



DAFTAR PUSTAKA

- Abernethy, D.R., DeStefano, A.J., Cecil, T., Zaidi, K., and Williams, R.L., 2010, Metal impurities in food and drugs, *Pharm.Res.*, 27, 5, 750–755.
- Aiken, G.R., McKnight, D.M., Wershaw, R.L., and Maccarthy, P., 1985, *An Introduction to Humic Substances in Soil, Sediment, and Water*, dalam Aiken G.R., McKnight, D.M., Wershaw, R.L., and Maccarthy, P., *Humic Substances in Soil, Sedimen and Water: Geochemistry, Isolation and Characterization*, John Wiley & Sons, New York.
- Atkins, P.W. and Julio, D.P., 2006, *Physical Chemistry*, 8th Ed, Oxford University Press, Oxford.
- Bhattacharyya, K.G. and Gupta, S.S., 2007, Adsorptive Accumulation of Cd(II), Co(II), Cu(II), Pb(II) and Ni(II) from Water on Montmorillonite: Influence of Acid Activation, *J. Colloid Interf. Sci.*, 310, 411 – 424.
- Chen, C., Wang, X., Jiang, H., and Hu, W., 2007, Direct Observation of Macromolecular Structures of Humic Acid by AFM and SEM, *Colloids Surf. A*, 302, 121-125.
- Dambies, L., Vincent, T., Domard, A. and Guibal, E., 2001, Preparation of Chitosan Gel Beads by Ionotropic Molybdate Gelation, *Biomacromol.*, 2, 1198-1205.
- Friberg, L., 1983, Cadmium, *Ann. Rev. Pub. Health*, 4, 367-373.
- Gaffney, J.S., Marley, N.A., and Clark, S.B., 1996, *Humic and Fulvic Acids and Organic Colloidal Materials in the Environment*, dalam Gaffney, J.S., Marley, N.A., and Clark, S.B. (eds.), *Humic and Fulvic Acids: Isolation, Structure, and Environment*, American Chemical Society, Washington.
- Hanzlik, P., Jehlicka, J., Weishaputova, Z. and Sebek, O., 2004, Adsorption of Copper, Cadmium and Silver from Aqueous Solution onto natural Carbonaceous Materials, *Plant. Soil. Environ.*, 50(6), 257-264.
- Hermanto, D., Ismillayli, N., Kurnianingsih, R., dan Kamali, S.R., 2013, Optimalisasi Lahan Kering Kecamatan Bayan-Lombok Utara Menggunakan Asam Humat Terimmobil Dalam Rumpuk Laut Sebagai Pelengkap Pupuk Pada Tanaman Jagung (*Zea mays* L), *Jurnal Ilmu Tanah dan Agroklimatologi*, 10(2), 101-102.
- Ho, Y.S., and McKay, G., 1998, The Kinetics of Sorption of Divalent Metal Ions Onto Sphagnum Moss Peat, *Wat. Res.*, 34(3), 735–742.
- Irawati, U., 2004, Imobilisasi Asam Humat pada Kitosan dan Aplikasinya Sebagai Adsorben Cd(II), *Skripsi*, FMIPA UGM, Yogyakarta.
- Khan, T.A., Peh, K.K., Hung, S.C., 2002. Reporting degree of deacetylation values of chitosan: the influence analytical methods, *J. Pharm. Sci.*, 5(3), 205-212.



