DAFTAR PUSTAKA

Akhtar, J., and Amin, N.S., 2011, A Review on Process Conditions for Optimum Bio-Oil Yield in Hydrothermal Liquefaction of Biomass, *Renewable and Sustainable Energy Reviews*, **15**: 1615–1624.

Akhtar, J., Kuang, S.K., and Amin, N.S., 2010, Liquefaction of empty palm fruit bunch (EPFB) in alkaline hot compressed water, *Renewable Energy*, **35**: 1220–1227.

Alonso, D.M., Bond, J.Q., and Dumesic, J.A., 2010, Catalytic Conversion of Biomass to Biofuels, *Green Chem*., **12**: 1493–1513.

Anikeev, V., and Fan, M., 2014, *Supercritical Fluid Technology for Energy and Environmental Application*, Elsevier, Exford, UK.

Ashour, A., Amer, M., Marzouk, A., Shimizu, K., Kondo, R., and El-Sharkawy, S., 2013, Corncobs as a Potential Source of Functional Chemicals, *Molecules*, **18**: 13823-13830.

Bazaev, A.R., Abdulagatov, I.M., Bazaev, E.A., and Abdurashidova, A., 2007, PVT Measurements for Pure Ethanol in the Near-Critical and Supercritical Regions, *International Journal of Thermophysics*, **28(1)**: 195-219.

Bhaskar, T., Sera, A., Muto, A., and Sakata, Y., 2008, Hydrothermal Upgrading of Wood Biomass: Influence of The Addition of K_2CO_3 and Cellulose/Lignin Ratio, *Fuel*, **87**: 2236–2242.

Biller, P., and Ross, A.B., 2011, Potential Yields and Properties of Oil from The Hydrothermal Liquefaction of Microalgae with Different Biochemical Content, *Bioresource Technology*, **102**: 215–225.

Brand, S., Hardi, F., Kim, J, and Suh., D.J., 2014, Effect of Heating Rate on Biomass Liquefaction: Differences Between Subcritical Water and Supercritical Ethanol, *Energy*, **68**: 420-427.

Brand, S., Susanti, R.F., Kim, S.K., Lee, H., Kim, J., and Sang, B., 2013, Supercritical Ethanol as an Enhanced Medium for Lignocellulosic Biomass Liquefaction: Influence of Physical Process Parameters, *Energy*, **59**: 173-182.

Brown, R.C., 2011, *Thermochemical Processing of Biomass: Conversion into Fuels, Chemicals, and Power*, John Wiley & Sons, Ltd, Chichester, UK.

Cao, Y., and Pawlowski, A., 2013, Biomass as an Answer to Sustainable Energy. Opportunity Versus Challenge, *Environment Protection Engineering*, **39(1)**: 153-161.

Chen, Y., Wu, Y., Zhang, P., Hua, D., Yang, M., Li, C., Chen, Z., and Liu, J., 2012, Direct Liquefaction of *Dunaliella Tertiolecta* for Bio-Oil in Sub/Supercritical Ethanol–Water, *Bioresource Technology*, **124**: 190–198.

Cheng, S., D'cruz, I., Wang, M., Leitch, M., and Xu, C., 2010, Highly Efficient Liquefaction of Woody Biomass in Hot-Compressed Alcohol-Water Co-solvents, *Energy Fuels*, **24**: 4659–4667.

Cheng, S., Wilks, C., Yuan, Z., Leitch, M., and Xu, C., 2012, Hydrothermal Degradation of Alkali Lignin to Bio-Phenolic Compounds in Sub/Supercritical Ethanol and Water-Ethanol Co-Solvent, *Polymer Degradation and Stability*, **97**: 839-848.

Crocker, M., 2010, *Thermochemical Conversion of Biomass to Liquid Fuels and Chemicals*, The Royal Society of Chemistry, Cambridge, UK.

Dannhauser, W., and Bahe, L.W., 1964. Dielectric Constant of Hydrogedensitasn Bonded Liquids 3. Superheated Alcohols. *Journal of Chemical Physics*, **40 (10)**: 3058 cit. Zhang, J., Chen, W., Zhang, P., Luo, Z., and Zhang, Y., 2013, Hydrothermal Liquefaction of Chlorella Pyrenoidosa in Sub- and Supercritical Ethanol with Heterogeneous Catalysts, *Bioresource Technology*, **133**: 389–397.

Demiral, I., Eryazıcı, A., and Sensoz S., 2012, Bio-oil Production from Pyrolysis of Corncob (Zea mays L.), *Biomass Bioenergy*, **36**:43-49.

