Copper (II) Ions from Aqueous Solution Using Bottom Ash of Expred Drugs Incineration, *Adsorp. Sci. Technol*. 36 (1): 114-129.

Budavari, S., Heckelman, P.E., Kinneary, J.F., O'Neil, M.J., dan Smith, A., 1996, *The Merck Index: an Encyclopaerdia of Chemicals, Drugs, and Biologicals,* Whitehouse Station, New Jersey.

Castellan, G.W., 1983, Physical Chemistry, 1st ed, Addison-Wesley, New York.

Chen, R., Zhang, Y., Shen, L., Wang, X., Chen, J., Ma., dan Jiang, W., 2015, Lead(II) and Methylene Blue Removal Using a Fully Biodegradable Hydrogel Based on Starch Imobilized Humic Acid, *Chem. Eng. J.,* 268: 347-355.

Crini, G., 2005, Recent Development in Polysacharide Based Materials Used as Adsorbent in Wastewater Treatment, *Prog. Pol. Sci.*, 30(1): 38-70.

Crawford, R.L., 1981, *Lignin Biodegradation and Transformation,* John Wiley & Sons Inc, New Jersey.

Cuppet, J.D., Duncan, S.E., dan Dietrich, A.M., 2006, Evaluation of Copper Speciation and Water Quality Factors that Affect Aqueous Copper Tasting, *Chem. Senses.,* 31: 689-697.

Deguchi, S., Tsujii, K., dan Horikoshi, K., 2006, Cooking Cellulose in Hot and Compressed Water, *Chem. Comm.,* 31: 3293-3295.

Fajarwati, F.I., Kurniawan, M.A., Fatima, M.N., dan Fikrina, R., 2018, Penghilangan Zat Warna Menggunakan Kompleks Polielektrolit Kitosan-Alginat, *J. Pharm. Clin. Res.,* 3 (1), 36:42.

Falah, I.I., Ruliatima dan Triyono, 2015, Reversible Second Order Kinetics of Sorption-Desorption of Cr(VI) Ion on Activated Carbon from Palm Empty Fruit Bunches, *Indones. J. Chem.,* 15(3): 288-294.

Fischer, F.G. dan Dorferl, H., 2009, The Polyuronic Acid of Brown Algae (Carbohydrates of Algae I), *Biol. Chem.,* 302: (185-182).

Guclu, G., Gurdag, G., dan Ozgumus, S., 2003, Competitive Removal of Heavy Metal Ions by Cellulose Graft Copolymers, *J. Appl. Polym. Sci.,* 90 (8): 2034-2039.

Gombotz, W.R., dan Wee, S., 1998, Protein Release from Alginate Matrice, *Ads. Drug. Deliv. Rev.*, 31 (3): 267-285.

Hajeeth, T., Vijayalakshmi, K., Gomathi, T., dan Sudha, P.N, 2013, Removal of Cu(II) and Ni(II) using cellulose extracted from sisal fiber and cellulose-g-acrylic acid copolymer, *Int. J. Biol. Macromol.,* 62 (2013): 59-65.

Haque, O., dan Mondal, I.H., 2016, Synthesis and Characterization of Cellulose-based Eco-FriendlyHydrogels, *J. Sci. Eng.*, 44 (1):45-53.

Haug, A., dan Smidsrod, O., 1970, Selectivity of Some Anionic Polymers for Divalent Metal Ion, *Acta. Chem. Scand.,* 24 (3): 843-845.

Hashem, A., 2006, Amidoximated Sunflower Stalks (ASFS) as a New Adsorbent for Removal of Cu(II) from Aqueous Solution, *Polym-Plast. Technol.*, 45 (1): 35-42.

Helmiyati dan Apriliza, M., 2017, Characterization and properties of sodium alginate from brown algae used as an ecofriendly superabsorbent, *IOP Conf. Ser. :Mater. Sci. Eng.,* 188 012019.

Ho, Y.S. dan McKay, G., 1999, Pseudo-Second Order Model for Sorption Processes, *Process. Biochem.,* 34: 451-465.

Jensen, J., 2003, *Aquatic Chemistry*, 1st ed., John Wiley & Sons Inc., New Jersey.

