

DAFTAR PUSTAKA

- [ASTM] American Society for Testing and Material. 1997. Standard Test Methods for Polyurethane Raw Materials : Determination of Gardner and ASTM D4878 – 15: Standard Test Methods for Polyurethane Raw Materials: Determination of Viscosity of Polyols, 1–4. <https://doi.org/10.1520/D4878-15.2>
- [ASTM] American Society for Testing and Material. 2002. In D 3574: Standard Test Method for Tensile Properties of Polymer Matrix Composite Materials (pp. 1–13). ASTM Internasional
- [ASTM] Standard Test Method for Compressive Properties of Rigid Cellular Plastics. 2023. [Online] Available at: <https://www.ASTM.org/D1621-16.html> [Accessed 4 Desember 2024]
- [BSN] Badan Standarisasi Nasional, Syarat Mutu Minyak Kelapa Sawit, SNI 7709-2012
- [FAO] Food And Agriculture Organization. 2017. State of the World's Forests 2017
- Alagi, P., Choi, Y. J., dan Hong, S. C. 2016. Preparation of vegetable oil-based polyols with controlled hydroxyl functionalities for thermoplastic polyurethane. *European Polymer Journal*, 78, 46–60. <https://doi.org/10.1016/j.eurpolymj.2016.03.003>
- Allauddin, S., Somisetti, V., Ravinder, T., Rao, B. V. S. K., Narayan, R., dan Raju, K. V. S. N. 2016. One-pot synthesis and physicochemical properties of high functionality soy polyols and their polyurethane-Urea coatings. *Industrial Crops and Products*, 85, 361–371. <https://doi.org/10.1016/j.indcrop.2015.12.087>

- Andina, L. 2014. Studi Penggunaan Spektrofotometri Inframerah Dan Kemometrika Pada Penentuan Bilangan/ Dan Bilangan Iodium Minyak Goreng Curah, Media Farmasi, 11(2), pp. 108-119
- Akindoyo, J. O., Beg, M. D. H., Ghazali, S., Islam, M. R., Jeyaratnam, N., dan Yuvaraj, A. R. 2016. Polyurethane Types, Synthesis and Applications-a Review. *RSC Advances*, 6(115), 114453–114482. <https://doi.org/10.1039/c6ra14525f>
- Anisah, S., Sakti, Y. M., dan Sumarno. 2013. Pengaruh Penggunaan Blowing Agent Methylene Chloride dan Karbondioksida Terhadap Struktur Polyurethane Foam. 1(1), 1–3.
- Antwi, L. A. A., Nimoh, F., Agyemang, P., dan Apike, I. A. 2023. Perception and Adoption of Free Fatty Acid Reduction Techniques by Small Scale Palm Oil Processors: Evidence From Ghana. *Journal of Agriculture and Food Research*. <https://doi.org/10.1016/j.jafr.2022.100462>
- Bayat, P., dan Khorasani, M. 2021. Synthesis and characterization of transparent 1-package PUD based on castor oil and polyethylene glycol. *Progress in Organic Coatings*, 153, 106148. <https://doi.org/10.1016/j.porgcoat.2021.106148>
- Bernardini, J., Cinelli, P., Anguillesi, I., Coltelli, M. B., dan Lazzeri, A. 2015. Flexible Polyurethane Foams Green Production Employing Lignin or Oxypropylated Lignin. *European Polymer Journal*, 64, 147–156. <https://doi.org/10.1016/j.eurpolymj.2014.11.039>
- Borowicz, M., Paciorek-Sadowska, J., dan Isbrandt, M. 2020. Synthesis and application of new bio-polyols based on mustard oil for the production of selected polyurethane materials. *Industrial Crops and Products*, 155, 112831. <https://doi.org/10.1016/j.indcrop.2020.112831>