Demirbas, A., 2000, Effect of Lignin Content on Aqueous Liquefaction Products of Biomass, *Energy Conversion & Management*, **41**: 1601-1607.

Demirbas, A., 2010, *Biorefineries For Biomass Upgrading Facilities*, Springer, London, UK.

Demirbas, A., 2011, Competitive Liquid Biofuels from Biomass, *Applied Energy*, **88**: 17–28.

Dewan Energi Nasional (DEN), 2014, *Ketahanan Energi Indonesia 2014*, Kementerian Energi dan Sumber Daya Mineral, Jakarta, Indonesia.

Duan, P., Jin, B., Xu, Y., Yang, Y., Bai, X., Wang, F., Zhang, L., and Miao, J., 2013, Thermo-Chemical Conversion of *Chlorella pyrenoidosa* to Liquid Biofuels, *Bioresource Technology*, **133**: 197–205.

Field, C.B., Elliott, J.E., and Lobell, D.B., 2008, Biomass Energy: The Scale of The Potential Resource, *Trends in ecology & evolution*, **23 (2)**: 65-72.

Gan, J., and Yuan, W., 2013, Operating Condition Optimization of Corncob Hydrothermal Conversion for Bio-Oil Production, *Applied Energy*, **103**: 350–357.

Gregg, J.S., and Smith, S.J., 2010, Global and Regional Potential for Bioenergy from Agricultural and Forestry Residue Biomass, *Mitig Adapt Strateg Glob Change*, **15**: 241–262.

Hietala, D.C., Faeth, J.L., and Savage, P.E., 2016, A Quantitative Kinetic Model for The Fast and Isothermal Hydrothermal Liquefaction of Nannochloropsis Sp., *Bioresource Technology*, **214:** 102–111.

Huang, H., and Yuan, X., 2015, Recent Progress in The Direct Liquefaction of Typical Biomass, *Progress in Energy and Combustion Science*, **49**: 59-80.

Huang, H., Yuan, X., Zeng, G., Liu, Y., Li, H., Yin, J., and Wang, X., 2013, Thermochemical Liquefaction of Rice Husk for Bio-Oil Production With Sub- and Supercritical Ethanol As Solvent, *Journal of Analytical and Applied Pyrolysis*, **102**: 60–67.

Huber, G.W., Iborra, S., and Corma, A., 2006, Synthesis of Transportation Fuels from Biomass: Chemistry, Catalysts, and Engineering, *Chem. Rev*., **106**: 4044−4098.

Jena, U., and Das, K.C., 2011, Comparative Evaluation of Thermochemical Liquefaction and Pyrolysis for Bio-Oil Production from Microalgae, *Energy Fuels*, **25**: 5472–5482.

Jena, U., Das, K.C., and Kastner, J.R., 2011, Effect of Operating Conditions of Thermochemical Liquefaction on Biocrude Production from *Spirulina platensis*, *Bioresource Technology*, **102**: 6221–6229.

Jena, U., Das, K.C., and Kastner, J.R., 2012, Comparison of The Effects of Na_2CO_3, $Ca_3(PO_4)_2$, and NiO Catalysts on The Thermochemical Liquefaction of Microalga *Spirulina platensis*, *Applied Energy*, **98**: 368–375.

Kaliyan, N., and Morey, R.V., 2010, Densification Characteristics of Corn Cobs, *Fuel Processing Technology*, **91**: 559–565.

Kementerian Pertanian, 2016, *Outlook Komoditas Pertanian Sub Sektor Tanaman Pangan*, Pusat Data dan Sistem Informasi Pertanian, Jakarta.

Klemm, D., Heublein, B., Fink, H.P., and Bohn, A., 2005, Cellulose: Fascinating Biopolymer and Sustainable Raw Material, *Angew. Chem. Int. Ed.*, **44**: 3358 – 3393.

Kruse, A., and Dahmen, N., 2015, Water – A Magic Solvent for Biomass Conversion, *J. of Supercritical Fluids*, **96**: 36–45.

Kruse, A., and Dinjus, E., 2007, Hot Compressed Water as Reaction Medium and Reactant: Properties and Synthesis Reactions, *J. of Supercritical Fluids*, **39**: 362–380.

Kumar, S., and Gupta, R.B., 2008, Hydrolysis of Microcrystalline Cellulose in Subcritical and Supercritical Water in a Continuous Flow Reactor, *Ind. Eng. Chem. Res.*, **47**: 9321–9329.

