

DAFTAR PUSTAKA

- Abd Razak, R. A., Ahmad Tarmizi, A. H., Kuntom, A., Sanny, M., & Ismail, I. S. (2021). Intermittent frying effect on French fries in palm olein, sunflower, soybean and canola oils on quality indices, 3-monochloropropane-1,2-diol esters (3-MCPDE), glycidyl esters (GE) and acrylamide contents. *Food Control*, 124, 107887. <https://doi.org/10.1016/J.FOODCONT.2021.107887>
- Adhikari, P., Shin, J. A., Lee, J. H., Kim, H. R., Kim, I. H., Hong, S. T., & Lee, K. T. (2012). Crystallization, Physicochemical Properties, and Oxidative Stability of the Interesterified Hard Fat from Rice Bran Oil, Fully Hydrogenated Soybean Oil, and Coconut Oil through Lipase-Catalyzed Reaction. *Food and Bioprocess Technology*, 5(6), 2474–2487. <https://doi.org/10.1007/s11947-011-0544-4>
- Aghbolaghy, M., & Karimi, A. (2014). Simulation and optimization of enzymatic hydrogen peroxide production in a continuous stirred tank reactor using CFD–RSM combined method. *Journal of the Taiwan Institute of Chemical Engineers*, 45(1), 101–107. <https://doi.org/10.1016/J.JTICE.2013.05.009>
- AOCS. (1997). *Official Methods and Recommended Practices of the American Oil Chemist's Society, Physical and Chemical Characteristics of Oils, Fats and Waxes, Section I*.
- Arranz-Martínez, P., Corzo-Martínez, M., Vázquez, L., Reglero, G., & Torres, C. F. (2018). Lipase catalyzed glycerolysis of ratfish liver oil at stirred tank basket reactor: A kinetic approach. *Process Biochemistry*, 64, 38–45. <https://doi.org/10.1016/J.PROCBIO.2017.09.026>
- Arum, A. P. (2016). *SINTESIS MONOASILGLISEROL DAN DIASILGLISEROL DARI REFINED BLEACHED DEODORIZED PALM STEARIN DENGAN CARA GLISEROLISIS KIMIA DALAM STIRRER TANK REACTOR SISTEM BATCH*.
- Awadallak, J. A., da Silva, E. A., & da Silva, C. (2020). Production of linseed diacylglycerol-rich oil by combined glycerolysis and esterification. *Industrial Crops and Products*, 145, 111937. <https://doi.org/10.1016/J.INDCROP.2019.111937>
- Bariwere Samuel, C., Joy, E.-E., & David Barine, K.-K. (2018). Effect of Chemical Interesterification on the Physicochemical Characteristics and Fatty Acid Profile of Bakery Shortening Produced from Shea Butter and Fluted Pumpkin Seed Oil Blend. *American Journal of Food Science and Technology*, 6(4), 187–194. <https://doi.org/10.12691/ajfst-6-4-8>
- Basso, R. C., Ribeiro, A. P. B., Masuchi, M. H., Gioielli, L. A., Gonçalves, L. A. G., Santos, A. O. dos, Cardoso, L. P., & Grimaldi, R. (2010). Tripalmitin and monoacylglycerols as modifiers in the crystallisation of palm oil. *Food Chemistry*, 122(4), 1185–1192. <https://doi.org/10.1016/j.foodchem.2010.03.113>

