

DAFTAR PUSTAKA

- Al-Anber, M., dan Al-Anber, Z. 2007. Utilization of natural zeolite as ion-exchange and sorbent material in the removal of iron. *J. Desal.* 07. 006.
- Altwasser, S., Jiao, J., Steuernagel, S., Weitkamp, J., dan Hunger, M. 2004. Elucidating the dealumination mechanism of zeolite H-Y solid-state NMR spectroscopy. *Stud. Surf. Sci. Catal.* 154.
- Alberty, R. A., dan Daniel, F. 1987. *Physical Chemistry*, 5th ed., SI Version. New York: John Wiley and Sons, Inc.
- Armbruster, T., dan Gunter, M.E. 2001. Crystal structures of natural zeolites. *Rev. Mineralog. Geochem.* 45.1.
- Adamson, A.W. 1990. *Physical Chemistry of Surface*, fifth edition. New York: John Wiley and Sons, Inc.
- Blanco, C., Gonzalez, F., Pesquera, C., Benito, I., Mendioroz, S., Pajares, J. 1989. Differences between one aluminic palygorskite and another magnesian by infrared spectroscopy, *Spectr. Lett.* 22: pp. 659-673.
- Capek, L., Kreibich, V., Dedeczek, J., Grygar, T., Wichterlove, B., Sobalik, Z., Martens, J.A., Brosius, R., and Tokarova, V. 2005. Analysis of Fe species in zeolites by Uv-Vis-Nir, IR spectra and voltametry. Effect of preparation, Fe loading and zeolite type. *Microporous Mesoporous Mater.* 80: 279-289.
- Cotton Albert, F., Wilkinson, G. 1989. *Kimia Anorganik Dasar*. Jakarta: UI-Press.
- Djuangsih, N., A.K. Benito, H. Salim, 1982. *Aspek toksikologi lingkungan*, Laporan ANDAL, Lembaga Ekologi Universitas Padjadjaran, Bandung.
- Dedeczek, J., Gabova, V., dan Wichterlova, B. 2002. The effect of dealumination on the Al distribution in pentasil ring zeolites. *Stud. Surf. Sci. Catal.* 142.
- Dong, J., Chun, F.X, Liu, G. 2002. Synthesis of zincosilicate molecular sieve VPI-7 using vapor phase transport. *Stud. Surf. Sci. Catal.* 142.
- Erdem, E., Karapinar, N., dan Donat, R. 2004. The removal of heavy metal cations by natural zeolite. *J. Colloid Interface Sci.* 280: 309-314.
- Groen, J.C., Moulijn, J.A., dan Ramirez, J.P. 2007. Alkaline posttreatment of MFI zeolites from Accelerated Screening to Scale-up. *Ind. Eng. Chem. Res.* 46: 4193-4201.
- Guth, J.L., dan Henri, K. in Weikamp, J and Puppe, L. eds. 1999. *Catalysis and zeolite fundamentals and applications*. Berlin: Springer Verlag.
- Hadi, P., Barford, J., dan McKay, G. 2013. Toxic heavy metal capture using a novel electronic waste-based material-mechanism, modeling and comparison. *Environ. Sci. Technol.* 47: 8248-8255.
- Hashimoto, S. 2003. Zeolite photochemistry: impact of zeolites on photochemistry and feedback from photochemistry to zeolite science. *J.Photochem. Photobiol.* 4:19-49.
- Huheey, J.E., E.A. Keiter, dan R.L. Keiter, 1993, *Inorganic Chemistry: Principles of Structure and Reactivity*, 4th ed., Harper Collins College Publ., New York.
- Inglezakis, V. J., Loizidou, M. D., and Grigoropoulou, H. P. 2003. Ion exchange of Pb^{2+} , Cu^{2+} , Fe^{3+} on natural clinoptilolite: selectivity determination and influence of acidity on metal uptake. *J. Colloid Interf. Sci.* 261: p. 49-54.

- Jozefaciuk, G., Bowanko, G. 2002. Effect of Acid and Alkali Treatments on Surface Areas and Adsorption Energies of Selected Minerals. *Clays Clay Miner.* 50 No.6:771-783.
