

DAFTAR PUSTAKA

- A, S., Sherbiny, E., A, A., Refaat, T, S., & Sheltawy, E. (2010). Production of biodiesel using the microwave technique. *Advanced Research*, 1, 255–366.
- Abdoulmounine, N. (2010). *Sulfate and Hydroxide Supported on Zirconium Oxide Catalyst for Biodiesel Production*. Virginia Polytechnic Institute and State University, Blacksburg, Virginia.
- Alfian, M. L. (2017). *Variasi Penambahan Fotokatalis TiO₂anatase K₂O/Zeolit pada Reaksi Transesterifikasi Minyak Jarak untuk Pembuatan Biodiesel*. Universitas Islam Negeri Maulana Malik Ibrahim Malang.
- Amir, A., Wiraningtyas, Ruslan, & Nurfidianty, A. (2016). Perbandingan Metode Ekstraksi Natrium Alginat: Metode Konvensional dan Microwave Assisted Extraction (MAE). *Chempublish Journal*, 1(2), 7–14.
- Aransiola, E. F., Ojumu, T. V., Oyekola, O. O., & Madzimbamuto, T. F. (2015). A review of current technology for biodiesel production ScienceDirect A review of current technology for biodiesel production : State of the art. *Biomass and Bioenergy*, 61 (January), 276–297. <https://doi.org/10.1016/j.biombioe.2013.11.014>.
- Ardizzzone, S., Bianchi, C. L., Cattagni, W., & Ragaini, V. (1997). Effects of the Precursor Features and Treatments on the Catalytic Performance of SO₄/ZrO₂. *Catal. Lett.*, (49), 193–198.
- Aziz, I. (2007). Kinetika Reaksi Transesterifikasi Minyak Goreng Bekas”, *Valensi*, 1(1), 19–23.
- Bankovic-Ilic, Ivana B., Stamenkovic, Olivera S., Veljkovic, Vlada B., (2012). Biodiesel Production from non-edible Oil. *Renewable and Sustainable Energy Reviews*, 16 (2012) 3621– 3647
- Brahmkhatri, V., & Patel, A. (2011). Biodiesel Production by Esterification of Free Fatty Acids over 12-Tungstophosphoric Acid Anchored to MCM-41. *Industrial and Engineering Chemistry Research*, 6620–6628.
- Budiman, Arief., R., K. D., Yano., P. S., & Ni'mah., L. A. (2014). *Biodiesel*. Gadjah Mada University Press.
- Carrico, C. S., Fraga, T., Carvalho, V. E., & Pasa, V. M. D. (2017). Polyurethane Foams for Thermal Insulation Uses Produced from Castor Oil and Crude Glycerol Biopolyols. *Molecules*, 22 (July), 1091. <https://doi.org/10.3390/molecules22071091>.
- Dehkordi, A. M., & Ghasemi, M. (2012). Transesterification of waste cooking oil to biodiesel using Ca and Zr mixed oxides as heterogeneous base catalysts. *Fuel Processing Technology*, 97, 45–51. <https://doi.org/10.1016/j.fuproc.2012.01.010>.

- Fu, B., Gao, L., Niu, L., Wei, R., & Xiao, G. (2009). Biodiesel from Waste Cooking Oil via Heterogeneous Superacid Catalyst $\text{SO}_4^{2-}/\text{ZrO}_2$, (17), 569–572.
- Gnaneswar., G. V., Patil., P., Martinez-Guerra., E., Deng., S., & Nirmalakhandan., N. (2013). Review: Microwave energy potential for biodiesel production., *Sustainable Chemical Processes*, 1:5.
- Griffiths, P., & de Hasseth, J. . (2007). *Fourier Transform Infrared Spectrometry (2nd ed.)*. Wiley-Blackwell.
- Hadiyanto, H., Aini, Apsari Puspita., Widayat, Widayat., Kusmiyati, Kusmiyati., Budiman, Arief., Roesyadi, Achmad. (2020). Multi-Feedstocks Biodiesel Production from Esterification of Calophyllum inophyllum Oil, Castor Oil, Palm Oil and Waste Cooking Oil. *Int. Journal of Renewable Energy Development* 9 (1) 119-123.
- Hapsari, Tribuana., (2008). Efek pemberian bungkil biji jarak pagar (*Jatropha curcas* L.) produk fermentasi *Rhizopus oryzae* dalam ransum terhadap reproduksi mencit. Institut Pertanian Bogor.
- Haryanto, Agus., Silviana, Ully., Triyono, Sugeng., Prabawa Sigit. (2015). Produksi Biodiesel dari Transesterifikasi Minyak Jelantah dengan Bantuan Gelombang Mikro: Pengaruh Intensitas Daya dan Waktu Reaksi Terhadap Rendemen dan Karakteristik Biodiesel. *Agritech.*, 35 (2).
- Hasanuddin, Nabilah Aulia., (2016). Efek pemberian ekstrak biji jarak pagar terhadap kadar protein VEGF dan gambaran Histologi Vena sentralis jaringan hepar. UIN SYARIF HIDAYATULLAH: Jakarta.
- Ika. Pemerintah perlu mengoptimalkan pemanfaatan energi baru terbarukan (2017). Retrieved from <https://www.ugm.ac.id/id/berita/13754-pemerintah.perlu.mengoptimalkan.pemanfaatan.energi.baru.terbarukan>.
- J. S. Lee. (2007). News Inform. Chem. Eng.,. *News Inform. Chem. Eng.*, (25), 613.
- Jaelani, A. (2015). Public financial management in Indonesia: Review of Islamic public financ, (72340).
- Kakae, K., Esrafil, M. D., & Ehsani, A. (2019). Introduction to Catalysis. In 2019 (pp. 1–21). <https://doi.org/10.1016/B978-0-12-814523-4.00001-0>
- Kaur, N., & Ali, A. (2014). Kinetics and reusability of Zr/CaO as heterogeneous catalyst for the ethanolysis and methanolysis of *Jatropha curcas* oil. *Fuel Processing Technology*. <https://doi.org/10.1016/j.fuproc.2013.11.002>
- Kaur, N., & Ali, A. (2015). Preparation and application of Ce-ZrO₂ / TiO₂-SO₄ as solid catalyst for the esterification of fatty acids, 81. <https://doi.org/10.1016/j.renene.2015.03.051>
- Kiss, A. A., Dimian, A. C., & Rothenberg, G. (2006). Solid acid catalysts for biodiesel production - Towards sustainable energy. *Advanced Synthesis and*

