DAFTAR PUSTAKA

An-Chong, C., Shu-Huei, Y., Guo-Syong, C., 2006, Using NaCl particles as porogen to prepare a highly adsorbent chitosan membranes, *J. Membrane Sci*., 280, 163-174.

Anggraeny, B., Sabarudin, A., Rumhayati, B., 2014, Pembuatan kitosan makropori menggunakan garam dapur dan aplikasinya terhadap adsorpsi jingga metil, *J. Student Chem*., 1, 1-7.

Atkins, P. W., 1997, *Physical Chemistry*, Jilid 2, Edisi keempat, Erlangga, Jakarta.

Bourgeois, S., Gernet, M., Pradeau, D., Andremont, A., and Fattal, E., 2006, Evaluation of Critical Formulation Parameters Influencing the Bioactivity of b-Lactamases Entrapped in Pectin Manik-manik, *Int. J. Pharm*., 324, 2-9.

Clark, W. R. dan Gao, D., 2012, Properties of Membranes Used For Hemodialysis Therapy, *Seminar in Dialysis*, 15 (1), 191-195.

Dogan, M., Ozdemir, Y., Alkan, M., 2007, Adsorption kinetics and mechanism of cationic methyl violet and methylene blue onto sepiolite, *J. Dyes Pigments*, 75, 701-713.

Fransina, E. G. dan Tanasale, M., 2008, Studi Kinetika Adsorpsi Biru Metilen a Pada Kitin dan Kitosan, *J. Sains MIPA*, 13 (3), 171-176.

Gerente, C., Lee, V. K. C., Le Cloirec, P., McKay, G., 2007, Application of Chitosan for the Removal of Metals from Wastewaters by Adsorption-Mechanisms and Model Review, *Critical Review in Enviromental Science and Technology*, 37, 41-127.

Ghaee, A., Shariaty-Niassar, M., Barzin, J., Matsuura, T., 2010, Effects of chitosan membrane morphology on copper ion adsorption, *J. Chem Eng*, 165, 46-55.

Ghaee, A., Shariaty-Niassar, M., Barzin, Zarghan, A., 2012, Adsorption of copper and nickel ions on macroporous chitosan membrane: Equilibrium study, *J. App Surf Sci*, 258, 7732-7743.

Gottipati, R. dan Mishra, S., 2010, Application of Biowaste (Waste Generated in Biodisel Plant) as an Adsorbent for the Removal of Hazardous Dye-Methylene Blue-from Aqueous Phase, *Brazilian J. Chem Eng*, 27 (2), 357-367.

Gupta, G. S., Prassad, G., Panday, K. K., Singh, V. N., 1988, Removal of Chrome Dyes from Aqueous Solution by Fly Ash, *J. Water Air Soil Poll*, 32, 384-395

Gurses, A., Dogar, C., Yalcin, M., Acikyildiz, M., Bayrak, R., Karaca, S., 2006, The Adsorption Kinetics of the Cationic Dye, Methylene Blue, onto Clay, *J. Hazard Mat*, B131, 217-228.

Hamidpour, M., Kalbasi, M., Afyuni, M., Shariatmadari, H., Holm, P. E., Hansen, H. C., 2010, Sorption hysteresis of Cd(II) and Pb(II) on natural zeolite and bentonite, *J. Hazard Mat*, 181, 386-395.

Ho, Y. S., Huang C.T., dan Huang H.W., 2002, Euilibirium Sorption Isotherm for Metal Ions on Tree Fren, *Process Biochem*., 37, 145-157.

Ho, Y. S., McKay, G., 1998, The kinetics of sorption of basic dyes from aqueous solutions by sphagnum moss peat, *Canadian J. Chem.Eng*, 76, 822-826.

Jing, Z., Dongqing, C., Guilong, Z., Chuanjie, C., Caili, Z., Guannan, Q., Kang, Z., Zhengyan, W., 2013, Adsorption of methylene blue from aqueous solution onto multiporous palygorskite modified by ion bombardment: Effect of contact time, temperature, pH and ionic strength, *J. App.Clay Sci*, 83-84, 137-143.

Kannan, N., Sundram, M. M., 2001, Kinetics and mechanism of removal of methylene blue by adsorption on various carbon-a comparative study, *J. Dyes Pigments*, 51, 25-40.

Khalid, Zahida, 2001, studies of photochemical kinetics of Methylene blue with reductants, *Thesis*, Department of Chemistry, University of Karachi, Karachi.

Kurniasari, L., Riwayati, I., Suwardiyono, 2012, Pektin sebagai alternatif bahan baku biosorben logam berat, *J. Momentum*, 8 (1), 1-5.

Li, X., Yanfeng, L., Zhengfang, Y., 2011, Preparation of macroporous bead adsorbents based on poly(vinylalcohol)/ chitosan and their adsorption properties for heavy metals from aqueous solution, *J. Chem.Eng*, 178, 60-68.

Liu, L. S., Liu, C. K., Fishman, M. L., Hicks, K. B., 2007, Composite films from pectin and fish skin gelatin or soybean flour protein, *J. Agr.Food.Chem.*, 55 (6), 2349-2355.

Maradang, A. Y., Mirzan, M., Prismawiryanti, 2014, Kajian penggunaan berbagai lempung teraktivasi sebagai adsorben untuk menurunkan kadar amonia, nitrat, dan nitrit dari limbah tahu industri, *J. Nat Sci*, 3 (1), 1-7.

