DAFTAR PUSTAKA

[1] Kementerian Eenergi dan Sumber Daya Mineral Republik Indonesia, *Handbook of Energy & Economic Statistics of Indonesia 2022*, Jakarta: KESDM Indonesia, 2023.

[2] G. A. Widyaningsih, “Peraturan Peraturan Presiden nomor 22 tahun 2017 tentang rencana umum energi nasional,” 2017.

[3] K. E. R. Indonesia, "Peraturan Menteri Energi dan Sumber Daya Mineral Republik Indonesia Nomor 12 Tahun 2015," Jakarta, 2015.

[4] Marwa, W. H. Hasan, “Peluang dan tantangan teknis implementasi biodiesel dalam upaya peningkatan bauran energi terbarukan di Indonesia,” 2023, [Dalam Jaringan]. Tersedia : https://megashift.fisipol.ugm.ac.id/2023/09/11/peluang-dan-tantangan-teknis-implementasi-biodiesel-dalam-upaya-peningkatan-bauran-energi-terbarukan-di-indonesia/

[5] A. Demirbas, A. Bafail, W. Ahmad, dan M. Sheikh, “Biodiesel production from non-edible plant oils,” *Energy Exploration and Exploitation*, vol. 34, no. 2. Multi-Science Publishing Co. Ltd, hlm. 290–318, 2016.

[6] Badan Pusat Statistik Indonesia, Statistik Karet Indonesia, Jakarta: Badan Pusat Statistik Indonesia, 2022.

[7] K. H. M. Ansor, "In-Situ Esterifikasi Biji Karet (Hevea Brasiliensis) Menggunakan Campuran Metanol dan Iso-propanol dengan Katalis Asam Sulfat Melalui Tahap Degumming," *Skripsi*. Departemen Teknik Nuklir dan Teknik Fisika, Universitas Gadjah Mada, Yogyakarta, 2019.

[8] B. S. Nasional, SNI-7182, Jakarta: BSN, 2015.

[9] A. S. Ramadhas, S. Jayaraj, dan C. Muraleedharan, “Biodiesel production from high FFA rubber seed oil,” *Fuel*, vol. 84, no. 4, hlm. 335–340, 2005.

[10] Widayat, A. D. K. Wibowo, dan Hadiyanto, *Proceedings of the 1st International Conference on Chemical and Material Engineering held on 12-13 September 2012 in Semarang, Indonesia*. Department of Chemical Engineering, Faculty of Engineering, Diponegoro University, 2012.

[11] P. Thaiyasuit, K. Pianthong, dan I. Worapun, “Acid Esterifi cation-Alkaline Transesterifi cation Process for Methyl Ester Production from Crude Rubber Seed Oil,” *Journal of Oleo Science*, vol. 6, hlm. 81-88, 2012.

[12] Widayat, A. D. K. Wibowo, dan Hadiyanto, “Study on production process of biodiesel from rubber seed (*Hevea brasiliensis*) by *in situ* (trans)esterification

method with acid catalyst," dalam *Energy Procedia*, Elsevier Ltd, hlm. 64–73, 2013.

[13] S. H. Dhawane, T. Kumar, dan G. Halder, "Central composite design approach towards optimization of flamboyant pods derived steam activated carbon for its use as heterogeneous catalyst in transesterification of Hevea brasiliensis oil," *Energy Convers Manag*, vol. 100, hlm. 277–287, 2015.

[14] B. Abubakar Abdulkadir, Y. Uemura, A. Ramli, N. Bt Osman, K. Kusakabe, dan T. Kai, "Production of Biodiesel from Rubber Seeds (Hevea Brasiliensis) by *In situ* Transesterification Method," *Journal of the Japan Institute of Energy*, vol. 94, pp.763-768, 2015.

[15] N. Thi Thanh Xuan, H. Van Anh Thi, dan L. Thi Bich Yen, "Biodiesel production from rubber seed oil," *The University of Danang, Journal of Science and Technology*, vol.115, 2017.

[16] B. Oladipo, O. O. Borokini, C. F. Jisieike, dan E. Betiku, "Acid-catalyzed pretreatment of hevea brasiliensis (rubber) oil via esterification process: modeling and optimization studies," *Ife Journal of Technology*, vol. 26, hlm. 1-6, 2019.

[17] S. Lüneburger, A. Lazarin Gallina, L. Cabreira Soares, dan D. Moter Benvegnú, "Biodiesel production from *Hevea brasiliensis* seed oil," *Fuel*, vol. 324, 2022.