- Beckett, S. T. (2009). *Industrial chocolate manufacture and use*. Wiley-Blackwell.
- Biswas, N., Cheow, Y. L., Tan, C. P., Kanagaratnam, S., & Siow, L. F. (2017). Cocoa Butter Substitute (CBS) Produced from Palm Mid-fraction/Palm Kernel Oil/Palm Stearin for Confectionery Fillings. *JAOCS, Journal of the American Oil Chemists' Society*, 94(2), 235–245. <https://doi.org/10.1007/s11746-016-2940-4>
- Biswas, N., Cheow, Y. L., Tan, C. P., & Siow, L. F. (2016). Blending of Palm Mid-Fraction, Refined Bleached Deodorized Palm Kernel Oil or Palm Stearin for Cocoa Butter Alternative. *JAOCS, Journal of the American Oil Chemists' Society*, 93(10), 1415–1427. <https://doi.org/10.1007/s11746-016-2880-z>
- Biswas, N., Cheow, Y. L., Tan, C. P., & Siow, L. F. (2017). Physical, rheological and sensorial properties, and bloom formation of dark chocolate made with cocoa butter substitute (CBS). *LWT*, 82, 420–428. <https://doi.org/10.1016/j.lwt.2017.04.039>
- Biswas, N., Cheow, Y. L., Tan, C. P., & Siow, L. F. (2018). Physicochemical Properties of Enzymatically Produced Palm-Oil-Based Cocoa Butter Substitute (CBS) With Cocoa Butter Mixture. *European Journal of Lipid Science and Technology*, 120(3). <https://doi.org/10.1002/ejlt.201700205>
- Bootello, M. A., Hartel, R. W., Garcés, R., Martínez-Force, E., & Salas, J. J. (2012). Evaluation of high oleic-high stearic sunflower hard stearins for cocoa butter equivalent formulation. *Food Chemistry*, 134(3), 1409–1417. <https://doi.org/10.1016/J.FOODCHEM.2012.03.040>
- Bramasta, D. A. (2019). *SINTESIS MONO- DAN DIASILGLISEROL DARI CAMPURAN STEARIN SAWIT DAN STEARIN AYAM DENGAN KATALIS NaOH MENGGUNAKAN CENTRIFUGAL CONTACTOR REACTOR KAJIAN KECEPATAN PENGADUKAN, WAKTU REAKSI, DAN SUHU GLISEROLISIS*.
- Cano-Medina, A., Jiménez-Islas, H., Dendooven, L., Herrera, R. P., González-Alatorre, G., & Escamilla-Silva, E. M. (2011). Emulsifying and foaming capacity and emulsion and foam stability of sesame protein concentrates. *Food Research International*, 44(3), 684–692. <https://doi.org/10.1016/j.foodres.2010.12.015>
- Carlucci, C. (2022). An Overview on the Production of Biodiesel Enabled by Continuous Flow Methodologies. *Catalysts*, 12(7). <https://doi.org/10.3390/CATAL12070717>
- Chattopadhyay, S., Das, S., & Sen, R. (2011). Rapid and precise estimation of biodiesel by high performance thin layer chromatography. *Applied Energy*, 88(12), 5188–5192. <https://doi.org/10.1016/j.apenergy.2011.07.027>
- Chen, Y., Wang, Y., Jin, J., Jin, Q., Akoh, C. C., & Wang, X. (2022). Formation of dark chocolate fats with improved heat stability and desirable miscibility by blending cocoa butter with mango kernel fat stearin and hard palm-mid fraction. *LWT*, 156. <https://doi.org/10.1016/j.lwt.2022.113066>

