

DAFTAR PUSTAKA

- Almeida, A.G.S.A., Menenses, A.C., Araujo, P.D.H., & Oliveira, D. (2017). A Review on Enzymatic Synthesis of Aromatic Esters Used as Flavour Ingredients for Food, Cosmetics and Pharmaceuticals Industries. *Trends in Food Science and Technology*, 6, 95-105.
- Anam, C., Sirojudin., & Firdausi, K.S. (2007). Analisis Gugus Fungsi Pada Sampel Uji Bensin dan Spritus Menggunakan Metode Spektroskopi FTIR. *Jurnal Berkala Fisika*, 10(1), 79-85.
- Abidin, S.Z., Haigh, K.F., & Saha, B. (2012). Esterification of Free Fatty Acids in Used Cooking Oil Using Ion-Exchange Resins as Catalyst : An Efficient Pretreatment Method for Biodiesel Feedstock. *Industrial & Engineering Chemistry Research*, 51(45), 14653-14664.
- Alhassani, M.H., Al-Joburi, S.M., Noori,W.O., & Al-Jendeel, H.A. (2018). Esterification Reaction Kinetics Using Ion Exchange Resin Catalyst by Pseudo-Homogenous and Eley-Rideal Models. *International Journal of Engineering*, 31(8), 1172-1179.
- ASTM. (2017). Official Methods and Recommended Practices of The AOCS : AOCS Te-2a-64, AOCS Cd 1b-87. Sixth Edition. US : American Oil Chemists Society.
- ASTM. (2006). Annual Book of ASTM Standards Section Five : Petroleum Products, Lubricants, and Fossil Fuels, Vol 05.01. US : ASTM International.
- Atabani, A.E., & César, A.D.S. (2014). *Calophyllum Inophyllum L.- A Prospective Non Edible Biodiesel Feedstock. Study Of Biodiesel Production, Properties, Fatty Acid Composition, Blending And Engine Performance. Renew. Sustain. Energy*, 37, 644-655.
- Argyle. M.D., & Bartholomew, C.H. (2015). Heterogeneous Catalyst Deactivation and Regeneration : A Review. *Catalysis*, 5(1), 145-269.

- Ayinla, R.T., Dennis, J.O., Sanusi, H.M., Usman, Y.K.F., & Adebayo,L.L. (2019). A Review of Technical Advances of Recent Palm Bio-waste Conversion to Activated Carbon for Energy Storage. *Journal of Cleaner Production*, 229, 1427-1442.
- Bailey. (1951). Bailey's Industrial Oil and Fat Product. USA : Wiley-Interscience Publication.
- Bailey. (1996). Bailey's Industrial Oil and Fat Product, 5th ed, Edited by Y.H. Hui. USA : Wiley-Interscience Publication.
- Bartholomew, C.H. (2001). Mechanism of Catalyst Deactivation. *Applied Catalysis : A General*, 212(1-2), 17-60.
- Boz, N., Degirmenbasi, N.m Kalyon, D.M. (2015). Esterification and Transesterification of Waste Cookingg Oil over Amberlyst 15 and Modified Amberlyst 15 Catalyst. *Applied Catalysis B : Enviromental*, 165, 723-730
- BSN. (2015). SNI 7182 : 2015. *Biodiesel*. Jakarta. Badan Standarisasi Nasional
- Budisa, N., & Schule-Makuzh, D. (2014). Supercritical Carbon Dioxide and Its Potential as a Life-Sustaining Solvent in a Planetary Enviroment. *Life*, 4(3), 331-340.
- Burca, G. (2014). Solid State Chemistry, Surface Chemistry and Catalytic Behaviour. USA : Elsevier.
- Burmana, A. D. (2020). Pengaruh Rasio Molar Reaktan dan Jumlah Katalis pada Proses Pembuatan Biodiesel dari Palm Fatty Acid Distillate dengan Kondisi Vakum. *Tesis*. Medan : Universitas Sumatera Utara.
- Carmo Jr, A.C., de Souza, L.K.C., Costa, C.E.F, Longom E., Zamian, J.R., & Rocha, F.G.N. (2009). Production of Biodiesel by Esterification of Palmitic Acid Over Mesoporus Aluminosilicate. *Al-MCM-41. Fuel*, 88(3), 461-468.