- Karge, H.G. 2001. Characterization by IR spectroscopy. Berlin: Elsevier Science Press
- Korkuna, O., Lebda, R., Skubiszewska, J., Vrublevska, T., Gunko, V., Ryczkowski, M. 2006. Structural and physicochemical properties of natural zeolites: Clinoptilolite and mordenite. *Microporous Mesoporous Mater.* 87: 243
- Kim, J.S., and Keane, M.A. 2002. The removal of iron and cobalt from aqueous solutions by ion exchange with Na-Y zeolite: batch, semi-batch and continuous operation. *J. Chem. Technol. Biotechnol.* 77(6): 633.
- Lazer, K., Pal-Borbely, G., Szegedi, A., dan Beyer, H.K. 2002. Coordination and oxidation states of iron incorporated into MCM-41. *Studies in Surface and Catalysis.* 142.
- Lin, S.H., and Juang, R.S. 2002. Heavy metal removal from water by sorption using surfactant-modified montmorillonite. *J. Hazard. Mater.* B 92, p.315-321.
- Mendosa, S.B., Ramos, R.L., Barron, J.M., dan Coronado, R.M.G. 2002. Competitive exchange of lead(II) and cadmium(II) from aqueous solution on clinoptilolite. *Stud. Surf. Sci. Catal.* 142.
- Meier, W.M., and Olson, D.H. 1987. Atlas of Zeolite Structure Types, 2nd rev. edn., London: Butterworths.
- Meier, W.M., Olson, D.H., Baerlocher, Ch. 1996. Atlas of Zeolite Structure Types. 4th revised edn. *International Zeolite Association.* 17:1-230.
- Meier, W.M., Olson, D.H., and Baerlocher, Ch. 2001. Atlas of Zeolite Framework Types. 5th Edn., Amsterdam: Elsevier.
- Maier, S.M., Jentys, A., Janousch, M., Van Bokhoven, J.A. 2012. Unique dynamic changes of Fe cationic species under NH₃-SCR conditions. *J. Phys. Chem. C.* 116: 5846-5856.
- Mori, S. 1999. Iron acquisition by plant. *Curr Opin Plant Biol.* 2: 250-253
- Nuzula, F., 2004, Adsorpsi Cd²⁺, Ni²⁺, dan Mg²⁺ pada 2-Merkapto Benzimidazol yang Diimobilisasikan pada Silika Gel. *Tesis.* FMIPA UGM. Yogyakarta.
- Ohja, K., Pradhan, N.C., dan Samanta, A.N. 2004. Zeolite from fly ash: synthesis and characterization. *Bull. Mater. Sci.* 27, 6: 555-564.
- Ostroski, I.C., Barros, M.A.S.D., Silva, E.A., Dantas, J.H., Arroyo, P.A., dan Lima, O.C.M. 2009. A comparative study for the ion exchange of Fe(III) and Zn(II) on zeolite NaY. *J. Hazard. Mater.* 161: 1404-1412.
- Oscik, J., 1982, *Adsorption*, Ellis Horwood Limited, England.
- Oztas, N.A., Karabakan A., and Topal, O. 2007. Removal of Fe(III) ion from aqueous solution by adsorption on raw and treated clinoptilolite samples. *Micropor. Mesopor. Mater.* 111: p. 200-205.
- Ozkan, F.C., Ulku, S. 2008. Diffusion Mechanism of Water Vapour in A Zeolitic Tuff Rich in Clinoptilolite. *J. Therm. Anal. Calorim.* 94: 699-702.
- Ozkan, F.C., Ulku, S. 2005. The Effect of HCl Treatment on Water Vapor Adsorption Characteristics of Clinoptilolite Rich Natural Zeolite. *Microporous Mesoporous Mater.* 77: 47-53.
- Pearson, R.G. 1968. Hard Soft Acids dan Bases, HSAB, Part I. Fundamental Principles. *J. Chem. Educ.* 45: 581.

