

## DAFTAR PUSTAKA

- Agnes, M., 2013, Modifikasi Zeolit Alam dengan Cetylmethylammonium Bromida dan Aplikasinya untuk Adsorpsi Ion Cu<sup>2+</sup>, SO<sub>4</sub><sup>2-</sup> dan Zat Warna Anionik Metil Merah, *Skripsi*, Jurusan Kimia FMIPA UGM, Yogyakarta.
- Alkaram, U.F., Mukhlis, A.A., and Al-Dujaili, A.H., 2009, The Removal of Phenol from Aqueous Solutions by Adsorption Using Surfactant-Modified Bentonite and Kaolinite, *J. Hazard. Mater.*, 169-324-332.
- Anonim, 1990, *Permenkes no. 416/MENKES/PER/IX/1990*.
- Apreutesei, R.E., Catrinescu, C., and Teodosiu, C, 2008, Surfactant-Modified Natural Zeolites for Environmental Applications in Water Purification, *Environ. Eng. Manage. J.*, 7, 149–161.
- Atieh, M.A., Bakather, O.Y., Tawabini, B.S., Bukhari, A.A., Khaled, M., Alharthi, M., Fettouhi, M., and Abuilawi, F.A., 2010, Removal of Chromium(III) from Water by Using Modified and Nonmodified Carbon Nanotubes, *J. Nanomater.*, 2010, 1-9.
- Atkins, P.W., 1990, *Physical Chemistry*, 2<sup>nd</sup> Ed., Oxford University Press, Oxford.
- Basri, 2009, Modifikasi Zeolit Alam dengan Propilamina dan N-Setil-N,N,N-Trimetilammonium Bromida (CTAB) dan Aplikasinya untuk Adsorpsi Anion Cr<sub>2</sub>O<sub>7</sub><sup>2-</sup> dan [Fe(CN)<sub>6</sub>]<sup>3-</sup>, *Tesis*, Jurusan Kimia FMIPA UGM, Yogyakarta.
- Breck, D.W., 1984, *Zeolite Molecular Sieves*, John Wiley and Sons, New York.
- Budi, E.S., Suseno, A., dan Cahyono, B., 2013, Modifikasi Zeolit Alam dengan Surfaktan Heksadesiltrimetilammonium Klorida sebagai Adsorben Kation Nitrat, *J. Chem. Inf.*, 1(1), 108-113.
- Canham, G.R., 1996, *Descriptive Inorganic Chemistry*, 2<sup>nd</sup> Ed., W. H. Freeman and Company, New York.
- Casas, J.M., Alvarez, F., and Cifuentes, L., 2000, Aqueous Speciation of Sulfuric Acid Cupric Sulfate Solutions, *J. Chem. Eng. Sci.*, 280, 334-342.
- Cheetam, D.A., 1992, *Solid State Compound*, Oxford university press, 234-237.
- Chen, J.P., and Wu, S., 2004, Simultaneous Adsorption of Copper and Humic Acid onto an Activated Carbon, *J. Colloid. Inter. Sci.*, 280, 334-342.