- Chetpattananondh, P., & Tongurai, C. (2008). Synthesis of high purity monoglycerides from crude glycerol and palm stearin Microwave heating for small-scale milling process View project 2 step transesterification via 1st homogeneous catalyst transesterification and 2nd heterogeneous catalyst View project Synthesis of high purity monoglycerides from crude glycerol and palm stearin. In *Article in Songklanakarin Journal of Science and Technology* (Vol. 30, Issue 4). <http://www.sjst.psu.ac.th>
- Copelli, S., Barozzi, M., Maestri, F., & Rota, R. (2018). Safe optimization of potentially runaway reactions: From fedbatch to continuous stirred tank type reactor. *Journal of Loss Prevention in the Process Industries*, 55, 289–302. <https://doi.org/10.1016/J.JLP.2018.07.003>
- Darnoko, D., & Cheryan, M. (2000). *Continuous production of palm methyl esters*. 77(12), 1269–1272.
- de Clercq, N., Kadivar, S., van de Walle, D., de Pelsmaeker, S., Ghelleyck, X., & Dewettinck, K. (2017). Functionality of cocoa butter equivalents in chocolate products. *European Food Research and Technology*, 243(2), 309–321. <https://doi.org/10.1007/s00217-016-2745-6>
- DebMandal, M., & Mandal, S. (2011). Coconut (Cocos nucifera L.: Arecaceae): In health promotion and disease prevention. *Asian Pacific Journal of Tropical Medicine*, 4(3), 241–247. [https://doi.org/10.1016/S1995-7645\(11\)60078-3](https://doi.org/10.1016/S1995-7645(11)60078-3)
- Dollah, S., Abdulkarim, S. M., Ahmad, S. H., Khoramnia, A., & Ghazali, H. M. (2015). Enzymatic interesterification on the physicochemical properties of Moringa oleifera seed oil blended with palm olein and virgin coconut oil. *Grasas y Aceites*, 66(2). <https://doi.org/10.3989/gya.0695141>
- Echeverri, D. A., Cardeño, F., & Rios, L. A. (2011). Glycerolysis of soybean oil with crude glycerol containing residual alkaline catalysts from biodiesel production. *JAOCs, Journal of the American Oil Chemists' Society*, 88(4), 551–557. <https://doi.org/10.1007/s11746-010-1688-5>
- Esteban, L., Muñio, M. del M., Robles, A., Hita, E., Jiménez, M. J., González, P. A., Camacho, B., & Molina, E. (2009). Synthesis of 2-monoacylglycerols (2-MAG) by enzymatic alcoholysis of fish oils using different reactor types. *Biochemical Engineering Journal*, 44(2–3), 271–279. <https://doi.org/10.1016/J.BEJ.2009.01.004>
- Felizardo, P., MacHado, J., Vergueiro, D., Correia, M. J. N., Gomes, J. P., & Bordado, J. M. (2011). Study on the glycerolysis reaction of high free fatty acid oils for use as biodiesel feedstock. *Fuel Processing Technology*, 92(6), 1225–1229. <https://doi.org/10.1016/J.FUPROC.2011.01.020>
- Ferreira, J. A., Santos, J. M., Breitzkreitz, M. C., Ferreira, J. M. S., Lins, P. M. P., Farias, S. C., de Moraes, D. R., Eberlin, M. N., & Bottoli, C. B. G. (2019). Characterization of the lipid profile from coconut (Cocos nucifera L.) oil of different varieties by

electrospray ionization mass spectrometry associated with principal component analysis and independent component analysis. *Food Research International*, 123, 189–197. <https://doi.org/10.1016/J.FOODRES.2019.04.052>

Ferretti, C. A., Spotti, M. L., & di Cosimo, J. I. (2018). Diglyceride-rich oils from glycerolysis of edible vegetable oils. *Catalysis Today*, 302, 233–241. <https://doi.org/10.1016/j.cattod.2017.04.008>

Fonseca, F. A. S., Vidal-Vieira, J. A., & Ravagnani, S. P. (2010). Transesterification of vegetable oils: Simulating the replacement of batch reactors with continuous reactors. *Bioresource Technology*, 101(21), 8151–8157. <https://doi.org/10.1016/j.biortech.2010.05.077>

Gonalves, K. M., Sutuli, F. K., Leite, S. G. F., de Souza, R. O. M. A., & Leal, I. C. R. (2012). Palm oil hydrolysis catalyzed by lipases under ultrasound irradiation – The use of experimental design as a tool for variables evaluation. *Ultrasonics Sonochemistry*, 19(2), 232–236. <https://doi.org/10.1016/J.ULTSONCH.2011.06.017>

Gunstone, F. (2004). *THE CHEMISTRY OF OILS AND FATS Sources, Composition, Properties and Uses*. In *Crop Research*. CRC. <https://www.wiley.com/en-us/The+Chemistry+of+Oils+and+Fats%3A+Sources%2C+Composition%2C+Properties+and+Uses-p-9781405150026>

Gunstone, F. D. (2002). Vegetable Oils in Food Technology: Composition, Properties, and Uses. *Vegetable Oils in Food Technology: Composition, Properties and Uses, Second Edition*. <https://doi.org/10.1002/9781444339925>