Li, H., Yuan, X., Zeng, G., Tong, J., Yan, Y., Cao, H., Wang, L., Cheng, M, Zhang, J., and Yang, D., 2009, Liquefaction of rice straw in sub- and supercritical 1,4-dioxane–water mixture, *Fuel Processing Technology*, 90: 657–663.

Li, H., Yuan, X.Z., Zeng, G.M., Huang, D.L., Huang, H.J., Tong, J.Y., You, Q., Jia, J.C, and Zhou, M. 2010, The Formation of Bio-Oil from Sludge by Deoxy-Liquefaction in Supercritical Ethanol, *Bioresource Technology*, **101**: 2860–2866.

Li, R., Li, B., Yang, T., and Xie, Y., 2013, Liquefaction of Rice Stalk in Sub- and Supercritical Ethanol, *J Fuel Chem Technol*, **41(12):** 1459-1465.

Liu, H., Xie, X., Ren, J., and Sun, R., 2012, 8-Lump Reaction Pathways of Cornstalk Liquefaction in Sub- and Super-Critical Ethanol, *Industrial Crops and Products*, **35**: 250– 256.

Liu, Y., Yuan, X., Huang, H., Wang, X., Wang, H., and Zeng, G., 2013. Thermochemical Liquefaction of Rice Husk for Bio-Oil Production in Mixed Solvent (Ethanol–Water), *Fuel Process. Technol.*, **112**: 93–99.

Liu, Z., and Zhang, F.S., 2008, Effects of Various Solvents on the Liquefaction of Biomass to Produce Fuels and Chemical Feedstocks, *Energy Conversion and Management*, **49**: 3498–3504.

Lu, J., Boughner, E.C., Liotta, C.L., and Eckert, C.A., 2002, Nearcritical and Supercritical Ethanol as A Benign Solvent: Polarity and Hydrogen-Bonding, *Fluid Phase Equilibria*, **198**: 37–49.

Maher, K.D., and Bressler, D.C., 2007, Review: Pyrolysis of Triglyceride Materials for The Production of Renewable Fuels and Chemicals, *Bioresource Technology*, **98**: 2351–2368.

Marcus, Y., 2012, *Supercritical Water*, John Wiley & Sons, Inc., Hoboken, New Jersey, USA.

Martínez, J.L., 2008, *Supercritical Fluid Extraction of Nutraceuticals and Bioactive Compounds*, CRC Press, New York, USA.

Matsumura, Y., Nonaka, H., Yokura, H., Tsutsumi, A., and Yoshida, K., 1999, Co-liquefaction of coal and cellulose in supercritical water, *Fuel*, **78**: 1049–1056.

Mohsen-Nia, M., Amiri, H., and Jazi, B., 2010, Dielectric Constants of Water, Methanol, Ethanol, Butanol and Acetone: Measurement and Computational Study, *J Solution Chem*, **39**: 701–708.

Moller, M., Nilges, P., Harnisch, F., and Schroder, U., 2011, Subcritical Water as Reaction Environment: Fundamentals of Hydrothermal Biomass Transformation, *Chem Sus Chem*, **4**: 566 – 579.

Mukhopadhyay, M., 2000, *Natural Extracts Using Supercritical Carbon Dioxide*, CRC Press, Washington D.C., USA.

Nigam, P.S., and Singh, 2011, Production of liquid biofuels from renewable resources, *Progress in Energy and Combustion Science*, **37**: 52-68.

Offermann, R., Seidenberger, T., Thran, D., Kaltschmitt, M., Zinoviev, S., and Miertus, S., 2011, Assessment of global bioenergy potentials, *Mitig Adapt Strateg Glob Change*, **16**:103–115.

Pandey, A., Larroche, C., Ricke, S.C., Dussap, C.G., and Gnansounou, E., 2011, *Biofuels: Alternative Feedstocks and Conversion Processes*, Elsevier, New York, USA.

Patil, P.T, Armbruster, U, and Andreas Martin, 2014, Hydrothermal Liquefaction of Wheat Straw in Hot Compressed Water and Subcritical Water–Alcohol Mixtures, *J. of Supercritical Fluids*, **93**: 121–129.

Peterson, A.A., Vogel, F., Lachance, R.P., Froling, M., Antal, M.J., and Tester, J.W., 2008, Thermochemical Biofuel Production in Hydrothermal Media: A Review of Sub- and Supercritical Water Technologies, *Energy Environ. Sci.*, **1:** 32–65.

Ross, A.B., Biller, P., Kubacki, M.L., Li, H., Lea-Langton, A., and Jones, J.M., 2010, Hydrothermal Processing of Microalgae Using Alkali and Organic Acids, *Fuel*, **89**: 2234–2243.