Juari, S.J., Narsito, Lesbani, A., 2006, Sorption-Desorption Mechanisme of Zn(III) and Cd(II) on Chitin, *Indo. J. Chem.,* 6 (1): 47-51.

Khasanah, E.N, 2009, Adsorpsi Logam Berat, *OSEANA: Majalah Ilmiah Semi Populer,* 34 (4): 1-8.

Kibami, D., Pongener, C., Rao, K.S., dan Sinha ,D., 2018, Surface Characterization and Adsorption studies of Bambusa vulgaris-a low cost adsorbent, *J. Mater. Environ. Sci.*, 8 (7): 2494-2505

Kamel, S., Hassan E.M., dan El-Sakhawy, 2006, Preparation and Application of Acrylonitrile-Grafter Cyanoethyl Cellulose for The Removal of Copper (ii) Ions, *J. Appl. Polym. Sci.*, 100: 329-334.

Klavins, M. dan Eglite, L. 2001, Immobilistion of Humic Substances, *Colloid. Surfaces. A.,* 203 (1): 47-54.

Klemm, D., Heublein, B., Fink, H., dan Bohn, A., 2005, Cellulose: Fascinating Biopolymer and Sustainable Raw Material, *Angew. Chem. Int. Ed.*, 44 (22): 3358-3393.

Krumm, C., Pfaendtner, J., dan Dauenhauer, P.J., 2016, Millisecond Pulsed Films Unify The Mechanism of Cellulose Fragmentation, *Chem. Mater.*, 28 (9) 3108-3114.

Kurniawati, P., Wiyantoko, B., Kurniawan, A., dan Purbaningtias, T.E., 2013, Kinetic study of Cr(IV) Adsorption on Hydrocalcite Mg/Al with Molar Ratio 2:1, *Eksakta.*, 13 (1): 11-21.

Lavik, E., dan Langer, R., 2004, Tissue Engineering: Current State and Perspective, *Appl. Microbiol. Biotechnol.*, 65 (1): 1-8.

Lim, S., Zheng, Y., Zou, S., dan Chen, J.P., 2009, Removal of Copper by Calcium Alginate Encapsulated Magnetic Sorbent, *Chem. Eng. J.,* 152: 509-513.

Lv, L., Su, F., dan Zhao, X.S., 2006, Sythesis and Characterization of Microporous Titanosilicate ETS-10 With Differen Titanium Precursors, *J. Porous. Mater.,* 13: 263-267.

Lynam, M.M., Kilduff, J.E., dan Webber, J.J., 1995, Adsorption of p-nitropheol from Oilute Aqueous Solution, *J. Chem. Ed.,* 72: 81-81

McDowall, D.J., Gupta, B.S., dan Stannet, V.T., 1984, Grafting of Vinyl Monomers to Cellulose by Ceric Ion Initiation. Prog. Pol. Sci., 10 (1): 1-50.

McHugh, D.J., 2003, *A Guide to The Seaweed Industry,* FAO Fisheries Technical Paper, Rome.

Meija, J., Coplen, B.T., Berglund, M., Brand, W.A., Bievre, P.D., Groning, M., Holden, N.E., Irregeher, J., Loss, R.D., Walczyk, T., dan Prohaska, T., 2013, Atomic Weight of The Element 2013: IUPAC Technical Report, *Pure. Appl. Chem.,* 88 (3): 265-291.

Mohsen, A., dan Nazila, G., 2006, Removal of Copper Ions Cu(II) from Industrial Wastewater: A Review of Removal Method, *Int. J. Epidemiol.,* 3 (3) 283-293

Moret, M., Zhang, L., dan Peters, J.C., 2013, A Polar Copper-Boron One-Electron σ-Bond, *J. Am. Chem. Soc.,* 135 (10): 3792-3795.

Nada, A.M.A., dan Adel, A.M., 2007, Physiochemical Properties of Prepared Ion-Exchange from Cellulose Incorporated with Different Functional Group, *J. Appl. Pol. Sci.*105: 412-419.

O'Connel, D.W., Birkinshaw, C., dan O'Dwyer, T.F., 2008, Heavy Metal Adsorbent Prepared From The Modification of Cellulose: A Review, *Bioresour. Technol.*, 99 (15): 6709-6724.