- Panagiotopoulou, Ch., Kontori, E., Perraki, Th., dan Kakali, G. 2007. Dissolution of aluminosilicate minerals and by-products in alkaline media. *J. Mater. Sci.* 42: 2967-2973.
- Payra, P., Dutta, P.K. 2003. Zeolites: A Primer, in Auerbach, S.M., Carrado, K.A., Dutta, P.K.,(Ed.). Handbook of Zeolite Science and Technology. *Marcel Dekker New York*, pp 1-19.
- Rivas, F.C., Fuentes, G.R., Berlier, G., Iznaga, I.R., dan Petranovskii, V., Ulloa, R.Z., dan Coluccia, S. 2012. Evidence for controlled insertion of Fe ions in framework of clinoptilolite natural zeolites. *Microporous Mesoporous Mater.* 04. 001.
- Rai, L.L., Gaur, J.P., and Kumar, H.D. 1981. *Phycology and Heavy Metal Pollution. In Biological Review of The Phycology Society*. London: Cambridge University
- Sartori, C. 1997. The characterization of alginate systems for biomedical applications. Tesis of Doctor Philosophy. Department of materials engineering, Brunei University.
- Sastrohamidjojo, H. 1992. *Spektroskopi Inframerah*, cetakan pertama. Yogyakarta: Liberty.
- Sastrohamidjojo, H. 2007. *Spektroskopi*, cetakan ketiga. Yogyakarta: Liberty.
- Sadowska, K., Wach, A., Olejniczak, Z., Kustrowski, P., and Datka, J. 2013. Hierarchic zeolites: zeolite ZSM-5 desilicated with NaOH and NaOH/tetrabutylamine hydroxide. *Microporous Mesoporous Mater.* 167: 82-88.
- Schwertmann, U. 1991. Solubility and dissolution of iron oxides. *Plant Soil.* 130:1-25
- Suardana, I.N. 2008. Optimalisasi Daya Adsorpsi Zeolit Terhadap Ion Kromium(III), Jurnal Penelitian dan Pengembangan Sains & Humaniora Lembaga Penelitian Undiksha, Vol. 2(1), 17-33.
- Subowo, T. dan Sunjaya, A. 1985. *Kimia Fisika 2*. Bandung: Armico.
- Supratman, U. 2010. *Elusidasi struktur senyawa organik*. Bandung: Widya Padjadjaran
- Su, H., Kim, H.S., Seo, S.M., Ko, S.O., Suh, J.M., Kim, G.H., dan Lim, W.T. 2012. Location of Na⁺ ions in fully dehydrated Na⁺ saturated zeolite Y (FAU, Si/Al= 1,56). *Bull. Korean Chem. Soc.* 33(8): 2785-2788.
- Sugono, D., Sugiyono, Qodratillah, M.T., Ruskham, A.G., Puryadi, D., Adiwimarta, S.S., Suratman, S.T. 2008. *Kamus besar bahasa Indonesia pusat bahasa*, edisi keempat. Jakarta: Gramedia Pustaka Utama.
- Svehla, G. 1985. Buku teks analisis anorganik kualitatif makro dan semimikro bagian 1-2. Jakarta. Kalman Media Pustaka.
- Yoo, W.C., Zhang, X., Tsapatsis, M., and Stein, A. 2012. Synthesis of mesoporous ZSM-5 zeolites through desilication and re-assembly processes. *Microporous Mesoporous Mater.* 149: 147-157.
- Zhai, D., Zhao L., Liu, Y., Xu, J., Shen, B., dan Gao, J. 2014. Dissolution and absorption: a molecular mechanism of mesopore formation in alkaline treatment of zeolite. *Chem. Mater.* 27: 67-74.
- Zhu, G., Tan, W., Sun, J., Gong, Y., Zhang, S., Zhang, Z., Liu, L. 2013. Effects and mechanism research of the desilication pretreatment for high-aluminum fly ash. *Energy Fuels.* 27: 6948-6954.
- Ruren Xu, Wenqin Pang, Jihong Yu, Qisheng Huo, Jiesheng Chen. 2007. Chemistry of zeolites and related porous materials synthesis and structure. John Wiley & Sons. ISBN 978-0-470-82233-3