- Klavins, M. and Egilte, L., 2002, Immobilisation of Humic Substances, *Colloids Surf., A*, 203, 47-54.
- Kurita, K., Ikeda, H., Yoshida, Y., Shimojoh, M., and Harata, M., 2002, Chemoselective Protection of the Amino Groups of Chitosan by Controlled Phthaloylation: Facile Preparation of a Precursor Useful for Chemical Modifications, *Biomacromolecules*, 3, 1-4.
- Kurita, K., 2006, Chitin and chitosan: functional biopolymers from marine crustaceans, *Mar. Biotechnol.*, 8, 203, 26.
- Lynam, M.M., Kliduff, J.E. and Weber, W.J., 1995, Adsorption of p – Nitrophenol from Dilute Aqueous Solution, *J. Chem. Educ.*, 72(1), 80 – 84.
- Mahajan, S.P., 2002, *Pollution Control in Process Industries*, McGraw-Hill Pub. Co. Ltd., New York.
- Matos, J.R., Cides da Silva, L.C., Dos Santos, L.B.O., Abate, G., Cosentino, I.C., Fantini, M.C.A., and Masini, J.C., 2007, Adsorption of Pb²⁺, Cu²⁺ and Cd²⁺ in FDU-1 Silica and FDU-1 Silica Modified With Humic Acid, *Micropor. Mesopor. Mat.*, 110, 250-258.
- Mourya, V.K. and Inamdar, N.N., 2008, Chitosan-Modifications and Applications: Opportunities Galore, *React. Funct. Polym.*, 68, 1013–1051.
- Muhammad, N., Pair, J., Smith, M.D., and Wheatley, A.D., 1998, Adsorption of Heavy Metal in Slow Sand Filters, *Proceedings of the 24th WEOC International Conference on Water Supply and Sanitation*, Durban, South Africa.
- Muhdarina, Mohammad, A.W., dan Muchtar, A., 2014, Potensi Adsorpsi Polutan Anorganik oleh Lempung Cengar: Kajian Isoterm dan Mekanisme Adsorpsi Batch Kation Ni(II) dalam Media Air, *Repository Universitas Riau, Riau*, 19 – 28.
- Rosca, C., Popa, M.M., Lisa, G., and Chitanu, C.G., 2005, Interaction of Chitosan with Natural or Synthetic Anionic Polyelectrolytes: The Chitosan Carboxymethylcellulose Complex, *Carbohydr. Polym.*, 62, 35-41.
- Saha, T.K., Bhoumik, N.K., Karmaker, S., Ahmed, M.G., Ichikawa, H., and Fukumori, Y., 2010, Adsorption of Methyl Orange onto Chitosan from Aqueous Solution, *J. Water Res. Protect.*, 2, 898-906.
- Sanjay, H.G., Fataftah, A.K., Walia, D.S. and Srivastava, K.C., 1999, *Humasorb-CSTM: a Humic Acid-based Adsorbent to Remove Organic and Inorganic Contaminants, Understanding Humic Substances: Advanced Methods, Properties and Applications*, The Royal Society of Chemistry, Cambridge.
- Santoso, U.T., Irawati, U., Umaningrum, D dan Komari, N., 2007, Pengaruh Pengikatan-Silang Antarmolekul Asam Humat terhadap Kelarutan dan Kemampuannya Mengadsorpsi Pb(II) dan Cd(II), *Seminar Nasional Kimia dan Pendidikan Kimia*, Semarang.



- Santoso, U.T., Umaningrum, D., Irawati, U. dan Nurmasari, R., 2004, Imobilisasi Asam Humat pada Kitosan Menggunakan Metode Reaksi Pengikatan-Silang Terproteksi dan Aplikasinya sebagai Adsorben Pb(II), Cd(II), dan Cr(III), *Indones. J. Chem.*, 8 (2), 177 – 183.
- Sari, E.E., Sabarudin, A., dan Sulistyarti, H., 2009, *Ekstraksi Fasa Padat Perak (I) Menggunakan Kitosan Berikatan Silang (CCTS)*, Universitas Brawijaya, Malang.
- Schnitzer, M. and Hansen, E.H., 1986, Organo-Metallic Interactions in Soil. 8. An Evaluation of Methods for the Determination of Stability Constants of Metal-Fulvic Acid Complexes, *Soil Sci.*, 109, 333-340.
- Shenvy, S.S., Isloor, A.M., Ismail, A.F., Shilton, S.J., and Ahmed, A.A., 2015, Humic Acid Based Biopolymeric Membrane for Effective Removal of Methylene Blue and Rhodamin B, *Ind. Eng. Chem. Res.*, 54, 4965-4975.
- Stevenson, F.J., 1994, *Humus Chemistry: Genesis, Composition, Reaction*, 2nd Ed., John Wiley & Sons Inc, New York.
- Suc, N.V., and Ly, H.T.Y., 2013, Lead (II) Removal From Aqueous Solution by Chitosan Flake Modified With Citric Acid via Crosslinking With Glutaraldehyde, *J. Chem. Technol. Biotechnol.*, 88, 1641-1649
- Sudiono, S., Santosa, S.J. dan Putriasih, E., 2004, Imobilisasi Asam Humat pada Kitosan dan Aplikasinya sebagai Adsorben Pb(II), *Seminar Nasional Kimia XIV*, Yogyakarta.
- Sulistyawati, S., 2008, Modifikasi Tongkol Jagung sebagai Adsorben Logam Berat Pb(II), *Skripsi*, Jurusan Kimia, FMIPA IPB, Bogor.
- Tao Lee, S., Long Mi, F., Ju Shen., and Shing S., 2001, Equilibrium and Kinetic Studies of Copper(II) Ion Uptake by Chitosan-Tripolyphosphate Chelating Resin, *J. Polymer*, 42, 1879-1892.
- Umaningrum, D., Santoso, U.T., Nurmasari, R., dan Yunus, R., 2010, Kinetika Adsorpsi Pb(II), Cd(II) dan Cr(III) pada Adsorben Produk Pengikatan Silang Terproteksi Asam Humat/Kitosan, *Indo. J. Chem.*, 10(1), 80 – 87.
- Valko, M., Morris, H. and Cronin, M.T.D., 2005, Metals, Toxicity and Oxidative Stress, *Curr. Med. Chem.*, 12(10), 1161-1208.
- Vinkler, P., Lakatos, B., and Meisel, J., 1976, Infrared Spectroscopic Investigation of Humic Substances and Their Metal Complexes, *Geoderm.*, 15, 231-242