Harrison, S. T. L., Kotsiopoulos, A., Stevenson, R., & Cilliers, J. J. (2020). Mixing indices allow scale-up of stirred tank slurry reactor conditions for equivalent homogeneity. *Chemical Engineering Research and Design*, 153, 865–874. <https://doi.org/10.1016/J.CHERD.2019.10.049>

Hashemzadeh Gargari, M., & Sadrameli, S. M. (2018). Investigating continuous biodiesel production from linseed oil in the presence of a Co-solvent and a heterogeneous based catalyst in a packed bed reactor. *Energy*, 148, 888–895. <https://doi.org/10.1016/J.ENERGY.2018.01.105>

High Shear Mixer: What Is It? How Does It Work? Types Of. (n.d.). Retrieved January 24, 2023, from <https://www.iqsdirectory.com/articles/mixer/high-shear-mixer.html>

Jahurul, H. A. M., M.R, N., F.S, A., Shaarani, S., Mamat, H., Lee, J. S., Norliza, J., Mansoor, A. H., Selamat, J., Khan, F., Matanjun, P., & Islam Sarker, M. Z. (2020). Hard Fats Improve the Physicochemical and Thermal Properties of Seed Fats for Applications in Confectionery Products. *Food Reviews International*, 36(6), 601–625. <https://doi.org/10.1080/87559129.2019.1657443>

Jahurul, M. H. A., Ping, L. L., Sharifudin, M. S., Hasmadi, M., Mansoor, A. H., Lee, J. S., Noorakmar, B. W., Amir, H. M. S., Jinap, S., Mohd Omar, A. K., & Zaidul, I. S. M.

- (2019). Thermal properties, triglycerides and crystal morphology of bambangan (Mangifera pajang) kernel fat and palm stearin blends as cocoa butter alternatives. *LWT*, 107, 64–71. <https://doi.org/10.1016/J.LWT.2019.02.053>
- Jahurul, M. H. A., Zaidul, I. S. M., Nik Norulaini, N. A., Sahena, F., Kamaruzzaman, B. Y., Ghafoor, K., & Omar, A. K. M. (2014). Cocoa butter replacers from blends of mango seed fat extracted by supercritical carbon dioxide and palm stearin. *Food Research International*, 65(PC), 401–406. <https://doi.org/10.1016/J.FOODRES.2014.06.039>
- Junior, I. I., Flores, M. C., Sutili, F. K., Leite, S. G. F., Leandro, L. S., Leal, I. C. R., & de Souza, R. O. M. A. (2012). Fatty acids residue from palm oil refining process as feedstock for lipase catalyzed monoacylglycerol production under batch and continuous flow conditions. *Journal of Molecular Catalysis B: Enzymatic*, 77, 53–58. <https://doi.org/10.1016/J.MOLCATB.2012.01.008>
- Kadivar, S., de Clercq, N., Mokbul, M., & Dewettinck, K. (2016). Influence of enzymatically produced sunflower oil based cocoa butter equivalents on the phase behavior of cocoa butter and quality of dark chocolate. *LWT*, 66, 48–55. <https://doi.org/10.1016/j.lwt.2015.10.006>
- Kalu, E. E., Chen, K. S., & Gedris, T. (2011). Continuous-flow biodiesel production using slit-channel reactors. *Bioresource Technology*, 102(6), 4456–4461. <https://doi.org/10.1016/J.BIORTECH.2010.12.097>
- Klumperman, B., & Heuts, J. P. A. (2020). The solution copolymerization of styrene and maleic anhydride in a continuous stirred tank reactor and its theoretical modelling. *Polymer*, 202, 122730. <https://doi.org/10.1016/J.POLYMER.2020.122730>
- Komers, K., Skopal, F., & Čegan, A. (2010). Continuous biodiesel production in a cascade of flow ideally stirred reactors. *Bioresource Technology*, 101(10), 3772–3775. <https://doi.org/10.1016/J.BIORTECH.2009.12.099>
- Kouzu, M., Fujimori, A., Fukakusa, R. ta, Satomi, N., & Yahagi, S. (2018). Continuous production of biodiesel by the CaO-catalyzed transesterification operated with continuously stirred tank reactor. *Fuel Processing Technology*, 181, 311–317. <https://doi.org/10.1016/J.FUPROC.2018.10.008>
- Kowalska, M., Żbikowska, A., & Kowalski, B. (2014). Enzymatically Modified Fats Based on Mutton Tallow and Rapeseed Oil Suitable for Fatty Emulsions. *JAACS, Journal of the American Oil Chemists' Society*, 91(10), 1703–1710. <https://doi.org/10.1007/s11746-014-2512-4>
- Krisnangkura, K., & Simamaharnnop, R. (1992). Continuous Transmethylation of Palm Oil in an Organic Solvent. In *JAACS* (Vol. 69, Issue 2).
- Lai, O., Phuah, E., Lee, Y., & Basiron, Y. (2020). Palm Oil. In *Bailey's Industrial Oil and Fat Products* (pp. 1–101). Wiley. <https://doi.org/10.1002/047167849x.bio071.pub2>