- Chattopadhyay, D.K. dan Webster, D.C. 2009. Thermal Stability and flame Retardancy of Polyurethanes. *Progress in Polymer Science*, 34, 1068-1133.
<https://doi.org/10.1016/j.progpolymsci.2009.06.002>
- Budirohmi, A. 2020. Sintesis Poliuretan Biodegradable dan Dekontaminan Bakteri dari PEG 400 dan Difenilmetan-4,4'-Diisosiyanat dengan Penambahan Pati Bonggol Pisang Kepok dan Nanopartikel TiO₂. *Disertasi, Universitas Hasanuddin*, 1–23.
- Choi, H. J., dan Kim, J. H. 2020. Static and Dynamic Comfort Properties of Polyurethane Foams Including a Flexible Amine c\Crosslinker. *Journal of Industrial and Engineering Chemistry*, 90, 260–265.
<https://doi.org/10.1016/j.jiec.2020.07.021>
- Choe, K., *et al.* 2016. Mechanical Properties of Polyurethane Foams: Influence of Cell Structure and Blowing Agents. *Journal of Cellular Plastics*, 52(2), 139–156
- CODEX. 2013. Codex alimentarius commission. Joit FA?WHO Food standards programme codes committe on fats and oils. Twenty-third session. Langkawi, malaysia, 25 february-1 March 2013. CX/FO 13/23/8
- Cornille, A., Michaud, G., Simon, F., Fouquay, S., Auvergne, R., Boutevin, B., dan Caillol, S. 2016. Promising Mechanical and Adhesive Properties of Isocyanate-Free Poly (Hydroxyurethane). *European Polymer Journal*, 84, 404–420.
<https://doi.org/10.1016/j.eurpolymj.2016.09.048>
- Coste, G., Negrell, C., dan Caillol, S. 2020. From Gas Release to Foam Synthesis, the Second Breath of Blowing Agents. *European Polymer Journal*, 140.
<https://doi.org/10.1016/j.eurpolymj.2020.110029>

- Derawi, D., Salimon, J., dan Ahmed, W. A. 2014. Preparation of epoxidized palm olein as renewable material by using peroxy acids. *Malaysian Journal of Analytical Sciences*, 18(3), 584–591
- Destiana, I., Mukminah, N, dan Fathurohman, F. 2021. *Teknologi Minyak Lemak* Ebook.
<https://doi.org/10.17605/OSF.IO/2PYCK>
- Dwijaya, M. S. 2016. *Pengaruh Penambahan Asam Adipat terhadap Kekuatan Tarik dan Stabilitas Termal dari Poliuretan*. Skripsi. Institut Teknologi Sepuluh Nopember.
- Fawzi, T., Yu, L. J., Badri, K. H., Sajuri, Z., Al-Talib, A. A. M., dan Eh Noum, S. Y. 2019. Sodium Hydrogen Bicarbonate and Water as Blowing Agent in Palm Kernel oil Based Polyol Polyurethane Foam. *Materials Today: Proceedings*, 39, 993–998. <https://doi.org/10.1016/j.matpr.2020.04.595>
- Fenner, B. R., Zimmermann, M. V. G., da Silva, M. P., dan Zattera, A. J. 2018. Comparative Analysis Among Coating Methods of Flexible Polyurethane Foams with Graphene Oxide. *Journal of Molecular Liquids*, 271, 74–79. <https://doi.org/10.1016/j.molliq.2018.08.113>
- Firsta, N. 2022. Kajian Perbandingan Pelarut : Distilat Asam Lemak Minyak Sawit (Dalms) dan Penggunaan Pelarut Daur Ulang pada Proses Saponifikasi aalms untuk Memperoleh Rendemen Tertinggi. *Tesis, Universitas Brawijaya*, 16(1), 1–23
- Gala, S. 2011. Sintesa Poliol dari Minyak Sawit dengan Reaksi Epoksidasi dan Hidroksilasi The Poliol Sithesis from Sawit Oil with Epoksidasion and Hidroksilasion Reaction. *Jurnal Chemica*, 12(2), 36–43
- Gurgel, D., Bresolin, D., Sayer, C., Cardozo Filho, L., dan Hermes de Araújo, P. H. 2021. Flexible Polyurethane Foams Produced

from Industrial Residues and Castor Oil. *Industrial Crops and Products*, 164(March), 113377.
<https://doi.org/10.1016/j.indcrop.2021.113377>