- Ciopec, M., Davidescu, C.M., Nagrea, A., Popa, A., Muntean, C., & Ardealan, R. (2013). Syntesis, Characterization and Adsoprtion Behavior of Aminosphinic Poly(Styrene-Co-Divinylbenzene) for Divalent Metals ions in Aqueous Solutions. *Polymer Engineering & Science*, 53(5), 1117-1124.
- Chiminienti, M.E., Careres, C. V., Pizzio, L.R., & Blanco, M.N. (2001) Tungstophosphoric And Tungstosilicic Acids On Carbon As Acidic Catalysts. *Appl. Catal. A : General*, 208 (1), 7-19
- Chongkong, S., Tongurai, C., Chetpattananondh, P., & Bunyakan, C. (2007). Biodiesel Production by Esterification of Palm Fatty Acid Distillate. *Biomass and Bioenergy*, 31(8), 563-568
- Chorkendorff, I., and Niemanstverdiet, J.W. (2003). Concepts of Modern Catalysis and Kinetics. Weinheim : Wiley-VCH GmbH & Co. KGaA.
- Colombo, K., Ender, L., Santos, M.M., & Barros, A.A.C. (2019). Production of Biodiesel from Soybean Oil and Methanol Catalyzed by Calcium Oxide in A Recycle Reactor. *South African Journal of Chemical Engineering*, 28, 19-25.
- Dwina, M., Againa, G., Ridhawati, M.M., Chumaidi, A., & Hendrawati, N. (2016). Hidrolisis Minyak Kelapa dengan Lipase Termobilisasi pada Pembuatan Perisa Alami. *Jurnal Bahan Alam Terbarukan*, 5(2), 84-91.
- Dwipayana, H. (2016). Studi Analisa Pengaruh Sifat Fisik Biodiesel (Viskositas, Kadar Air, dan Angka Setana) Terhadap Proses Pembakaran Bahan Bakar di Boiler Fire Tube. *Jurnal Teknika*, 3(1), 1-14.
- Ehteshami, M., A., Rahimi, N.m Eftekhari, A.A. & Nasr, J. (2006). Kinetic Study of Hydrolysis Reaction of Methyl Acetate to Acetic Acid and Methanol. *Iranian Journal of Science & Techologym Transaction B, Engineering*, 30(5), 597-606.
- Encinar, J.M., Sanchez, N., Martinez, G & Garcia, L. (2011). Study of Biodiesel Production from Animal Fats With High Free Fatty Acid Content. *Bioresource Technology*, 102(23), 10907-10914.