- le Révérend, B. J. D., Fryer, P. J., Coles, S., & Bakalis, S. (2010). A method to qualify and quantify the crystalline state of cocoa butter in industrial chocolate. *JAOCs, Journal of the American Oil Chemists' Society*, 87(3), 239–246.
<https://doi.org/10.1007/s11746-009-1498-9>
- Li, Z. H., Lin, P. H., Wu, J. C. S., Huang, Y. T., Lin, K. S., & Wu, K. C. W. (2013). A stirring packed-bed reactor to enhance the esterification-transesterification in biodiesel production by lowering mass-transfer resistance. *Chemical Engineering Journal*, 234, 9–15. <https://doi.org/10.1016/j.cej.2013.08.053>
- Losada-Barreiro, S., Sánchez-Paz, V., & Bravo-Díaz, C. (2013). Effects of emulsifier hydrophile–lipophile balance and emulsifier concentration on the distributions of gallic acid, propyl gallate, and α -tocopherol in corn oil emulsions. *Journal of Colloid and Interface Science*, 389(1), 1–9. <https://doi.org/10.1016/J.JCIS.2012.07.036>
- Mahjoob, R., Mohammadi Nafchi, A., Omidbakhsh Amiri, E., & Farmani, J. (2018). An investigation on the physicochemical characterization of interesterified blends of fully hydrogenated palm olein and soybean oil. *Food Science and Biotechnology*, 27(2), 343–352. <https://doi.org/10.1007/s10068-017-0262-4>
- Márquez, A. L., Pérez, M. P., & Wagner, J. R. (2013). Solid fat content estimation by differential scanning calorimetry: Prior treatment and proposed correction. *JAOCs, Journal of the American Oil Chemists' Society*, 90(4), 467–473.
<https://doi.org/10.1007/s11746-012-2190-z>
- Maruyama, J. M., Wagh, A., Gioielli, L. A., da Silva, R. C., & Martini, S. (2016). Effects of high intensity ultrasound and emulsifiers on crystallization behavior of coconut oil and palm olein. *Food Research International*, 86, 54–63.
<https://doi.org/10.1016/J.FOODRES.2016.05.009>
- Mba, O. I., Dumont, M. J., & Ngadi, M. (2015). Palm oil: Processing, characterization and utilization in the food industry - A review. *Food Bioscience*, 10, 26–41.
<https://doi.org/10.1016/j.fbio.2015.01.003>
- Miklos, R., Xu, X., & Lametsch, R. (2011). Application of pork fat diacylglycerols in meat emulsions. *Meat Science*, 87(3), 202–205.
<https://doi.org/10.1016/J.MEATSCI.2010.10.010>
- Motamedzadegan, A., Dehghan, B., Nemati, A., Tirgarian, B., & Safarpour, B. (2020). Functionality improvement of virgin coconut oil through physical blending and chemical interesterification. *SN Applied Sciences*, 2(9).
<https://doi.org/10.1007/s42452-020-03309-6>
- Ng, S. P., Khor, Y. P., Lim, H. K., Lai, O. M., Wang, Y., Wang, Y., Nehdi, I. A., & Tan, C. P. (2021). In-depth characterization of palm-based diacylglycerol-virgin coconut oil blends with enhanced techno-functional properties. *LWT*, 145, 111327.
<https://doi.org/10.1016/J.LWT.2021.111327>