Mardila, V. T., Sabarudin, A., Rumhayati, B., 2014, Pembuatan kitosan makropori menggunakan *epichlorohydrin* sebagai *cross-linker* dan aplikasinya terhadap jingga metil, *J. Student Chem.*, 1 (2), 182-188.

Monser, L., Adhoum, N., 2002, Modified Activied Carbon for The Removal of Copper, Zinc, Chromium and Cyanide from Waste Water, *Sep.Puri. Technol.*, 26 (2-3), 137-146.

Mulder, M., 1991, *Basic Principles of Membrane Technology*, Kluwer Academic Publisher.

Muzzarelli, R. A. A., 2009, Chitins and chitosans for the repair of wounded skin, nerve, cartilege and bone, *J. Carbohyd. Polym.*, 76, 167-182.

Ningrum, A. S., 2014, Studi pelepasan *in vitro* kurkumin dari manik-manik kalsium-pektin-kitosan dengan penambahan pengemulsi asam stearat, *Skripsi*, Jurusan Kimia Fakultas Matematika dan Ilmu Pengetahuan Alam Universitas Gadjah Mada, Yogyakarta.

Nurjanah, S., 2008, Modifikasi pektin untuk aplikasi membran dengan asam dikarboksilat sebagai agen penaut silang, *Skripsi*, Jurusan Kimia Fakultas Matematika dan Ilmu Pengetahuan Alam Institut Pertanian Bogor, Bogor.

Oktari, Liana R., 2014, Pembuatan film komposit kompleks PEC kitosan/karaginan dan pemanfaatannya sebagai adsorben metilen biru, *Tesis*, Jurusan Kimia Fakultas Matematika dan Ilmu Pengetahuan Alam Universitas Gadjah Mada, Yogyakarta.

Riapanitra, A., Setyaningtyas, T., Riyani, K., 2006, Penentuan waktu kontak dan pH optimum penyerapan biru metilen menggunakan abu sekam padi, *J. Ilmiah Kimia*, 1 (1), 41-44.

Rodriquez, A., Garcia, J., Ovejero, G., Mestanza, M., 2009, Adsorption of Anionic and Cationic Dyes on Activated Carbon from Aqueous Solutions: Equilibrium and Kinetics, *J. Hazard. Mat.*, 172 (2-3), 1311-1320.

Royer, B., Cardoso, N. F., Lima, E. C., Vaghetti, J. C. P., Simon, N. M., Calvete, T., Veses, R. C., 2008, Applications of Brazilian pine-fruit shell in natural and carbonized forms as adsorbents to removal of methylene blue from aqueous solutions-Kinetic and equilibrium study, *J. Hazard. Mat.*, 164, 1213-1222.

Saha, T. K., Bhoumik, N. K., Karmaker, S., Ahmed, M. G., Ichikawa, H., Fukumori, Y., 2010, Adsorption of Methyl Orange onto Chitosan from Aqueous Solution, *J. Water Resour. Protec*, 2, 898-906.

Sanford, P. A., dan Hutchings, G. P., 1987, *Industrial polysacharides di dalam: Genetic Engineering, Structure/Property Relation and Application*, Amsterdam: Elsevier.

Sen, S., dan Demirer, G. N., 2003, Anerobic Treatment of Real Textile Waste Water with a Fluidzed Bed Reactor, *J. Water Resour. Protec*, 37, 1868-1878.

Silbey, Robert J., Alberty, Robert A., 2001, *Physical Chemistry*, 659-662, John Wiley and Sons, Inc, New York.

Silitonga, Friska S., 2014, Adsorpsi dan desorpsi metilen biru pada membran polielektrolit kompleks kitosan pektin tertaut silang glutaraldehida, *Tesis*, Jurusan Kimia Fakultas Matematika dan Ilmu Pengetahuan Alam Universitas Gadjah Mada, Yogyakarta.

Siswati, I., Sabarudin, A., Darjito, 2014, Pembuatan kitosan makropori menggunakan *Ethylene Glycol Diglycidyl Ether* (EDGE) sebagai cross-linker dan aplikasinya terhadap jingga metil, *J. Student Chem*., 1 (2), 175-181.

Tanasale, M., Killay, A., Laratmase, M. S., 2011, Kitosan dari limbah kulit kepiting rajungan (*Portunus sanginolentus L*.) sebagai adsorben zat warna biru metilen a, *J. Nat Ind*., 14 (2), 165-171.

Tuny, T., 2013, Adsorpsi desorpsi biru metilen pada membrane kompleks PEC kitosan-pektin, *Tesis*, Jurusan Kimia Fakultas Matematika dan Ilmu Pengetahuan Alam Universitas Gadjah Mada, Yogyakarta.

Wong, W. W., Abbas, F. M. A., Liong, M. T., Azhar, M. E., 2008, Modification of Durian Rind Pectin for Improving Biosorbent Ability, *Int. J. Food Res*, 15 (3), 363-365.

Xie, Y., Liu, Y., Wang, Y., Wang, S., Jiang, T., 2012, Chitosan matrix three dimensionally ordered macroporous structure for nimodipine release, *J. Carbohyd Polym*, 90, 1648-1655.

Zulti, F., Dahlan, K., Sugita, P., 2012, Adsorption of Waste Metal Cr(VI) with Composite Membranes (Chitosan-Silica Rice Husks), *Makara J. Sci*, 16 (3), 163-168.