Catalysis, 348(1–2), 75–81. <https://doi.org/10.1002/adsc.200505160>.

- Knothe, G. (2000). Monitoring a Progressing Transesterification Reaction by Fiber-Optic Near Infrared Spectroscopy with Correlation to ^1H Nuclear Magnetic Resonance Spectroscopy, 77(5), 489–493.
- Lee, D. L. K. (2014). Heterogeneous Solid Acid Catalysts for Esterification of Free Fatty Acids, 55–74. <https://doi.org/10.1007/s10563-014-9166-y>.
- Lesbani, S. O. C., Sitompul, Mohadi, R., & Nurlisa Hidayat. (2016). Characterization and Utilization of Calcium Oxide (CaO) Thermally Decomposed from Fish Bones as a Catalyst in the Production of Biodiesel from Waste Cooking Oil”, Makara. *Technol.*, 20(3), 121–126.
- M. Galván-Ruiz, Hernández, J., Baños, L., Noriega-Montes, J., & Rodríguez-García, M. E. (2009). “Characterization of Calcium Carbonate, Calcium Oxide, and Calcium Hydroxide as Starting Point to the Improvement of Lime for Their Use in Construction. *Mater. Civ. Eng.*, 21, 694–698.
- Ma, F., & Hanna, M. A. H. (1999). Biodiesel production: a review. *Bioresource Technology*, 70, 1–15. [https://doi.org/10.1016/S0960-8524\(99\)00025-5](https://doi.org/10.1016/S0960-8524(99)00025-5).
- Masduki. (2013). *Kinetika Reaksi Esterifikasi Palm Acid Distilate (PFAD) Menjadi Biodiesel Dengan Katalis Zeolit Zirkonia Tersulfatasi*. Yogyakarta: Universitas Gadjah Mada Press.
- Miao, C. X., & Gao. (1997). Preparation and properties of ultrafine $\text{SO}_4^{2-}/\text{ZrO}_2$ superacid catalysts, 50, 15–19.
- Murdijanto, D. N., Setiabudi, A., & Eko, R. (2010). Sintesis, Karakterisasi dan Uji Aktivitas Katalis $\text{Ni}/\text{Al}_2\text{O}_3$ pada Reaksi Hydrocracking Minyak Nabati. *Sains Dan Teknologi Kimia*, 1(1), 30–37.
- Paar, A. (2000). Microwave Assisted Extraction. Retrieved November 12, 2019, from www.wikipedia.com.
- Patil, M. K., & Shaikh, S. (2013). Nano-Sized and – Crystalline Sulfated Zirconia Solid Acid Catalysts for Organic Synthesis, 757, 69–83. <https://doi.org/10.4028/www.scientific.net/MSF.757.69>.
- Petchmala, A., Laosiripojana, N., Jongsomjit, B., Goto, M., Panpranot, J., Meksasuwandumrong, O., & Shotipruk, A. (2010). Transesterification of Palm Oil and Esterification of Palm Fatty Acid in Near- and Super-Critical Methanol with $\text{SO}_4\text{-ZrO}_2$ Catalysts. *Fuel*, (89), 2387–2392.
- Prabakaran, K., Kannan, S., & Rajeswari, S. (2005). Development and Characterisation of Zirconia and Hydroxyapatite Composites for Orthopaedic Applications. *Trends Biomaterial and Artificial Organs*, 18(2), 114–116.
- Pratama, L., Yoeswono., Triyono., & Iqmal Tahir. (2009). Effect of temperature and speed of Stirrer to Biodiesel Conversion from Coconut Oil with The Use of Palm empty fruit bunches as Heterogenous Catalyst. *Indo. J. Chem.*, 1(9),

54–61.