- Ng, S. P., Lai, O. M., Abas, F., Lim, H. K., & Tan, C. P. (2014). Stability of a concentrated oil-in-water emulsion model prepared using palm olein-based diacylglycerol/virgin coconut oil blends: Effects of the rheological properties, droplet size distribution and microstructure. *Food Research International*, 64, 919–930. <https://doi.org/10.1016/J.FOODRES.2014.08.045>
- Norizzah, A. R., Nur Azimah, K., & Zaliha, O. (2018). Influence of enzymatic and chemical interesterification on crystallisation properties of refined, bleached and deodourised (RBD) palm oil and RBD palm kernel oil blends. *Food Research International*, 106, 982–991. <https://doi.org/10.1016/J.FOODRES.2018.02.001>
- Ornla-ied, P., Podchong, P., & Sonwai, S. (2022). Synthesis of cocoa butter alternatives from palm kernel stearin, coconut oil and fully hydrogenated palm stearin blends by chemical interesterification. *Journal of the Science of Food and Agriculture*, 102(4), 1619–1627. <https://doi.org/10.1002/jsfa.11498>
- Phuah, E. T., Tang, T. K., Lee, Y. Y., Choong, T. S. Y., Tan, C. P., & Lai, O. M. (2015). Review on the Current State of Diacylglycerol Production Using Enzymatic Approach. *Food and Bioprocess Technology*, 8(6), 1169–1186. <https://doi.org/10.1007/s11947-015-1505-0>
- Reena, M. B., Reddy, S. R. Y., & Lokesh, B. R. (2009). Changes in triacylglycerol molecular species and thermal properties of blended and interesterified mixtures of coconut oil or palm oil with rice bran oil or sesame oil. *European Journal of Lipid Science and Technology*, 111(4), 346–357. <https://doi.org/10.1002/ejlt.200800065>
- Ri, P. C., Ren, N. Q., Ding, J., Kim, J. S., & Guo, W. Q. (2017). CFD optimization of horizontal continuous stirred-tank (HCSTR) reactor for bio-hydrogen production. *International Journal of Hydrogen Energy*, 42(15), 9630–9640. <https://doi.org/10.1016/J.IJHYDENE.2017.02.035>
- Ruan, X., Zhu, X. M., Xiong, H., Wang, S. qi, Bai, C. qing, & Zhao, Q. (2014). Characterisation of zero-trans margarine fats produced from camellia seed oil, palm stearin and coconut oil using enzymatic interesterification strategy. *International Journal of Food Science and Technology*, 49(1), 91–97. <https://doi.org/10.1111/ijfs.12279>
- Saberi, A. H., Tan, C. P., & Lai, O. M. (2011). Phase behavior of palm oil in blends with palm-based diacylglycerol. *JAOCs, Journal of the American Oil Chemists' Society*, 88(12), 1857–1865. <https://doi.org/10.1007/s11746-011-1860-6>
- Sellami, M., Ghamgui, H., Frikha, F., Gargouri, Y., & Miled, N. (2012). Enzymatic transesterification of palm stearin and olein blends to produce zero-trans margarine fat. *BMC Biotechnology*, 12. <https://doi.org/10.1186/1472-6750-12-48>
- Shi, C., Chang, M., Liu, R., Jin, Q., & Wang, X. (2015). Trans-free Shortenings through the Interesterification of Rice Bran Stearin, Fully Hydrogenated Soybean Oil and

Coconut Oil. *International Journal of Food Engineering*, 11(4), 467–477.
<https://doi.org/10.1515/ijfe-2014-0279>

