

## DAFTAR PUSTAKA

- Anwar, J., J. Damanik, N. Bisyam dan A. J. Whitten. 1984. *Ekologi Ekosistem Sumatra*. Yogyakarta; UGM Press. Hlm. 317-424.
- Arninda, dkk. 2014. Adsorpsi ion  $Pb^{2+}$  dengan Menggunakan Kulit Pisang Kepok (*Musa Paradisiaca Linn*). Indonesia Chimica Acta; Vol.7. No. 2, Desember 2014.
- Atkins, P. W., 1999, *Kimia Fisika*, (diterjemahkan oleh : Kartahadiprojo Irma I), edisi ke-2, Erlangga, Jakarta.
- Bhattacharyya, K.G and Gupta, S.S. 2008. Influence of acid activation on adsorption of  $Ni^{2+}$  and  $Cu^{2+}$  kaolinite and montmorillonite: Kinetic and thermodynamic study. *Journal of environmental management* 136: 1-13.
- Bellaid, K. D., dkk. Adsorption Kinetics of some textile dyes onto granular activated carbon. *Journal of Environmental Chemical Engineering* 1 (2013) 496-503.
- Benfield, Larry D, 1982, "Process Chemistry For Water And Wastewater Treatment", Prentice Hall Inc., New Jersey.
- Cheremisinoff, Paul N., Ellerbusch, F. 1987. *Carbon Adsorption Handbook*. Ann Arbor Science Publishers.
- Dabrowski, A., Podkoscielny, P., Hubicki, Z., Barczak, M. 2005. *Adsorption of Phenolic Compounds by Activated Carbon a Critical Review*. *Chemosphere* 58,1049-1070.
- Diao, Y., W.P. Walawender, L.T. Fan. 2002. *Bioresource Technol.* 81 45.
- Do, D.D. 1998. *Adsorption Analysis: Equilibria and Kinetics*. Imperial College Press. London, England.
- Gultom Erika M. 2014. Aplikasi Karbon Aktif dari Cangkang Kelapa Sawit dengan Aktivator  $H_3PO_4$  untuk Penyerapan Logam Berat Cd dan Pb. Medan : Departemen Teknik Kimia FT-USU.
- Gunawan, H. dan C. Anwar. 2005. Kajian Pemanfaatan Mangrove dengan Pendekatan *Silvofishery* Laporan tahunan. Puslitbang Hutan dan Konservasi Alam, Bogor.
- Haimour N.M. and Emeish S., 2006. Utilization of date stones for production of activated carbon using phosphoric acid, waste management, 26, 651-660.
- Hasrianti. 2012. *Adsorpsi Ion  $Cd^{2+}$  Dan  $Cr^{6+}$  Pada Limbah Cair Menggunakan Kulit Singkong*. Makasar. Universitas Hasanudin Makasar.
- Ho, Y.S., Mc Kay, . 1999. Batch Lead  $^{2+}$  removal from Aqueous Solution by Peat : Equilibrium and Kinetics . *Trans IchemE.* 77 (B).
- Imawati, A. dan Adhitiyawardman. 2015. Kapasitas Adsorpsi Maksimum Ion  $Pb^{2+}$  oleh Arang Aktif ampas kopi Teraktivasi HAc dan  $H_3PO_4$ . *JKK*, Volume 4 (2), pp 50-61.
- Jang-soon, K., Seong.-Taek, Y., Jong-Hwa, L., Soon-Oh, K., and Ho-Young, J., 2010, Removal of Divalent Heavy Metals (Cd, Cu, Pb, Zn) and Arsenic (III) from aqueous Solution Using Scoria: Kinetics and Equilibria of Sorption, *Journal of Hazardous Material* 174, pp. 307-313.
- Khasanah. 2009. *Adsorpsi Logam Berat*. Oseana.
- Khopkar, S.M. 1990. *Konsep Dasar Kimia Analitik*. Jakarta. Penelitian Universitas Indonesia. Hal. 216-217.
- Kurniawan, Riski., Musthofa Lutfi., Wahyunanto Agung. N., 2014, *Karakterisasi*