Sadeghinezhad, E., Kazi, S.N., Badarudin, A., Oon, C.S., Zubir, M.N.M, and Mehrali, M., 2013, A Comprehensive Review of Bio-Diesel as Alternative Fuel for Compression Ignition Engines, *Renewable and Sustainable Energy Reviews*, **28**: 410–424.

Savage, P.E., 2009, A Perspective on Catalysis in Sub- and Supercritical Water, *J. of Supercritical Fluids*, **47**: 407–414.

Savaliya, M., Dhorajiya, B., and Dholakiya, B., 2013, Recent Advancement in Production of Liquid Biofuels from Renewable Resources: A Review, *Res Chem Intermed*, **41**: 475–509.

Shafiee, S., and Topal, E., 2009, When will fossil fuel reserves be diminished?, *Energy Policy*, **37**: 181–189.

Shi, Y., Li, J., Wang., J., Zhao, T., Yang, H., , Jiang., J., and Jiang., X., 2016, Kinetic and Product Composition Study on The Cellulose Liquefaction in Polyhydric Alcohols, *Bioresource Technology*, **214**: 419–425.

Shuping, Z., Yulong, W., Mingde, Y., Kaleem, I., Chun, Li., and Tong, J., 2010, Production and characterization of bio-oil from hydrothermal liquefaction of microalgae *Dunaliella tertiolecta* cake, *Energy*, **35**: 5406–5411.

Singh, R., Balagurumurthy, B., Prakash, A., and Bhaskar, T., 2015, Catalytic Hydrothermal Liquefaction of Water Hyacinth, *Bioresource Technology*, 178: 157–165.

Tekin, K., and Karagoz, S., 2013, Non-Catalytic and Catalytic Hydrothermal Liquefaction of Biomass, *Res Chem Intermed*, **39**:485–498.

Tekin, K., Karagoz, S., and Bektas, S., 2014, A Review of Hydrothermal Biomass Processing, *Renewable and Sustainable Energy Reviews*, **40**: 673–687.

Tian, C., Li, B., Liu, Z., Zhang, Y., and Lu, H., 2014, Hydrothermal liquefaction for algal biorefinery: A critical review, *Renewable and Sustainable Energy Reviews*, **38**: 933–950.

Toor, S.S., Rosendahl, L., and Rudolf, A., 2011, Hydrothermal Liquefaction of Biomass: A Review of Subcritical Water Technologies, *Energy*, **36**: 2328-2342.

US Energy Information Administration (US-EIA), 2013, *International Energy Outlook*, U.S. Department of Energy, Washington, USA.

US Department of Agriculture (USDA), 2017, *World Agricultural Supply Demands and Estimates*, United States Department of Agriculture, Washington, USA.

Valdez, P.J., Nelson, M.C., Wang, H.Y., Lin, X.N., and Savage, P.E., 2012, Hydrothermal Liquefaction of Nannochloropsis Sp.: Systematic Study of Process Variables and Analysis of The Product Fractions, *Biomass and Bioenergy*, **46**: 317-331.

Valdez, P.J.,and Savage, P.E., 2013, A Reaction Network for the Hydrothermal Liquefaction of *Nannochloropsis sp.*, *Algal Research*, **2:** 416–425.

Valdez, P.J, Tocco, V.J., and Savage, P.E., 2014, A General Kinetic Model for The Hydrothermal Liquefaction of Microalgae, *Bioresource Technology*, **163:** 123–127.

Vasudevan, P.T., and Fu, B., 2010, Environmentally Sustainable Biofuels: Advances in Biodiesel Research, *Waste Biomass Valor*, **1**: 47–63.

Wang, Y., Wang, H., Lin, H., Zheng, Y., Zhao, J., Pelletier, A., and Li, K., 2013, Effects of Solvents and Catalysts in Liquefaction of Pinewood Sawdust for The Production of Bio-Oils, *Biomass and Bio Energy*, **59**: 158-167.

World Bioenergy Association (WBA), 2017, *WBA Global Bioenergy Statistic 2017*, World Bioenergy Association, Stockholm, Sweden.

Xu, C., and Lad, N., 2008, Production of Heavy Oils with High Caloric Values by Direct Liquefaction of Woody Biomass in Sub/Near-critical Water, *Energy & Fuels*, **22**: 635–642.

Xu, C., and Lancaster, J., 2008, Conversion of Secondary Pulp/Paper Sludge Powder to Liquid Oil Products for Energy Recovery by Direct Liquefaction in Hot-Compressed Water, *Water Research*, **42**: 1571 – 1582.