Oscik, J. dan Cooper, J.L., 1994, *Adsorption*, 1st ed., Ellis Horwoood Ltd., Chicester.

Paswan, G., Prakash, S., dan Nikhil, K., 2014, Biofuel as Green Energy Source: A Review, *Int. J. Eng. Res.*, 2 (3): 124-126.

Penman, A. dan Sanderson, G.R., 1972, A Method of Uronic Acid Sequence in Alginates, *Carbohydr Res.,* 25 (2): 273-82.

Piotrowski, S., Carus, M., 2011, Multi-Criteria Evaluation of Ligno-Cellulosic Niche Crops for Use in Biorefinery Processes, Nova-Institut GmbH, Hurth.

Putera, R.D.H., 2012, Ekstraksi Serat Selulosa Dari Tanaman Eceng Gondok *(Eichornia crassipes)* dengan Variasi Pelarut, *Skripsi,* Program Studi Teknik Kimia UI, Depok.

Raymond, R., Sheskey, P.J., Quinn, M.E., 2009, Handbook Pharmaceutical Excipient, 6th ed., RPS Publishing, London.

Saragih dan Abdi, S., 2008, Pembuatan dan Karakterisasi Karbon Aktif dari Batubara Riau sebagai Adsorben, *Tesis,* Teknik Kimia UI, Depok.

Sag, Y., Nourbakhsh, Z., dan Kutsal, T., 1995, Comparizon of Ca-Alginat and Immobilized *Z. ramigera* as Sorbent for Copper(II) Removal, *Process. Biochem.,* 30 (2): 175-181.

Shaw, D.J., 1980, Introduction to Colloid and Surface Chemistry, 3rd ed., Butterworth & Co., London.

Stevenson, F.J., 1994, *Humus Chemistry: Genesis, Composition, Reactions,* 4th ed, John Wiley & Sons Inc., New Jersey.

Stoklosa, R.J., dan Hodge, D.B., 2012, Extraction, Recovey, and Characterization of Hardwood and Grass Hemicelluloses for Integration into Biorefining Process, *Ind. Eng. Chem. Res.,* 51 (34): 11045-11053.

Szymanska-Chargot, M., Chylinska, M., Gdula, C., Koziol, A., dan Zdunek, A., 2017, Isolation and Characterization of Cellulose from Different Fruit and Vegetable Pomaces, *Polymers*, 9 (10): 495-511.

Tonnesen, H.H. dan Karlsen, J., 2000, Alginate in Drug Delivery Systems, *Drug. Dev. Ind. Pharm.,* 28 (6): 621-630.

Trammell, R., Rajabimoghadam, K., dan Garcia-Bosch, I., 2019, Copper-Promoted Functionalization of Organic Molecules: from Biologically Relevant Cu/O_2 Model Systems to Organometallic Transformation, *Chem. Rev.,* 119 (4): 2954-3031.

Treybal, R., 1981, *Mass Transfer Operations*, 3th ed., McGraw Hill Inc., New York.

Udoetok, I.A., Dimmick, R.M., Wilson, L.D., dan Headley, J.V., 2016, Adsorption properties of Cross-linked cellulose-epichlorohydrin polymers in aqueous solution, *Carbohydr. Polymr.*, 136 (2016): 329-350.

Wang, J. dan Guo, X., 2020, Adsorption Kinetics Models: Physical Meaning, Applications, and Solving Method, *J. Hazard. Mater.*, 390 (2020): 122-156.

Weiner, M.L. Kotkoskie, L.A., 1999, *Excipient Toxicity and Safety,* 1st ed., Marcell Dekker Inc., New York.

Wiberg, E., Weiberg, N., dan Holleman, A.F., 2001, *Inorganic Chemistry*, 1st ed., Academic Press, San Diego.

Wijayanti, A., Susatyo, E.B., Kurniawan, C., dan Sukarjo, 2018, Adsorpsi Logam Cr(VI) dan Cu(II) pada Tanah dan Pengaruh Penambahan Pupuk Organik, *Indo. J. Chem. Sci.,* 7 (3): 242-248.