- Cookey, G.A., and Nwokobia, F.U., 2014, Effect of N-Decyl-N-N-Dimethyl-3-Ammonio-1-Propanesulfonat on The Solution Properties of Sodium Dodecyl sulfate, *J. Appl. Sci. Environ. Manage.*, 18(3), 523-527.
- Darmadi, 2014, Pengolahan Limbah Cair Pabrik Pupuk Urea Menggunakan Advanced Oxidation Processes, *Jurnal Rekayasa Kimia dan Lingkungan*, 10(1), 1-6.
- Delkash, M., Babak, E.B., and Hossein, K., 2015, Using Zeolitic Adsorbents to Cleanup Special Wastewater Streams: A review, *Micropor. Mesopor. Mater.*, 214, 224-241.
- Dentel, S.K., Jamrah, A.I., and Sparks, D.L., 1998, Sorption and Cosorption of 1,2,4-trichlorobenzene and Tanic Acid by Organo-Clays, *Water. Res.*, 32, 3689-3697.
- Doulia, D., Leodopoulos, C., Gimouhopoulos, K., and Rigas, F., 2009, Adsorption of Humic Acid on Acid-Activated Greek Bentonite, *J. Colloid. Inter. Sci.*, 340, 131-141.
- Ertan, A., and Ozkan, C., 2005, CO<sub>2</sub> and N<sub>2</sub> Adsorption on The Acid (HCl, HNO<sub>3</sub>, H<sub>2</sub>SO<sub>4</sub>, and H<sub>3</sub>PO<sub>4</sub> Tread Zeolites, *Adsorpt. Sci.*, 11, 151-156.
- Farisuna, N., 2014, Modifikasi Zeolit Alam dengan Setiltrimetilammonium Bromida sebagai Adsorben NO<sub>3</sub>- dan Pb(II), *Skripsi*, Jurusan Kimia FMIPA UGM, Yogyakarta.
- Fauziyah, N., Sriatun, and Pardoyo, 2015, Adsorption of Indigo Carmine Dye using Cetyltrimethylammonium Bromide (CTAB) Surfactant Modified Zeolite, *Jurnal Sains and Matematika*, 23(4), 121-126.
- Ghadiri, S.K., Nabizadeh, Rs., Mahvi, A.H., Nasser, S., Kazemian, H., Mesdaghinia, A.R., and Nazmara, S., 2010, Methyl Tert-Butyl Ether Adsorption on Surfactant Modified Natural Zeolites, Iran. *J. Environ. Health. Sci. Eng.*, 7(3), 241-252.
- Gerberding, J.L., 2004, *Toxicological Profile for Ammonia*, ATSDR U.S. Department of Health and Human Services, Georgia.
- Gerina, F.K., 2014, Modifikasi Zeolit Alam dengan Setiltrimetil ammonium Bromida untuk Adsorpsi Ion Mn(II) dan Zat Warna Anionik Eosin, *Skripsi*, Jurusan Kimia FMIPA UGM, Yogyakarta.
- Ghiaci, M., Abbaspur, A., Kia, R., and Seyedejn-Azad, F., 2004, Equilibrium Isotherm Studies for The Sorption of Benzene, Toluene, and Phenol onto Organo Zeolite and Synthesized MCM-41, *Sep. Purif. Technol.*, 40, 217-229.

- Guimarães, D. and Leão, V.A., 2011, Studies of Sulfate Ions Removal by The Polyacrylic Anion Exchange Resin Amberlite IRA458: Batch and Fixed-Column Studies, *J. Miner. Water.*, 337-341.
- Gupitasari, D.N., 2017, Zeolit Termodifikasi Setiltrimetilammonium Bromida (CTAB) dan Dodesil Dimetil-3-amonio-1-propana Sulfonat (DPS) untuk Adsorpsi Mg<sup>2+</sup>, SO<sub>4</sub><sup>2-</sup> dan Benzena, *Tesis*, Jurusan Kimia FMIPA UGM, Yogyakarta.
- Haag, W.O., R.M., Lago, and Weisz, P.B., 1984, The Active Site of Acidic Aluminosilicate Catalysts, *Nat.*, 309, 589-591.
- Harries, R.C., 1985, A Field Trial of Seeded Reverse Osmosis for Desalination of a Scaling Type Mine Water, *Desalination*, 56, 227-236.
- He, H.P., Zhou, Q., Martens, W.N., Klopogge, T.J., Yuan, P., Xi, Y.F., Zhu, J.X., and Frost, R.L., 2006, Microstructure of HDTMA<sup>+</sup> Modified Montmorillonites, *Clays Clay Miner.*, 53, 287-293.
- Hedley, C.B., Yuan, G., and Theng, B.K.G., 2006, Thermal Analysis of Montmorillonites Modified with Quarternary Phosphonium and Ammonium Surfactants, *Appl. Clay. Sci.*, 35, 180-188.
- Inglezakis, V.J., Stylianou, M.A., Loizidou, M., and Zorpas, A.A., 2016, Experimental Studies and Modeling of Clinoptilolite and Vermiculite fixed beds for Mn<sup>2+</sup>, Zn<sup>2+</sup> and Cr<sup>3+</sup> Removal, *Desalination and Water Treat.*, 57, 11610-11622.
- Jason, P.P., 2004, Activated Carbon and Some Application for The Remediation Soil and Ground Water Pollution, *J. Chem. Technol. Biotechnol.*, 70, 180-186.
- Kučić, D., Markić, M., and Briški, F., 2012, Ammonium adsorption on Natural Zeolite (Clinoptilolite): Adsorption Isotherm and Kinetics Modeling, *J. Holist. App. Environ.*, 2(4), 145-158.
- Leyva-Ramos, R., Jacobo-Azuara, A., Diaz-Flores, P.E., Guerrero-Coronado, R.M., Mendoza-Baron, J., and Berber-Mendoza, M.S., 2008, Adsorption of Chromium(IV) from an Aqueous Solution on a Surfactant-Modified Zeolite, *J. Colloid. Surf. A: Physicochem. Eng.*, 330, 35-41.
- Li, D., Li, C., and Suzuki, K., 2013, Catalytic Oxidation of VOCs over Al- and Fe-Pillared Montmorillonite, *Appl. Clay. Sci.*, 77(78), 56-60.
- Li, Z., and Bowman, R.S., 1997, Counterion Effects on The Sorption of Cationic Surfactant and Chromate on Natural Clinoptilolite, *J. Environ. Sci. Technol.*, 31, 2407-2412.