Xu, C.B., and Etcheverry, T., 2008, Hydro-Liquefaction of Woody Biomass in Sub- and Supercritical Ethanol with Iron-Based Catalysts, *Fuel*, **87**: 335–345.

Yan, Y, Hu, M., and Wang, Z., 2010, Kinetic Study on The Liquefaction of Cornstalk in Polyhydric Alcohols, *Industrial Crops and Products*, **32**: 349–352.

Yeh, T.M., Dickinson, J.G., Franck, A., Linic, S., Thompson Jr, L.T., and Savage, P.E., 2013, Hydrothermal Catalytic Production of Fuels and Chemicals from Aquatic Biomass, *J Chem Technol Biotechnol*, **88**: 13–24.

Yin, S., Dolan, R., Harris, M., and Tan, Z., 2010, Subcritical Hydrothermal Liquefaction of Cattle Manure to Bio-Oil: Effects of Conversion Parameters on Bio-Oil Yield and Characterization of Bio-Oil, *Bioresource Technology*, **101**: 3657–3664.

Yin, S., Mehrotra, A.K., and Tan, Z., 2011, Alkaline Hydrothermal Conversion of Cellulose to Bio-Oil: Influence of Alkalinity on Reaction Pathway Change, *Bioresource Technology*, **102**: 6605–6610.

Yu, F., Ruan, R., Chen, P., Deng, S., Liu, Y., and Lin, X., 2007, Liquefaction of Corn Cobs with Supercritical Water Treatment, *Transactions of the ASABE*, **50**: 175–180.

Yuan, X., Wang, J., Zeng, G., Huang, H., Pei, X., Li, H., Liu, Z., and Cong, M., 2011, Comparative Studies of Thermochemical Liquefaction Characteristics of Microalgae Using Different Organic Solvents, *Energy*, **36**: 6406-6412.

Yuan, X.Z. Li, H., Zeng G.M., Tong J.Y., and Xie W., 2007, Sub- and Supercritical Liquefaction of Rice Straw in The Presence of Ethanol–Water and 2-Propanol–Water Mixture, *Energy*, **32**: 2081–2088.

Zhang, B., Huang, H.J., and Ramaswamy, S., 2012, A Kinetics Study on Hydrothermal Liquefaction of High-diversity Grassland Perennials, *Energy Sources, Part A*, **34**:1676–1687.

Zhang, B., von Keitz, M., and Valentas, K., 2009, Thermochemical Liquefaction of High-Diversity Grassland Perennials, *J. Anal. Appl. Pyrolysis*, **84**: 18–24.

Zhang, H., Yang, H., Guo, H., Huang, C., Xiong, L., and Chen, X., 2014, Kinetic Study on The Liquefaction of Wood and Its Three Cell Wall Component in Polyhydric Alcohols, *Applied Energy***, 113:** 1596–1600.

Zhang, J., and Zhang, Y., 2014, Hydrothermal Liquefaction of Microalgae in an Ethanol−Water Co-Solvent To Produce Biocrude Oil, *Energy Fuels*, **28:** 5178−5183.

Zhang, J., Jiang, B., and Wang, D., 2016, Thermogravimetric and Kinetic Analysis of Bio-Crude from Hydrothermal Liquefaction of Enteromorpha Prolifera, *Algal Research*, **18:** 45-50.

Zhang, Y., Ghali, A.E., and Li, B., 2012, Physical Properties of Corn Residues, *American Journal of Biochemistry and Biotechnology*, **8(2)**: 44-53.

Zhong, C., and Wei., X., 2004, A Comparative Experimental Study on The Liquefaction of Wood, *Energy*, **29**: 731–1741.

Zhou, D., Zhang, L., Zhang, S., Fu, H., and Chen, J., 2010, Hydrothermal Liquefaction of Macroalgae *Enteromorpha prolifera* to Bio-oil, *Energy Fuels*, **24**: 4054–4061.

Zhou, D., Zhang, S., Fu, H., and Chen., J., 2012, Liquefaction of Macroalgae Enteromorpha prolifera in Sub-/ Supercritical Alcohols: Direct Production of Ester Compounds, *Energy Fuels*, **26**: 2342−2351.

Zhu, Z., Toor, S.S., Rosendahl, L., Yu, D., and Chen, G., 2015, Influence of Alkali Catalyst on Product Yield and Properties via Hydrothermal Liquefaction of Barley Straw, *Energy*, **80**: 284-292.