[18] N. Prabaningrum, D. Subbarao, dan L. Ismail, *2011 National Postgraduate Conference : NPC 2011 : energy & sustainability : exploring the innovative minds, 19th-20th September 2011, Universiti Teknologi PETRONAS*. IEEE, 2011.

[19] R. D. Idhola, "Studi proses transesterifikasi dalam pembuatan biodiesel dari minyak nyamplung (*Calophyllum inophyllum*) setelah proses esterifikasi," *Skripsi*. Departemen Teknik Nuklir dan Teknik Fisika, Universitas Gadjah Mada, Yogyakarta, 2015.

[20] J. Hill, E. Nelson, S. Polasky dan D. Tiffany, "Environmental, economic, and energetic costs and benefits of biodiesel and ethanol biofuels," *PNAS*, vol. 103, pp. 11206-11210, 2006.

[21] G. Knothe, J. Van Gerpen, dan J. Krahl, *The Biodiesel Handbook*, AOCS Press, 2005.

[22] F. Mayasari dan R. Dalimi, "Vegetable oil based biodiesel feedstock potential in Indonesia," *2014 Makassar International Conference on Electrical Engineering and Infonnatics (MICEEI)*, Makassar, 2014.

[23] A. Pandey, *Handbook of Plant-Based Biofuels*, London: CRC Press, 2009.

[24] D6751 − 20a "Standard Specification for Biodiesel Fuel Blend Stock (B100) for Middle Distillate Fuels."

[25] "EN 14214," Dokumen Teknis

[26] B. Haryanto, S.P., Budidaya Karet Unggul. Yogyakarta: Pustaka Baru Press.

[27] B. A. Abdulkadir, Y. Uemura, A. Ramli, N. B. Osman, K. Kusakabe, dan T. Kai, "Study on extraction and characterization of rubber seeds oil," *Journal of the Japan Institute of* Energy, vol. 94, pp. 445-451, 2014.

[28] A. S. Ramadhas, S. Jayaraj, dan C. Muraleedharan, "Characterization and effect of using rubber seed oil as fuel in the compression ignition engines," *Renew Energy*, vol. 30, no. 5, hlm. 795–803, 2005.

[29] M. H. Abdullah *dkk.*, "Optimization of esterification and transesterification process for biodiesel production from used cooking oil," *Journal of Research and Technology*, vol. 7, no. 2, hlm. 207–216, 2021.

[30] AOCS, "Cd 3d-63 • Acid Value," *sampling and analysis of commercial fats and oils*, 2009.

[31] V. Aslan, "Fuel characterization, engine performance characteristics and emissions analysis of different mustard seed biodiesel: An overview," *Journal of Biotechnology*, vol. 370. Elsevier B.V., hlm. 12–30, 2023.

[32] Rifky Hernando, "Perbaikan kualitas minyak biji karet melalui proses *degumming* menggunakan zeolit dan karbon aktif sebagai bahan baku pembuatan biodiesel," *J. Teknik Mesin*, vol. 02, hlm. 73-79, 2013.

[33] R. Menezes Dos Passos *dkk.*, "Degumming alternatives for edible oils and biodiesel production," *Food Public Health*, vol. 2019, no. 5, hlm. 139–147, 2019.

[34] S. Bija dan S. Heri Suseno, "Purification of sardine fish oil through degumming and neutralization," *JPHPI*, vol.20, pp. 143-152, 2017.

[35] M. D. Luque de Castro dan F. Priego-Capote, "Soxhlet extraction: Past and present panacea," *Journal of Chromatography A*, vol. 1217, no. 16. hlm. 2383–2389, 2010.

[36] A. Sukasri, W. B. Utomo, R. Sjafruddin, dan M. Nursam, "The use of soxhlet techniques in the essential oil extraction from anise seeds (Pimpinella anisum)," *Equilibrium Journal of Chemical Engineering*, vol. 7, no. 1, hlm. 59, 2023.

[37] F. Banat, P. Pal, N. Jwaied, dan A. Al-Rabadi, "Extraction of olive oil from olive cake using soxhlet apparatus," *American Journal of Oil and Chemical Technologies*, vol. 1, no. 4, 2013.

[38] "n-Hexane," Dokumen Teknis.

[39] F. H. Kasim, A. P. Harvey, dan R. Zakaria, "Biodiesel production by *in situ* transesterification," *Biofuels*, vol. 1, no. 2. hlm. 355–365, Mar. 2010.

[40] M. Mathiyazhagan dan A. Ganapathi, "Factors affecting biodiesel production," *Res Plant Biol*, vol. 1, no. 2, hlm. 1–05, 2011.