- Gautam, K., Gupta, N. C., & Sharma, D.K. (2013). Physical Characterization and Comparison of Biodiesel Produced from Edible and Non-Edible oils of *Madhuca indica* (mahua), *Pongamia pinnata* (karanja), and *Sesamum indicum* (til) plant oilseeds. *Biomass Conversion and Biorefinery*, 4(3), 193-200.
- Gelbard, G. (2005). Organic Synthesis by Catalysis with Ion-Exchange Resins. *Industrial & Engineering Chemistry Research*, 44(23), 8468-8498.
- Gu, L., Huang, W., Tang, S., Tian, S., & Zhang, X. (2015). A Novel Deep Eutectic Solvent for Biodiesel Preparation using Homogeneous Base Catalyst. *Chemical Engineering Journal*, 259, 647-652.
- Guilera, J., Ramirez, E., Fite, C., Iborra, M., & Tejero, J. (2013). Thermal Stability and Water on Ion-exchange Resins in Ethyl Octyl Ether Production at High Temperature. *Applied Catalysis : A General*, 467, 301-309.
- Gutch, P.K., Shrivastava, R.K., & Dubey, D.K. (2007). Polymeric Decontaminant: N,N-Dichloro Poly(styrene-co-divinyl benzene) Sulfonaimde-Synthesis, Characterization and Efficacy against Simulant of Sulfur Mustard. *Journal of Applied Polymer Science*. 105 (4), 2203-2207.
- Han, Y.G., Kusunose, T., & Sekino, T. (2019). One-step Reverse Micelle Polymerization of Organic Dispersible Polyaniline Nanoparticles, *Synthetic Metals*, 159(1-2), 121-131.
- Handojo, L.A., Indiarto, A., Shofinita, D., Saadi, M.R., Yulistia, D., & Hasyyati, F.I. (2018). Calcium Soap from Palm Fatty Acid Distillate for Ruminant Feed : Analysis of Product Quality (FTIR). *Int. Journal of Sustainable Biomass and Bioenergy*, 2(2), 1-5.
- Hasibuan, H.A. & Ijah. (2017). Eznrimatik Esterifikasi Menggunakan Lipase Antara asam Lemak Sawit Destilat dan Gliserol Untuk Sintesis Triagliserol. *Warta IHP*, 34 (2), 58-64.

- Harahap, M.H., Abrasyi, R., & Lumban Tobing, V.H. (2021). Penentuan Flash Point, Densitas, dan Warna Biosolar (B30) T007 FT Sabang dan SPBU CV. Tosaka Abadi Sabang Menggunakan Metode ASTM D-93. *AMINA*, 3(2), 55-61.
- Hard, H., and Craine, L.I. (2003). Kimia Organik : Suatu Kuliah Singkat Edisi Kesebelas. Jakarta : Erlangga
- Haryono,H.E. (2019). Kimia Dasar. Yogyakarta : Deepublish Publisher.
- Heru, B.A., Nasikin, M., & Sukirno. (2008). Reaksi Esterifikasi Asam Oleat dengan Alkohol Rantai Panjang Kerkatalis HPW/Zeolit untuk Produksi Pelumas Dasar Bio. *Seminar Nasional Teknik Kimia Oleo dan Petrokimia Indonesia*, ISSN 1907-0500, 1-8.
- Hutagaol, N., Zahira, I., & Yelmida. (2020). Esterifikasi Asam Lemak Menggunakan Katalis Heterogen. *Jom Fteknik*, 7(2), 1-4.
- Ibrahim, S., & Sitorus, M. (2013). Teknik Laboratorium Kimia Organik. Yogyakarta : Graha Ilmu.
- Jacobson, K., Gopinnath, R., Meher, L.C., & Dalai, A.K. (2008). Solid Acid Catalyzed Biodiesel Production from Waste Cooking Oil. *Appl. Catal. B Enviromental*, 85(1-2), 86-91.
- Jiang, X., Li, S., Xiang, G., Li, Q., Fan, L., He, L., & Gu, K. (2016). Determination of The Acid Values of Edible Oils via FTIR Spectroscopy based on The O-H Streching Band. *Food Chemistry*, 212, 585-589.
- Junifa, J.S., Pulungan, A.N., Lindawati, P., Prayoga, A., Safitri, I.A., Wandani, C.N., Silitonga, L.A., Ambarwati, Prayugo, P. & Wibowo, A.A. (2018). Optimization of Rubber Seed Oil Using Natural Zeolite Modification. *Jurnal Pendidikan Kimia*, 10(2), 387-392.
- Kementrian ESDM. 2019. Standar dan Mutu (Spesifikasi) Bahan Bakar Nabati (Biofuel) Jenis Biodiesel Sebagai Bahan Bakar Lain yang Dipasarkan di Dalam Negeri. Jakarta : Kementrian ESDM.