- Handayani, I. A., Purba, A. V., dan Rahmat, D. 2020. Nilai Antioksidan dan SPF Dari Kombinasi Minyak Biji Nyamplung (*Calophyllum Inophyllum* L) dan Minyak Kelapa Sawit (*Elaeis Guineensis*). *Majalah Farmaseutik*, 16(2), 176.
<https://doi.org/10.22146/farmaseutik.V16i2.52244>
- Hariyadi P. 2014. Mengenal minyak kelapa sawit dengan beberapa karakter unggulnya. Ebook. GAPKI (Gabungan Pengusaha Kelapa Sawit Indonesia)
- Hasibuan, H. A., dan Siahaan, D. 2013. Penentuan Bilangan Iod dan Titik Leleh Berdasarkan Kandungan Lemak Padat Minyak Sawit dan Minyak Inti Sawit. *Jurnal Standardisasi*, 15(1), 47–57.
- Hebda, E., Bukowczan, A., Michałowski, S., Wroński, S., Urbaniak, P., Kaczmarek, M., Hutnik, E., Romaniuk, A., Wolun-Cholewa, M., dan Pielichowski, K. 2020. Examining the Influence of Functionalized POSS on the Structure and Bioactivity of Flexible Polyurethane Foams. *Materials Science and Engineering C*, 108(May 2019).
<https://doi.org/10.1016/j.msec.2019.110370>
- Herrington, T. M., dan Hock, J. L. 2000. *Polyurethane foams: Chemistry and technology*. Rubber Chemistry and Technology, 73(3), 436–467
- Ifa, L., Sabara, Z., dan Nurjannah, N. 2018. Pembuatan Bahan Polimer dari Minyak Sawit. *Media Pustaka*, July, 1–169
- Ifa, L., Syarif, T., Sabara, Z., Nurjannah, N., Munira, M., dan Aryani, F. 2018. Study on the Kinetics of Epoxidation Reaction Of RBD Palm Olein. *IOP Conference Series: Earth and Environmental Science*, 175(1).

<https://doi.org/10.1088/1755-1315/175/1/012035>

- Imran, M., Bandyopdhyay, A. K., Gandhi, T. K. S., Rahaman, A., dan Chandan, M. R. 2021. Mechanical property enhancement of flexible polyurethane foam using alumina particles Mohammed. *Materials Today: Proceedings*, 45, 4040–4044. <https://doi.org/10.1016/j.matpr.2020.10.754>
- Irawati, Kurniawan, C., dan Harjono. 2019. Optimasi Epoksidasi Fatty Acid Methyl Esters (FAME) Berbasis Palm Olein Sebagai Aditif Pemlastis Cat. *Indonesian Journal of Chemical Science* 8(1), 2–9. <http://journal.unnes.ac.id/sju/index.php/ijcs>
- Istiqomah, Abdullah, dan Astuti, M. D. 2020. Peningkatan Kualitas Bio-Oil Hasil Pirolisis Minyak Kelapa Sawit Menggunakan Reaksi Epoksidasi dan Hidroksilasi. *Sains Dan Terapan Kimia*, 14(2), 63–72.
- Ionescu, M. 2016. Chemistry and Technology of Polyols for Polyurethanes, 2nd Edition (2nd ed., Vol. 1). Smithers Rapra. <http://www.polymer-books.com>
- Izarra Pérez, Irene dan Borreguero, Ana dan Garrido, Ignacio dan Rodríguez, Juan dan Carmona, Manuel. (2021). Comparison of flexible polyurethane foams properties from different polymer polyether polyols. *Polymer Testing*. 100. 107268. [10.1016/j.polymertesting.2021.107268](https://doi.org/10.1016/j.polymertesting.2021.107268)
- Jaf, L., Al-Moameri, H. H., Ayash, A. A., Lubguban, A. A., Malaluan, R. M., dan Ghosh, T. 2023. Limits of Performance of Polyurethane Blowing Agents. *Sustainability (Switzerland)*, 15(8). <https://doi.org/10.3390/su15086737>
- Jia, P., Ma, C., Lu, J., Yang, W., Jiang, X., Jiang, G., Yin, Z., Qiu, Y., Qian, L., Yu, X., Hu, Y., Hu, W., dan Wang, B. 2022. Design of Copper Salt-Graphene Nanohybrids to Accomplish Excellent Resilience and Superior Fire Safety for Flexible Polyurethane Foam. *Journal of Colloid and Interface Science*,

606, 1205–1218. <https://doi.org/10.1016/j.jcis.2021.08.139>

Kaikade, D. S., dan Sabnis, A. S. 2023. Polyurethane foams from vegetable oil-based polyols: a review. *Polymer Bulletin*, 80(3), 2239–2261. <https://doi.org/10.1007/s00289-022-04155-9>

Kattiyaboot, T., dan Thongpin, C. 2016. Effect of Natural Oil Based Polyols on the Properties of Flexible Polyurethane Foams Blown by Distilled Water. *Energy Procedia*, 89, 177–185. <https://doi.org/10.1016/j.egypro.2016.05.024>