[41] F. A. Jalil, "Optimasi *in situ* esterifikasi biji karet menggunakan campuran metanol dan n-heksana dengan katalis asam sulfat," *Skripsi*. Departemen Teknik Nuklir dan Teknik Fisika, Universitas Gadjah Mada, Yogyakarta, 2019.

[42] A. Budiman, R. D. Kusumaningtyas, Y. S. Pradana, N. A. Lestari, *Biodiesel Bahan Baku, Proses, dan Teknologi*, Yogyakarta: UGM Press.

[43] P. Hidalgo, C. Toro, G. Ciudad, dan R. Navia, "Advances in direct transesterification of microalgal biomass for biodiesel production," *Rev Environ Sci Biotechnol*, vol. 12, no. 2, hlm. 179–199, 2013.

[44] T. Pham, U. Nguyen, K. Imamura, M. Furuta, dan Y. Maeda, "Transesterification using isopropanol as a co-solvent for the production of green biodiesel fuel," *Int J Energy Res*, vol. 46, no. 4, hlm. 4352–4361, 2022.

[45] "Methanol," Dokumen Teknis.

[46] "Isoprophyl Alcohol," Dokumen Teknis

[47] N. A. Mufidah, "Penurunan bilangan asam minyak biji nyamplung (*Calophyllum inophyllum*) dengan *in situ* esterifikasi menggunakan campuran metanol dan isopropanol dengan katalis asam sulfat," *Skripsi*. Departemen Teknik Nuklir dan Teknik Fisika, Universitas Gadjah Mada, Yogyakarta, 2021.

[48] M. Abdul Hakim Shaah *et al.*, "A review on non-edible oil as a potential feedstock for biodiesel: physicochemical properties and production technologies," *RSC Advances*, vol. 11, no. 40. Royal Society of Chemistry, hlm. 25018–25037, 2021.

[49] "Asam Sulfat," Dokumen Teknis.

[50] "Natrium Hidroksida," Dokumen Teknis.

[51] R. H. Myers, D. C. Montgomery, dan C. M. Andersoon-Cook, *Response Surface Methodology*, third edition, Canada: Wiley, 2009.

[52] N. Szpisják-Gulyás, A. N. Al-Tayawi, Z. H. Horváth, Z. László, S. Kertész, and C. Hodúr, "Methods for experimental design, central composite design and the Box–Behnken design, to optimise operational parameters: A review," *Acta Alimentaria*, vol. 52, no. 4, hlm. 521–537, 2023.

[53] N. Prabaningrum, D. Pratama, Y. H. Fauziyah, dan G. P. Hardini, "two-step transesterification of calophyllum inophyllum oil: optimization and reaction kinetics," vol. 11, no. 6, 2016.

[54] S. H. Mohd-Setapar, L. Nian-Yian, dan N. S. Mohd-Sharif, "Extraction of rubber (hevea brasiliensis) seed oil using soxhlet method," *Malaysian Journal of Fundamental and Applied Sciences*, vol. 10, no. 1, 2014.

[55] A. A. Syahidi, "In-Situ metanolisis biji nyamplung (*Calophyllum inophyllum*)," *Skripsi*. Departemen Teknik Nuklir dan Teknik Fisika, Universitas Gadjah Mada, Yogyakarta, 2024.

[56] R. E. Walpole, R. H. Myers, S. L. Myers, dan K. Ye, *Probability & Statistics for Engineers & Scientists*, ninth edition, USA: Pearson, 2012.

[57] P. Coniwanti, L. Surliadji, dan D. Triandini, "The effects of catalysts type, molar ratio, and transesterification time in producing biodiesel from beef tallow," in *IOP Conference Series: Materials Science and Engineering*, Institute of Physics Publishing, 2019.

[58] R. Rangkuti, "Optimasi hasil *in situ* esterifikasi biji kemiri sunan melalui proses degumming menggunakan katalisator asam sulfat," *Skripsi*. Departemen Teknik Nuklir dan Teknik Fisika, Universitas Gadjah Mada, Yogyakarta, 2018.

[59] Sudarman dan Tumisem, "Metode perendaman dan perebusan untuk menganalisis kadar HCN biji karet (*Hevea brasiliensis*) dari perkebunan karet PTPN IX desa karangrau kabupaten banyumas", Prosiding Seminar Nasional Sains dan Entrepreneurship VI tahun 2010. Semarang, 2019.

[60] M. Wagner, M. Lippe, I. Lewandowski, M. Salzer, dan G. Cadish, "CO2 footprint of the seeds of rubber (*Hevea brasiliensis*) as a biodiesel feedstock source," vol. 9, no. 548, 2018.