- Khan, A. J., Jamal. Y., Shahid, A., & Boulager, B.O., (2016). Esterification of Acetic and Oleic Acids within the Amberlyts 15 Packed Catalytic Column. *Korean J. Chem. Eng*, 33(2), 582-586.
- Kahn, Z., Javed, F., Shamair, Z., Hafeez, A., Fazal, T., Aslam, A., Zimmerman, W.B., & Rehman, F. (2021). Current Developments in Esterification Reaction : A Review on Process and Parameters. *Journal of Industrial and Engineering Chemistry*, 103(10), 80-101.
- Krishna, Y., Saidur, R., Aslfattahi, N., Faizal, M., & Ng, K.C. (2020). Enhancing The Thermal Properties of Organic Phase Change Material (Palmitic Acid by Doping MXene Nanoflakes. *AIP Conference Proceedings* 2233, 020013-1 – 020012-7.
- Knothe, G., Gerpen, J.V., & Krahl. J. (2005). The Biodiesel Handbook. USA : AOCS Press.
- Kurniawan, E.W., Sophia, V., & Rahman, M. (2020). Pemanfaatan Palm Fatty Acid Distillate (PFAD) Sebagai Bahan Baku Fat Replacer Sorbitol-Oleat Polyester (SOPE). *Buletin LOUPE*, 16(2), 7-11.
- Lam, M.K., Lee, K.T., & Mohamed, A.R. (2010). Homogenous, Heterogenous, and Enzymatic Catalysis for Transesterification of High Free Fatty Acid Oil (Waste Cooking Oil) to Biodiesel : A Review. *Biotech Advances*, 4(4), 500-518.
- Lapham, D., & Lapham, J.L. (2017). Gas Adsorption on Commercial Magnesium Stearate : Effects of Degassing Condition on Nitrogen BET Surface Area and Isotherm Characteristics. *International Journal of Pharmaceutics*, 530(1-2), 364-376.
- Lestari, D. E., Pujiarta, S., & Irwan. (2000). Analisis Kemampuan Resin Penukar Ion Sistem Demineralisasi RSG-GAS. *Prosiding Hasil Penelitian P2TRR*, 126-131.

- Lotero, E., Liu, Y., Lopez, D.E., Suwannakarn, K., Bruce, D.A., & Goodwin, G.J. (2005). Synthesis of Biodiesel via Acid *Catalysis, Industrial & Engineering Chemistry Research*, 14(44), 5353-5363.
- Lucena, I.L., Saboya, R.M.A., Oliveira, J.F.G., Rodrigues, M.L., Torres, A.E.B., Cavalcante Jr, C.L., Parente Jr, E.J.S., Silva, G.F., & Fernandes, F.A.N. (2011). Oleic Acid Esterification with Ethanol Under Continuous Water Removal Conditions. *Fuel*, 90(2), 902-904.
- Mamuaja, C.F. (2017). LIPIDA. Manado : Unsrat Press.
- Marchetti, J.M., & Errazu, A.F. (2008). Esterification of Free Fatty Acids using Sulfuric Acid as Catalyst in The Presence of Tryglycerides. *Biomass & Bioenergy*, 32(9), 892-895.
- Mazzotti, M., Neri, B., Gelosa, D., Kurglov, A., & Morbidelli, M. (1997). Kinetic Liquid-Phase Esterification Catalyzed by Acidic Resins. *Ind. Eng. Chem. Res*, 36(1), 3-10.
- Mbrakka, I.K., Radu, D.R, Lin, V.S.Y., & Shanks, B.H. (2003). Organosulfonic Acid Functionlized Mesoporous Silicas for The Esterification of Fatty Acid. *Journal. Catalyst*, 219(2), 329-336.
- Michelle, R.D., Stulik, D., & Landry, J.M. (1999). Infrared Spectroscopy in Conservation Science : Scientific Tools for Conservation. Los Angeles, USA : The Getty Conservation Institute.
- Mizota, T., Tsuneda, S., Saito, K., & Sugo, T. (1994). Hydrolysis of Methyl Acetate and Sucrose in SO₃H-group-containing Grafted Polymer Chains Prepared by Radiation-Induced Graft Polymerization. *Ind. Eng. Chem. Res*, 33(9), 2215-2219.
- Mistry, B.D. (2009). A Handbook of Spectroscopic Data. Jaipur : Oxford Book Company.
- Mulyanti., & Sujarwanta, A (2018). Lemak dan Minyak. Metro : Lembaga Penelitian UM Metro.