Shin, J. A., Heo, Y. J., & Lee, K. T. (2019). Physicochemical characteristics of fat blend from hydrogenated coconut oil and acyl migrated palm mid-fraction. *Food Chemistry*, 275, 739–745. <https://doi.org/10.1016/J.FOODCHEM.2018.09.131>

Sivakanthan, S., Jayasooriya, A. P., & Madhujith, T. (2019a). Optimization of the production of structured lipid by enzymatic interesterification from coconut (*Cocos nucifera*) oil and sesame (*Sesamum indicum*) oil using Response Surface Methodology. *LWT*, 101, 723–730. <https://doi.org/10.1016/J.LWT.2018.11.085>

Sivakanthan, S., Jayasooriya, A. P., & Madhujith, T. (2019b). Optimization of the production of structured lipid by enzymatic interesterification from coconut (*Cocos nucifera*) oil and sesame (*Sesamum indicum*) oil using Response Surface Methodology. *LWT*, 101, 723–730. <https://doi.org/10.1016/j.lwt.2018.11.085>

Soares, F. A. S. D. M., da Silva, R. C., Hazzan, M., Capacla, I. R., Viccola, E. R., Maruyama, J. M., & Gioielli, L. A. (2012a). Chemical interesterification of blends of palm stearin, coconut oil, and canola oil: Physicochemical properties. *Journal of Agricultural and Food Chemistry*, 60(6), 1461–1469.
<https://doi.org/10.1021/jf204111t>

Soares, F. A. S. D. M., da Silva, R. C., Hazzan, M., Capacla, I. R., Viccola, E. R., Maruyama, J. M., & Gioielli, L. A. (2012b). Chemical interesterification of blends of palm stearin, coconut oil, and canola oil: Physicochemical properties. *Journal of Agricultural and Food Chemistry*, 60(6), 1461–1469.
<https://doi.org/10.1021/jf204111t>

Srirugsa, T., Prasertsan, S., Theppaya, T., Leevijit, T., & Prasertsan, P. (2019). Appropriate mixing speeds of Rushton turbine for biohydrogen production from palm oil mill effluent in a continuous stirred tank reactor. *Energy*, 179, 823–830.
<https://doi.org/10.1016/J.ENERGY.2019.04.210>

Subroto, E., Indarto, R., Pangawikan, A. D., Lembong, E., & Hadiyanti, R. (2021). Types and concentrations of catalysts in chemical glycerolysis for the production of monoacylglycerols and diacylglycerols. *Advances in Science, Technology and Engineering Systems*, 6(1), 612–618. <https://doi.org/10.25046/aj060166>

Subroto, E., Supriyanto, Utami, T., & Hidayat, C. (2019). Enzymatic glycerolysis–interesterification of palm stearin–olein blend for synthesis structured lipid containing high mono- and diacylglycerol. *Food Science and Biotechnology*, 28(2), 511–517. <https://doi.org/10.1007/s10068-018-0462-6>

Subroto, E., Wisamputri, M. F., Supriyanto, Utami, T., & Hidayat, C. (2020a). Enzymatic and chemical synthesis of high mono- and diacylglycerol from palm stearin and olein blend at different type of reactor stirrers. *Journal of the Saudi Society of Agricultural Sciences*, 19(1), 31–36. <https://doi.org/10.1016/j.jssas.2018.05.003>