Kinasih, N. A., dan Cifriadi, A. 2015. Uji Coba Pembuatan Pelunak Karet alami Berbasis Minyak Jarak Pagar Epoksi. *Jurnal Penelitian Karet*, 33(1), 91–100. <https://doi.org/10.22302/ppk.jpk.V33i1.175>

Kurańska, M., Benes, H., Polaczek, K., Trhlikova, O., Walterova, Z., dan Prociak, A. 2019. Effect of homogeneous catalysts on ring opening reactions of epoxidized cooking oils. *Journal of Cleaner Production*, 230, 162–169. <https://doi.org/10.1016/j.jclepro.2019.05.096>

Kusumaningrum, A., Wayan Gunam, I. B., dan Mahaputra Wijaya, I. M. (2019). Optimasi Suhu dan pH Terhadap Aktivitas Enzim Endoglukanase Menggunakan Response Surface Methodology (Rsm). *Jurnal Rekayasa Dan Manajemen Agroindustri*, 7(2), 243. <https://doi.org/10.24843/jrma.2019.v07.i02.p08>

Lee, S. T., dan Ramesh, N. S. 2004. *Polymeric foams mechanisms and materials*. CRC Press LLC

Li, T. T., Liu, P., Wang, H., Dai, W., Wang, J., Wang, Z., Shiu, B. C., Lou, C. W., dan Lin, J. H. 2021. Preparation and Characteristics of Flexible Polyurethane Foam Filled with Expanded Vermiculite Powder and Concave-Convex Structural Panel. *Journal of Materials Research and*

Technology, 12, 1288–1302.
<https://doi.org/10.1016/j.jmrt.2021.03.045>

Li, G., dan John, M. J. 2017. *Cell Structure Control in Flexible Polyurethane Foams: A review*. *Polymer-Plastics Technology and Engineering*, 56(6), 585–597.

Liang, Y., Cui, T., dan Liu, L. 2021. Effect of Multi-Armed Chain Extender on Microphase Morphology, Stress-Strain Behavior and Electromechanical Properties of Polyurethane Elastomers. *Polymer*, 235, 124279. <https://doi.org/10.1016/j.polymer.2021.124279>

LibreTexts. *Infrared Spectroscopy Absorption Table* [Internet]. Chemistry LibreTexts; 2014 Nov 30 [diakses 15 Juli 2025]

Liu, Z., He, H., Zhang, J., Zheng, J., dan Zhuang, H. 2020. Experimental Investigation and Numerical Simulation of the Combustion of Flexible Polyurethane Foam with Larger Geometries. *Polymer Testing*, 81, 106270. <https://doi.org/10.1016/j.polymertesting.2019.106270>

Long, Y., An, J., dan Xie, X. 2020. CO₂-Releasing Blowing Agents from Modified Polyethylenimines Slightly Consume Isocyanate Groups While Foaming Polyurethanes. *Arabian Journal of Chemistry*, 13(1), 3226–3235. <https://doi.org/10.1016/j.arabjc.2018.10.007>

Lu, J., Cheng, W., Shi, Y., Jia, P., Liao, C., Zhang, K., Song, L., Wang, B., dan Hu, Y. 2021. A Facile Strategy for Lightweight, Anti-Dripping, Flexible Polyurethane Foam with Low Smoke Emission Tendency and Superior Electromagnetic Wave Blocking. *Journal of Colloid and Interface Science*, 603, 25–36. <https://doi.org/10.1016/j.jcis.2021.06.103>

Maisaroh, dan Susetyo, I. B. 2017. Optimasi pada Epoksidasi Asam Oleat Sebagai Bahan Baku Dalam Sintesis Asam 9,10-Dihidroksi Stearat (DHSA). *Journal of Agro-Based Industry*, 34 (No. 2)(1), 96–103. <https://doi.org/10.32765/warta>