- Nasution, T., Pulungan, A.M., Wiliranti, Y.A., Sihombing, J.L., & Pulungan, A.N. (2019) Synthesis of Biodiesel from Rubber Seed Oil with Acid and Base Activated Natural Zeolite Catalyst. *IJCST-UNIMED*, 2(2), 125-130.
- Nosal, H., Moser, M., Warjala, M., Holzer, A., Stanzyck. D., & Sabura, E. (2021). Selected Fatty Acid Esters as Potential PHB-V Bioplasticizers: Effect on Mechanical Properties of the Polymer. *Journal Polymers and The Environment*, 29, 38-53.
- Noshadi, I., Kanjilal, B., Kamat, R., & Parnas, R. (2013). Tranesterification Catalyzed by Superhydrophobic-Oleophilic Mesoporous Polymeric Solid Acids : An Efficient Route for Production of Biodiesel. *Catalysis Letters*, 143(8), 192-797.
- Nourredine, A. (2010). Sulfate and Hydroxide Supported on Zirconium Oxide Catalyst for Biodiesel Production. *Thesis*. Virginia : Virginia Polytechnic Institute and State University.
- Ong, H.C., Silitonga, A.S, Masjuki, H.H., Mahlia, T.M.I, Chong, W.T., & Boosroh, M.H. (2003). Production and Comparative Fuel Properties of Biodiesel from Non-Edible Oils : Jatropha Curcas, Sterculia Foetida and Ceiba Pentandra. *Energy Conversion and Management*, 73, 245-255.
- Pal, R., Sarkar, T., & Khasnobis, S. (2012). Amberlyst-15 in Organic Synthesis. *Akrivoc*, 1, 570-609.
- Park, J.Y., Wang, Z.M., Kim, D.K., & Lee, J.K. (2010). Effects of Water on The Esterification of Free Fatty Acids by Acid Catalysts. *Renewable Energy*, 35(3), 614-618.
- Pasaribu, A.A., & Rustamaji, H. (2012). Kinetika Reaksi Esterifikasi Asam Lemak Bebas Dari Palm Fatty Acid Distillate (PFAD) Menjadi Metil Ester. *Prosiding SNSMAIP III-2012*. ISBN : 978-602-98559-1-3
- Porte, A.F., Schneider, R de Souza., Kaercher, J.A., Klamt, R.A., Schmatz, W.L., & Teixeira da Silva, W.L. (2010). Sunflower Biodiesel Production and Application in Family Farms in Brazil. *Fuel*, 89(12), 3718-3724.