- Li, Z., Roy, S.J. Zou, Y. and Bowman, R.S., 1998, Long-term Chemical and Biological Stability of Surfactant-Modified Zeolite, *J. Environ. Sci. Technol.*, 32, 2628-2632.
- Li, Z., Allesi, D., and Allen, L., 2000, Influence of quaternary Ammonium of Sorption of Selected Metal Cations onto Clinoptilolite Zeolite, *J. Environ. Qual.*, 31, 1106-1114.
- Liu, J., Jianlong, W., Xiaoguang, Z., Bimbin, F., Pan, H., and Xuyang, Z., 2015, Preparation and Structural Characterization of Zwitterionic Surfactant Intercalated into NiZN-layered Hydroxide Salts, *J. Phys. Chem. Solids.*, 85, 180-187.
- Liu, N., Wang, M.X., Liu, M.M., Liu, F., Weng, L., Koopal, K.L., and Tan, W.F., 2012, Sorption of Tetracycline on Organo-Montmorillonites, *J. Hazard. Mater.*, 225(226), 28-35.
- Liu, S., Ding, Y., Li, P., Diao, K., Tan, X., Lei, F., Zhan, Y., Li, Q., Huang, B., and Huang, Z., 2014, Adsorption of Anionic Dye Congo Red from Aqueous Solution onto Natural Zeolites Modified with N,N-dimethyldehydroabietylamine Oxide, *J. Chem. Eng.*, 135-144.
- Lubis, A., Inswiasri, dan Tugaswati, A.T., 1987, Ammonium dalam Air Sumur Penduduk, *Bul. Penelit. Kesehat.*, 15(1).
- Ma, L., Qingze, C., Jianxi, Z., Yunfei, X., Hongping, H., Runliang, Z., Qi, T., Godwin, A., and Ayoko, A., 2016, Adsorption of Phenol and Cu(II) onto Cationic and Zwitterionic Surfactant Modified Montmorillonite in Single and Binary System, *J. Chem. Eng.*, 283, 880-888.
- Macingova, E. and Luptakova, A., 2011, Bioremediation of Sulphate-Rich Wastewater, *Proceeding of the 12<sup>th</sup> International Conference on Environmental Science and Technology, Rhodes, Greece.*
- Mahajan, R.K., and Rabia, S., 2011, Analysis of Interfacial and Miscellar Behaviour of Sodium Dioctyl Sulphosuccinate Salt (AOT) with Zwitterionic Surfactants in Aqueous Media, *J. Colloid Interface Sci.*, 363, 275-283.
- Mansouri, N., Rikhtegar, N., Panahi, H.A., Abati, F., and Shahraki, B.K., 2013, Porosity, Characterization and Structural Properties of Natural Zeolite (Clinoptilolite) as a Sorbent, *Environ. Prot. Eng.*, 139-152.
- Metcalf and Eddy, 1991, *Waste Water Engineering Treatment, Disposal and Reuse*, 3<sup>rd</sup> Ed., McGraw Hill Publishing Company Ltd, New Delhi.
- Ming, D.M., Mumpton, F.A., *Zeolites in Soil*, in: Dixon, J.B., and Weed, S.B., 1989, Mineral in Soil Environments, 2<sup>nd</sup> Ed., Soil Science Society of America, Madison, WI., 973-911.