ihp.V34i2.3663

- Makowska, S., Szymborski, D., Sienkiewicz, N., dan Kairytė, A. (2024). Current Progress in Research into Environmentally Friendly Rigid Polyurethane Foams. *Materials*, 17(16), 1–30. <https://doi.org/10.3390/ma17163971>
- Marcos-Fernández, Á. A., Navarro, R., Benito, E., Guzmán, J., dan Garrido, L. (2021). Properties of Polyurethanes Derived from Poly(diethylene glycol terephthalate). *European Polymer Journal*, 155. <https://doi.org/10.1016/j.eurpolymj.2021.110576>
- Mardiani, M. 2019. Response Surface Methodology Serta Model Regresi Berganda Optimasi Pengaruh Tugas Dan Kehadiran Mahasiswa Terhadap Nilai Akademik. *Prosiding Seminar Nasional Pakar*, 1–6. <https://doi.org/10.25105/pakar.v0i0.4211>
- Mohammadi, A., Wang, D. Y., Hosseini, A. S., dan De La Vega, J. (2019). Effect of Intercalation of Layered Double Hydroxides with Sulfonate-Containing Calix-Arenes on the Flame Retardancy of Castor Oil-Based Flexible Polyurethane Foams. *Polymer Testing*, 79(May), 106055. <https://doi.org/10.1016/j.polymertesting.2019.106055>
- Mohanty, S. R., Mohanty, S., dan Nayak, S. K. 2021. Synthesis and Evaluation of Novel Acrylic and Ester-Based Polyols for Transparent Polyurethane Coating Applications. *Materials Today Communications*, 27, 102228. <https://doi.org/10.1016/j.mtcomm.2021.102228>
- Mohd Yusof, M. A. Bin, Chan, Y. J., Chong, C. H., dan Chew, C. L. 2023. Effects of Operational Processes and Equipment in Palm Oil Mills on Characteristics of Raw Palm Oil Mill Effluent (POME): a Comparative Study of Four Mills. *Cleaner Waste Systems*, 5 (May), 100101. <https://doi.org/10.1016/j.clwas.2023.100101>

- Montoya, C., B. Cochard, A. Flori, D. Cros, R. Lopes, T. Cuellar, S. Espeout, I. Syahputra, P. Villeneuve, m. Pina, E. Ritter, T. Leroy dan N. Billotte. 2014. Genetic architecture of palm oil fatty acid compositin in cultivated oil palm (*Elaeis guineensis* Jacq=q.) compared to its wild relative *E. Oleifera* (h.B.K.) cortes. *Plos one*. 9: 1-13
- Nabipour, H., Wang, X., Song, L., dan Hu, Y. 2020. A Fully Bio-Based Coating Made from Alginate, Chitosan and Hydroxyapatite for Protecting Flexible Polyurethane Foam from Fire. *Carbohydrate Polymers*, 246, 116641. <https://doi.org/10.1016/j.carbpol.2020.116641>
- Nadyaini, W. N. 2020. *Response Surface Methodology (RSM): Learn and Apply*. January, 24–40. <https://www.researchgate.net/publication/339301705>
- Neswati, N. 2023. Pengembangan Potensi Kelapa Sawit (*Elaeis guineensis* Jacq.) Sebagai Bahan Baku Industri Busa Poliuretan Fleksibel. *Nucl. Phys.*, 13(1), 104–116.
- Neswati, N., Novizar, N., Arif, S., dan Yusniwati, Y. 2019. Synthesis, Characterization and Modification of Flexible Polyurethane Foams Using Raw Materials From Biopolyols Based on Palm Oil and Other Vegetable Oils: a Review. *Jurnal Agroindustri*, 9(2), 66–82. <https://doi.org/10.31186/j.agroindustri.9.2.66-82>
- Nilawar, S., dan Chatterjee, K. 2022. Olive oil-derived degradable polyurethanes for bone tissue regeneration. *Industrial Crops and Products*, 185, 115136. <https://doi.org/10.1016/j.indcrop.2022.115136>
- Nitbani, F. O., Tambaru, D., Gauru, I., Kusumawati, A., Kimia, J., Sains, F., dan Teknik, D. 2015. Synthesis of Methyl 9,10-Epoxy Stearate from Castrol Oil in Timor Island. *Sains Dan Terapan Kimia*, 9(1), 37–46