- Pujiastuti, S., Indriyati & Hendrana,S. (2010). Analisis Spektrum Inframerah pada Sulfonasi Polistirena dengan Metode Sulfonasi Heterogen. *Porisiding Simposium Nasional Polimer IV* : ISSN 1410-8720.
- Pulungan, A.N., Kemaren, A., Nurfajriani, Syuhada, F.A., Sihombing, J.L., Yusuf, M., & Rahayu. (2021). Biodiesel Production from Rubber Seed Oil Using Natural Zeolite Supported Metal Oxide Catalyst. *Pol. J. Environ. Stud.* 30(6), 5681-5689.
- Pulungan, A.N., Wijosentono, B., Eddiyanto., Kurniawan., Sihombing, J.L., & Hendrana, S. (2020). Polymer Electrolyte Membrane Fuell Cell from Sulfonated Polystirene and Maleated Natural Rubber Blend. *Rasayan J. Chem*, 13(2), 1112-11123.
- Prihandana, R., Hendroko, R., dan Nuraimin. (2006). Menghasilkan Biodiesel Murah, Mengatasi Polusi dan Kelangkaan BBM. Jakarta : Agromedia
- Prime, R.B., Bair, H.E., Vyazovkin, S., Gallagher, P.K and Riga, A., (2008). Thermal Analysis of Polymers : Fundamentals and Applications. USA : John Willey and Sons Inc.
- Rabil, R., Shah, K.H., Fahad, M., Naeem, A., & Sherazi, T.A. (2020) Adsorption Potential of Macroporous Amberlyst-15 for Cd (II) Removal from Aqueous Solutions. *Materials Research Express*, 7(2), 1-15.
- Reis, S.C.M., Lachter, E.R., Nascimento, R.S.V., Rodrigues, J.A., & Reid, M.G. (2005). Transesterification of Brazilian Vegetable Oils with Methanol Over Ion-exchange Resins. *Journal of American Oil Chemists Society*, 82(9), 661-665.
- Rizwanul, F.M., Masjuki., H.H., Kalam, M.A., Wakil, M.A, Ashraful, A.M., & Shahir, S.A. (2014). Experimental Investigation of Performance and Regulated Emissions of A Diesel Engine with Calophyllum-inophyllum Biodiesel Blends Accompanied by Oxidation Inhibitors. *Energy Convers, Manag*, 83, 232-240.
- Saini, R.D. (2017). Conversion of Waste Cooking Oil to Biodiesel. *International Journal of Petroleum Science and Technology*, 1(1), 9-21.

- Setyadi, P., & Wibowo, C.S. (2015). Pengaruh Pencampuran Minyak Solar Dengan Biodiesel Pada Nilai Angka Setana. *Jurnal Konversi Energi dan Manufaktur UNJ*, 2(2), 93-99.
- Shahid, A., Jamal, Y., Khan, S.J., Khan, J.A., & Boulanger, B. (2018). Esterification Reaction Kinetics of Acetic and Oleic Acids with Ethanol in the Presence of Amberlyst 15. *Arab J Sci Eng*, 43, 5701-5709.
- Sievers, C., Noda, Y., Qi, L., Albuquerque, E.M., Rioux, R.M and Scott, L.S. (2016). Phenomena Affectinng Catalytic Reactions at Solid-Liquid Interfaces. *ACS. Catalysis*, 6(12), 8286-8307.
- Sihombing, J.L., Pulungan, A.N., Lindawati, P., Prayoga, A., Safitri, I.A., Wandani, C.N., Silitonga, L.A., Ambarwati., Prayugo, P., dan Wibowo, A.A. (2018). Optimization of Indonesia Biodiesel Production from Rubber Seed Oil Using Natrual Zeolite Modification. *Jurnal Pendidikan Kimia*, 10(2), 387-392.
- Sing, K.S.W., & Williams, R.T. (2004). Physisorption Hysteresis Loops and The Characterization of Nanosporus Materials. *Adsorption Science and Technology*, 22(10), 773-782.
- Sitorus, M. (2009). Spektroskopi Elusidasi Struktur Molekul Organik. Yogyakarta : Graha Ilmu.
- Shibasaki-Kitakawa, N., Honda, H., Kuriyabashi., H., Toda, T., & Yonemoto, T. (2007). Biodiesel Production Using Anionic Ion-exchange Resin as Heterogenous Catalyst. *Bioresource Tehcnology*, 98(2), 416-421.
- Sholeh, M., Sugihartono., & Supraptiningsih. (2015). Thermogravimetric Study of Decomposition Kinetics of Unstaaurated Polyester with Kaolin and Sawdust as Filler. *Prosiding Seminar Nasional Kulit, Karet, dan Plastik* : 115-124.
- Soerawidjaja, T.H. (2006). Intesifikasi Proses Produksi Biodiesel. Bandung : Dept. Teknik Kimia ITB.