- Subroto, E., Wisamputri, M. F., Supriyanto, Utami, T., & Hidayat, C. (2020b). Enzymatic and chemical synthesis of high mono- and diacylglycerol from palm stearin and olein blend at different type of reactor stirrers. *Journal of the Saudi Society of Agricultural Sciences*, 19(1), 31–36. <https://doi.org/10.1016/J.JSSAS.2018.05.003>
- Talbot, G. (2009). Fats for confectionery coatings and fillings. *Science and Technology of Enrobed and Filled Chocolate, Confectionery and Bakery Products*, 53–79. <https://doi.org/10.1533/9781845696436.1.53>
- Voll, F., Krüger, R. L., de Castilhos, F., Filho, L. C., Cabral, V., Ninow, J., & Corazza, M. L. (2011). Kinetic modeling of lipase-catalyzed glycerolysis of olive oil. *Biochemical Engineering Journal*, 56(3), 107–115. <https://doi.org/10.1016/J.BEJ.2010.11.005>
- Wong, Y. H., Goh, K. M., Nyam, K. L., Nehdi, I. A., Sbihi, H. M., & Tan, C. P. (2019). Effects of natural and synthetic antioxidants on changes in 3-MCPD esters and glycidyl ester in palm olein during deep-fat frying. *Food Control*, 96, 488–493. <https://doi.org/10.1016/J.FOODCONT.2018.10.006>
- You, J., Solongo, S. K., Gomez-Flores, A., Choi, S., Zhao, H., Urík, M., Ilyas, S., & Kim, H. (2020). Intensified bioleaching of chalcopryrite concentrate using adapted mesophilic culture in continuous stirred tank reactors. *Bioresource Technology*, 307, 123181. <https://doi.org/10.1016/J.BIORTECH.2020.123181>
- Zhang, H., Smith, P., & Adler-Nissen, J. (2004). Effects of degree of enzymatic interesterification on the physical properties of margarine fats: Solid fat content, crystallization behavior, crystal morphology, and crystal network. *Journal of Agricultural and Food Chemistry*, 52(14), 4423–4431. <https://doi.org/10.1021/jf035022u>
- Zhang, J., Xu, S., & Li, W. (2012). High shear mixers: A review of typical applications and studies on power draw, flow pattern, energy dissipation and transfer properties. *Chemical Engineering and Processing: Process Intensification*, 57–58, 25–41. <https://doi.org/10.1016/J.CEP.2012.04.004>
- Zhang, Z., Lee, W. J., Sun, X., & Wang, Y. (2022). Enzymatic interesterification of palm olein in a continuous packed bed reactor: Effect of process parameters on the properties of fats and immobilized *Thermomyces lanuginosus* lipase. *LWT*, 162. <https://doi.org/10.1016/j.lwt.2022.113459>
- Zhang, Z., Lee, W. J., Xie, X., Ye, J., Tan, C. P., Lai, O. M., Li, A., & Wang, Y. (2021). Enzymatic Interesterification of Palm Stearin and Palm Olein Blend Catalyzed by sn-1,3-Specific Lipase: Interesterification Degree, Acyl Migration, and Physical Properties. *Journal of Agricultural and Food Chemistry*, 69(32), 9056–9066. <https://doi.org/10.1021/acs.jafc.0c06297>
- Zhang, Z., Lee, W. J., Zhou, H., & Wang, Y. (2019). Effects of chemical interesterification on the triacylglycerols, solid fat contents and crystallization kinetics of palm oil-

based fats. *Food and Function*, 10(11), 7553–7564.

<https://doi.org/10.1039/c9fo01648a>

Zhang, Z., Wang, Y., Ma, X., Wang, E., Liu, M., & Yan, R. (2015). Characterisation and oxidation stability of monoacylglycerols from partially hydrogenated corn oil. *Food Chemistry*, 173, 70–79. <https://doi.org/10.1016/J.FOODCHEM.2014.09.155>

Zhang, Z., Xie, X., Lee, W. J., & Wang, Y. (2022). Physicochemical and textural properties of natural cosmeceutical fats prepared from interesterified oil blends consisting of palm olein and palm kernel oil. *Industrial Crops and Products*, 186. <https://doi.org/10.1016/j.indcrop.2022.115195>

Zhong, N., Li, L., Xu, X., Cheong, L. Z., Zhao, X., & Li, B. (2010). Production of diacylglycerols through low-temperature chemical glycerolysis. *Food Chemistry*, 122(1), 228–232. <https://doi.org/10.1016/J.FOODCHEM.2010.02.067>

Zhou, H., Zhang, Z., Lee, W. J., Xie, X., Li, A., & Wang, Y. (2021). Acyl migration occurrence of palm olein during interesterification catalyzed by sn-1,3 specific lipase. *LWT*, 142, 111023. <https://doi.org/10.1016/J.LWT.2021.111023>