- Miskiyah, 2016, Zeolit Alam Termodifikasi Setiltrimetilammonium Bromida sebagai Adsorben Multifungsi Anion SO<sub>4</sub><sup>2-</sup>, Kation NH<sub>4</sub><sup>+</sup> dan senyawa nonpolar Benzena, *Skripsi*, Jurusan Kimia FMIPA UGM, Yogyakarta.
- Mumpton, F.A., 1999, La Roca Magica: Uses of Natural Zeolite in Agriculture and Industry, *Process. Nat. Acad. Sci.*, 96, 3463-3470.
- Murkani, M., Nasrollahi, M., Ravanbakhsh, M., Bahrami, P., and Fard, N.J.H., 2015, Evaluation of Natural Zeolite Clinoptilolite Efficiency for The Removal of Ammonium and Nitrate from Aquatic Solutions, *J. Environ. Health. Eng. Manage.*, 2(1), 17-22.
- Oscik, J., 1982, *Adsorption*, Ellis Harwood, Ltd., Chichester England.
- Oudejans, J.C., 1984, *Zeolite Catalyst in Some Organic Reaction*, 1<sup>st</sup> Ed., Chemical Research, Netherlands.
- Pohan, M.S.A., 2015, Studi Adsorpsi-Desorpsi Anion Fosfat, Sulfat dan Nitrat pada Zeolit Alam Termodifikasi CTAB, *Tesis*, Departemen Kimia FMIPA UGM, Yogyakarta.
- Sadat, W. Al., Nasser, M.S., F. Chang, H.A., Nasr-El-Din, I.A., and Hussein, 2014, Laboratory Evaluation of The Effects of Additives and pH on The Thermorheological Behaviour of a Viscoelastic Zwitterionic Surfactant used in Acid Stimulation, *J. Pet. Sci. Eng.*, 122, 458-467.
- Saiful, 2005, Adsorpsi Kadmium oleh Bentonit Alam dan Na-Bentonit sebagai Penukar Kation, *J. Sain. Mate.*, No.2.
- Shahmansouri, A., Min, J., Jin, L., C., and Bellona, 2015, Feasibility of Extracting Valuable Minerals from Desalination Concentrate: A Comprehensive Literature Reiview, *J. Clean. Prod.*, 100, 4-16.
- Silva, R., Cadorin, L., and Rubio, j., 2010, Sulphate Ions Removal from an Aqueous Solution: I. Co-Precipitation with Hydrolysed Aluminum-Bearing Salts, *J. Miner. Eng.*, 23, 771-779.
- Smith, J.A., and Galan, A., 1995, Sorption of Nonionic Organic Contaminants to Single and Dual Organic Cation Bentonites from Water, *J. Environ. Sci. Technol.*, 29(3), 685-692.
- Sutrisno, C.T., 2006, *Teknologi Penyediaan Air Bersih*, Edisi: 2, PT. Rineka Cipta, Jakarta.
- Taffarel, S.R and Rubio, J., 2010, Adsorption of Sodium dodecyl benzene sulfonat from aqueous solution using a modified natural zeolite with CTAB. *Miner. Eng.*, 23, 771-779.

- Tosun, L., 2012, Ammonium Removal from Aqueous Solution by Clinoptilolite: Determination of Isotherm and Thermodynamic Parameters and Comparison of Kinetics by The Double Exponential Model and Conventional Kinetic Models, *J. Environ. Res. Public Health. Inst.*, 9, 970-984.
- Vujakovic, A.D., Magdalena, R., Tomasevic, C.M.R., Dakovic, A.S., and Dondur, V.T., 2000, The Adsorption of Sulphate, Hydrogen Chromate and Dihydrogen Phosphate Anions on Surfactant-Modified Clinoptilolite, *Appl. Clay Sci.*, 17, 265-277.
- Wang, S., and Peng, Y., 2010, Natural Zeolites as Effective Adsorbents in Water and Wastewater Treatment, *J. Chem. Eng.*, 156, 11-24.
- Weng, L., Van-Riemsdijk, W.H., and Hiemstra, T., 2007, Adsorption of Humic Acids onto Goethite: Effects of Molar Mass, pH and Ionic Strength, *J. Colloid. Int. Sci.*, 314, 107-118.
- Widiastuti, N., Wu, H., Ang, H.M., and Zhang, D., 2011, Removal of Ammonium from Greywater Using Natural Zeolite, *J. Desalination*, 277, 15-23.
- Xie, Q., Xie, J., Wang, Z., Wu, D., Zhang, Z., and Kong, H., 2013, Adsorption of Organic Pollutants by Surfactant Modified Zeolite as Controlled by Surfactant Chain Length, *J. Micro. Meso. Mater.*, 179, 144-150.
- Yang, L., Wei, J., Liu, Z., Wang, B.J., and Wang, D., 2015, Material Prepared from Drinking Waterworks Sludge as Adsorbent for Ammonium Removal from Wastewater, *J. App. Surf. Sci.*, 330, 228-236.
- Yuanita, D., 2009, Hidrogenasi Katalitik Metil Oleat Menjadi Stearil Alkohol Menggunakan Katalis Ni/Zeolit Alam, *Prosiding Seminar Nasional Kimia UNY*, Yogyakarta.
- Zhu, R.L., Li, M., Xu, Y., Zhu, J.X., and He, H.P., 2014, Co-sorption of Cd and Phosphate on the Surface of a Synthetic Hydroxyiron-Montmorillonite Complex, *Clays Clay Miner.*, 62, 79-88.