- Qiqmana, A. ' arij, & Sutjahjo, D. H. (2014). DwiHeru. *JTM*, 02(1), 132–139.
- Said, A. E. ., El-Wahab, M. M. A., & El-Aal, M. A. (2014). The Catalytic Performance of Sulfated Zirconia in the Dehydration of Methanol to Dimethyl Ether. *Mol. Catal A: Chem.*, (394), 40–47.
- Saiful, Nurfitriana, Ramli, M., & Maulana, I. (2013). Pengembangan Membran Magnesol untuk Pemurnian Biodiesel. *Jurnal Rekayasa Kimia*, 9(3), 117–124.
- Samik, Ediati, R., & Didik Prasetyoko. (2011). Review: Effect of basicity and Surface Area of Catalyst on Heterogeneous Alkaline Catalyst Activity to Produce Biodiesel). In *Proceeding of National Seminar Chemistry UNESA*.
- Sandoval, Georgina., Casas-Godoy, Leticia., Bonet-Ragel, Kirian., Rodrigues Joana., FerreiraDias, Suzana., and Francisco Valero. (2017). Enzyme-Catalyzed Production of Biodiesel as Alternative to Chemical Catalyzed Processes: Advantages and Constraints. *Current Biochemical Engineering*., 4(2).
- Saravanan, K., Tyagi, B., Salt, C., Bajaj, H. C., & Salt, C. (2012). zirconia Esterification of caprylic acid with alcohol over nano-crystalline sulfated zirconia, (April). <https://doi.org/10.1007/s10971-011-2671-9>.
- Shi, G., Yu, F., Wang, Y., Pan, D., Wang, H., & Li, R. (2016). a Novel One-Pot Synthesis of Tetragonal Sulfated Zirconia Catalyst with High Activity for Biodiesel Production from the Transesterification of Soybean Oil,. *Renew. Energy*, (92), 22–29.
- Song, Y., Tian, J., Ye, Y., Zhou, X., Wang, J. A., & Xu, L. (2013). Effects of Calcination Temperature and Water- Washing Treatment on N-Hexane Hydroisomerization Behavior of Pt-Promoted Sulfated Zirconia based Catalysts,. *Catal. Today*, (212), 108–114.
- Thanh, L. T., Okitsu, K., Boi, L. Van, & Maeda, Y. (2012). Catalytic Technologies for Biodiesel Fuel Production and Utilization of Glycerol: A Review, 191–222. <https://doi.org/10.3390/catal2010191>.
- Utami, M., Wijaya, K., & Trisunaryanti, W. (2017). Effect of Sulfuric Acid Treatment and Calcination on Commercial Zirconia Nanopowder, (October). <https://doi.org/10.4028/www.scientific.net/KEM.757.131>
- Wijaya, K., Hadi, K., Herlina, I., & Kurnia, T. A. (2016). *Nanomaterial*. Gadjah Mada University Press.
- Xia, S., Guo, X., Mao, D., Shi, Z., Wu, G., & Lu, G. (2014). Biodiesel Synthesis over the CaO-ZrO₂ Solid Base Catalyst Prepared by A Urea-Nitrate Combustion Method. *RSC Adv.*, (4), 51688–51695.

- Xianglin Hou†, Qi, Y., Qiao, X., Wang, G., Qin, Z., & Wang, J. (2007). Lewis acid-catalyzed transesterification and esterification of high free fatty acid oil in subcritical methanol, 24(2), 311-313. *Korean J. Chem. Eng.*, 2(24), 311–313.
- Y. Y. Margaretha, Prastyo, H. S., Ayucitra, A., & Ismadji, S. (2012). Calcium oxide from Pomacea sp. shell as a catalyst for biodiesel production. *International Journal of Energy and Environmental Engineering*, 3(33), 1–9.
- Yulianti, C. H., Ediati, R., Hartanto, D., Esti, T., Chisaki, Y., Jalil, A. A., Prasetyoko, D. (2014). Synthesis of CaOZnO Nanoparticles Catalyst and Its Application in Transesterification of Refined Palm Oil, 9(2), 100–110. <https://doi.org/10.9767/bcrec.9.2.5998.100-110>.
- Zein, Y. M., Anal, A. K., Prasetyoko, D., & Qoniah, I. (2016). Biodiesel Production from Waste Palm Oil Catalyzed by Hierarchical ZSM-5 Supported Calcium Oxide, 16(1), 98–104.