- Luas Permukaan BET (Braunauer, Emmelt dan Teller) Karbon Aktif dari Tempurung Kelapa Sawit dengan Aktivasi Asam Fosfat (H<sub>3</sub>PO<sub>4</sub>)*, Jurnal Keteknik Pertanian Tropis dan Biosistem, 2(1) : 15-20
- Lestari dan Edward 2004. *Dampak pencemaran logam berat terhadap kualitas air laut dan sumber daya perikanan ( Studi Kasus Kematian Massal Ikan-Ikan di Teluk Jakarta)*. Makara, Sains. 8 : 52-58.
- M.S. Shamsuddina, N.R.N. Yusoffa, M.A. Sulaimana, 2016. *Synthesis and Characterization of Activated Carbon Produced from Kenaf Core Fiber Using H<sub>3</sub>PO<sub>4</sub> Activation*. *Procedia Chemistry* 19, 558-565.
- Mahdian dan Saadi, 2008, *Pengaruh Konsentrasi dan pH Larutan terhadap Adsorpsi Timbal<sup>2+</sup> dan Cadmium<sup>2+</sup> pada adsorben Biomassa Apu-apu dengan metode Statis*. Kalimantan scientiae. Nomer.71 Th. XXVI Vol. 1
- Marit Jagtoyen, Bryan McEnaney, John Stencil, Michael Thwaites, dan Frank Derbyshire, 2006. *Activated Carbons from Bituminous Coals by reactions with H<sub>3</sub>PO<sub>4</sub>: Influence of Cleaning*. University of Kentucky Center of Applied Energy Resources 3572 Iron Works Pike. Lexington. KY 40511-8433.
- Ningrum, LP., Lusiana, RA., Nuryanto,R., 2008, *Dekolorisasi Remazol Brilliant Blue dengan Menggunakan Karbon Aktif*, Seminar Tugas Akhir S1, Fakultas MIPA, Universitas Diponegoro, Semarang
- Oscik, J., 1982. *Adsorption*, Jhon wiley & sons, Inc, New York.
- Owamah, H.I. 2013. *Biosorptive removal of Pb<sup>2+</sup> and Cu<sup>2+</sup> from wastewater using activated carbon from cassava peels*. J Mater Cycles Waste Management.
- Rahmawati,A. dan Santoso, S.J. 2012. *Studi Adsorpsi Logam Pb<sup>2+</sup> pada asam Humat dalam medium air*. Alchemy. 2(1); 46-57.
- Riwayati, I. 2014. *Adsorpsi logam berat timbal dan kadmiun pada limbah batik menggunakan biosorbent pulpa kopi terxanthasi*. *Prosiding Seminar Nasional Aplikasi Sains dan Teknologi (SNAST)*. Yogyakarta, pp 211-216.
- S. Yorgun, D. Yildiz, 2005. [Preparation and characterization of activated carbons from Paulownia wood by chemical activation with H<sub>3</sub>PO<sub>4</sub>](#). *Journal of the Taiwan Institute of Chemichal Engineeris* 53, 122-131
- Sahu, M.K., Mandal, S., Dash, S.S., Badhai, P., and Patel, R.K., 2013, Removal of Pb (II) from Aqueous Solution by Acid Activated Red Mud, *Journal of Environmental Chemical Engineering* 1, pp. 13151324.
- Salem, A. dan Sene, R.A., (2011), Removal of Lead from Solution by Combination of Natural ZeoliteKaolin-Bentonite as a New Low Cost Adsorbent, *Chemical Engineering Journal* 174, 619-628.
- Sembiring, Sinaga, 2003, *Arang Aktif (Pengenalan dan Proses Pembuatannya)*; Jurusan Teknik Industri, Fakultas Teknik, Universitas Sumatera Utara; Sumatera Utara.
- Sharma, Y. C., Uma dan Upadhyay, S. N., 2009. *Removal of a cationic dye from waste water by adsorbtion on activated carbon developed from coconut cair, energy and fuel*, 23, 2983-2988.
- Subowo, Kurniansyah AM, Sukristiyonubowo. 1999. Pengaruh Logam Berat Pb dalam Tanah terhadap Kandungan Pb, Pertumbuhan dan asil Tanam Caisem (*Brassica rapa*). *Prosiding Seminar Sumber Daya Tanah, Iklim dan Pupuk*. Puslittanak. Bogor.
- Sudibandriyo, M. 2003. *A Generalized Ono-Kondo Lattice Model For High*

- Pressure on Carbon Adsorben, Ph.D Dissertation, Oklahoma State University.*
- Sukardjo. 1989. *Kimia Fisika*. Jakarta; PT Bina Aksara.
- Sunarya, Y. 2007. *Kimia Umum*. Grafindo. Bandung.
- Supriharyono: 2000. *Pelestraian dan Pengelolaan Sumber daya Alam di Wilayah Pesisir Tropis*. PT. Gramedia Pustaka Utama. Jakarta.
- Treybal, R.E. 1980. *Mass Transfer Operation*, Singapore, Mc.Graw Hill, 3<sup>rd</sup> edition.
- Sunarya, Y. 2007. *Kimia Umum*. Grafindo. Bandung.
- Tumin, N.D.; Chuah, A.I.; Zawani, Z. Dan Rasid, S.A, 2008, Adsorption on Cooper from Aqueous Solution by Elais Guineensis Kernel Activated Carbon, *Journal of Engineering Science and Technology*, 2:180-189.
- Tutik M dan Faizah H. 2001. Aktifasi Arang Tempurung Kelapa Secara Kimia dengan Larutan Kimia ZnCl<sub>2</sub>, KCl dan HNO<sub>3</sub>. Jurusan Teknik Kimia UPN. Yogyakarta.
- Volesky, B., and Naja, G., 2005, Biosorption Application Strategies, In: Proceedings of the 16th Internat, Biotechnol, Symp. (S.T. L.Harisson; DE. Rawlings and J Petersen) (eds.) IBS Compress Co., Capetown South Africa: 531542.
- Widihati, I.A. Gede. 2009. *Adsorpsi Ion Pb<sup>2+</sup> Oleh Lempung Terinterkalasi Surfaktan*. Jurnal Kimia 3 (1). 27-32.
- Yuan, L. dan Liu, Y., 2013, *Removal of Pb<sup>2+</sup> and Zn<sup>2+</sup> from aqueous solution by ceramisite prepared by synthering bentonit, iron powder and activated carbon*. Chemical Engineering journal 215-216, PP.432-439.
- W. Zou, H. Bai., S. Gao, Ke Li. 2013. *Characterization of modified sawdust, kinetic and equilibrium study about methylene blue adsorption in batch mode*. *Korean Journal of Chemical Engineering*. 30; 111-122.