- Srilatha, K., Lingaiah, N., Prabhavathi, D.B.L.A., Prasad, R.B.N., Venkateswar, S., & Prasad, S.P.S. (2009). Esterification of Free Fatty Acids for Biodiesel Production Over Heteropoly Tungstate Supported on Biobia Catalyst. *Appl. Catalyst A : General*, 365(1), 28-33.
- Sudrajat, A., Setiawan, I., & Faisal, A. (2015). Analisa Thermal Gravimetric Analysis Bahan Bakar Emulsi Air. *Jurnal Teknik Mesin Untirta* 1(1) : 66-70.
- Susilo, B., Damayanti, R., & Izza, N. (2017). Teknik Bioenergi Cetakan 1. Malang.
- Talebian-Kiakalaieh, A., Aishah, N., Amin, S., & Mazaheri, H. (2013). A Review on Novel Processes of Biodiesel Production from Waste Cooking Oil. *Applied Energy*, 104, 683-710.
- Thommes, M., Olivier, J. P., Neimark, A., & Reinoso, F.R. (2015). Physisorption of Gases with Special Reference to The Evaluation of Surface Area and Pore Size Distribution (IUPAC Technocal Report). *Pure Applied Chem*, 87(9), 1051-1069.
- Triyono. (2002). Kimia Katalis. Yogyakarta : FMIPA UGM.
- Melfi, D.T, Carvalho, K., Pereira, L., & Lucio, M. (2020). Supercritical CO₂ as Solvent for Fatty Acids Esterification with Ethanol Catalyzes by Amberlyst 15. *The Journal of Supercritical Fluids*.158, 1-7.
- Trisurnaryati, W., & Emmanuel, I. (2009). Preparation, Characterization, Activity, Deactivation and Test of CoO-MoO₃/ZnO and CoO-MoO₃/ZnO- Activated Zeolite Catalysts for The Hydrogen Production from Fusel Oil. *Indo.J.Chem.* 9(3), 361-368.
- Tshizanga, N. 2015. A Study of Biodiesel Production from Waste Vegetable Oil Using Eggshell Ash as A Hetrogenous Catalyst. *Thesis*. Cape Town : Cape Peninsula University of Technology.

- Vieville, C., Moulooimgui, Z., & Gaset, A. (1993). Etherification of Oleic Acid by Methanol Catalyzed by p-Toluenesulfonic Acid and The Cation-exchange Resin K2441 and K1481 I Supercritical Carbon Dioxide. *Industrial and Engineering Chemical Research*. 32(9), 2065-2068.
- Wicaksono, G dan Utama, F.P. (2017). *Pembuatan Biokomposit Cellulose Acetate/Poly(L-Lactic Acid) Bead* : Pengaruh Konsentrasi Larutan dan Ratio Berat Cellulose Acetate/Poly(L-Lactic Acid). *Skripsi* : ITS.
- Xia, P., Liu, F., Wang, C., Zue, S., and Qi, C. (2012). Efficient Mesoporous Polymer Based Solid Acid with Superior Catalytic Activities towards Transesterification to Biodiesel. *Catalysis Communications.*, 26, 140-143.
- Yin-lin, L. Luo, Y., Chen. F., & Mei, L. (2014). Sulfonation Process and Desalination Effect of Polystirene/PVDF Semi-Interpenetrating Polymer Network Cation Exchange Membrane. *Polymers*, 6(7),1914-1928.
- Yow, C.J., & Liew, K.Y. (1999). Hydrolysis of Palm Oil Catalyzed by Macroporous Cation-Exchanged Resin. *JAOSC*, 76(4), 529-533.
- Zhang, Z., Jiaqiang, E., Deng, Y., Pham, M., Zuo, W., Peng, Q., & Yin, Z. (2018). Effects of Fatty Acid Methyl Esters Proportion on Combustion and Emission Characteristics of A Biodiesel Fueled Marie Diesel. *Energy Convers. Manag*, 159, 244-253.