- Nofiyanti, E., dan Mariam, N. 2018. Sintesis dan Karakterisasi Busa Poliuretan dari Minyak Goreng Bekas dan Toluena Diisosiyanat dengan Penambahan PEG-400. *CHEESA: Chemical Engineering Research Articles*, 1(1), 21–25
- Oertel, G. 1993. *Polyurethane handbook* (2nd ed.). Hanser Publishers, Munich, 770 pp., DM 358, ISBN 3-446-17198-3
- Pascault, J. P., dan Williams, R. J. J. 2015. *Polymer Foams: Structure–Property–Performance*. Wiley.
- Petrovic, Z. S. 2008. Polyurethanes from Vegetable Oils. *Polymer Reviews*, 48(1), 109–155. <https://doi.org/10.1080/15583720701834224>
- Peyrton, J., dan Avérous, L. 2021. Structure-Properties Relationships of Cellular Materials from Biobased Polyurethane Foams. *Materials Science and Engineering R: Reports*, 145(February). <https://doi.org/10.1016/j.mser.2021.100608>
- Pillai, P. K. S., Li, S., Bouzidi, L., dan Narine, S. S. 2016. Metathesized Palm Oil Polyol for the Preparation of Improved Bio-Based Rigid and Flexible Polyurethane Foams. *Industrial Crops and Products*, 83, 568–576. <https://doi.org/10.1016/j.indcrop.2015.12.068>
- Polaczek, K., Kurańska, M., Auguścik-Królikowska, M., Prociak, A., dan Ryszkowska, J. 2021. Open-cell polyurethane foams of very low density modified with various palm oil-based bio-polyols in accordance with cleaner production. *Journal of Cleaner Production*, 290. <https://doi.org/10.1016/j.jclepro.2021.125875>
- Prianto, J. 2022. *Sintesis Senyawa Polioliol Sebagai Senyawa Intermediate Pada Pembuatan Biolubricant Dari Crude Palm Oil Melalui Reaksi Hidroksilasi*. Tesis. Universitas Sriwijaya
- Prociak, A., Malewska, E., Kurańska, M., Bąk, S., dan Budny, P.

2018. Flexible Polyurethane Foams Synthesized with Palm Oil-Based Bio-Polyols Obtained with the Use of Different Oxirane Ring Opener. *Industrial Crops and Products*, 115(May 2017), 69–77. <https://doi.org/10.1016/j.indcrop.2018.02.008>
- Ramadhan, M. K. 2017. *Sintesis Ester Gliserol Dan Ester Polietilen Glikol Berbasis Asam Oleat Untuk Sistem Epoksi Termomodifikasi Poliuretan-Siloksan*. Skripsi. UIN Jakarta
- Randall, D., dan Lee, S. 2002. *The Polyurethanes Book*. Wiley. <https://books.google.co.id/books?id=AONTAAAAMAAJ>
- Rao, W. H., Xu, H. X., Xu, Y. J., Qi, M., Liao, W., Xu, S., dan Wang, Y. Z. 2018. Persistently Flame-Retardant Flexible Polyurethane Foams by a Novel Phosphorus-Containing Polyol. *Chemical Engineering Journal*, 343, 198–206. <https://doi.org/10.1016/j.cej.2018.03.013>
- Rashmi, B. J., Rusu, D., Prashantha, K., Lacrampe, M. F., dan Krawczak, P. 2013. Development of Water-Blown Bio-Based Thermoplastic Polyurethane Foams Using Bio-Derived Chain Extender. *Journal of Applied Polymer Science*, 128(1), 292–303. <https://doi.org/10.1002/app.38183>
- Raquez, J. M., *et al.* 2010. New developments in Bio-Based Foamed Polyurethanes. *Progress in Polymer Science*, 35(8), 487–509
- Shen, Y., He, J., Xie, Z., Zhou, X., Fang, C., dan Zhang, C. 2019. Synthesis and Characterization of Vegetable Oil Based Polyurethanes with Tunable Thermomechanical Performance. *Industrial Crops and Products*, 140(August), 111711. <https://doi.org/10.1016/j.indcrop.2019.111711>
- Shi, J., Zheng, T., Zhang, Y., Guo, B., dan Xu, J. 2021. Cross-linked Polyurethane with Dynamic Phenol-carbamate Bonds: Properties Affected by the Chemical Structure of Isocyanate. *Polymer Chemistry*, 12(16), 2421–2432.

<https://doi.org/10.1039/d1py00157d>

- Simón, D., Borreguero, A. M., De Lucas, A., dan Rodríguez, J. F. 2015. Valorization of Crude Glycerol as a Novel Transesterification Agent in the Glycolysis of Polyurethane foam Waste. *Polymer Degradation and Stability*, 121, 126–136. <https://doi.org/10.1016/j.polymdegradstab.2015.09.001>
- Sinaga, A. G. S., dan Siahaan, D. 2015. Pengaruh Kandungan Komponen Minor dari Minyak Kelapa Sawit (*Elaeis Guineensis Jacq.*) Terhadap Aktivitas Antioksidan pada Proses Pemurnian Karotenoid. *Pharmaceutical Sciences And Research*, 2(3), 135–142. <https://doi.org/10.7454/psr.v2i3.3344>
- Sismantoro, A. 2017. *Karakterisasi Bahan Akustik Poliuretan Berpenguat Partikel Cangkang Kelapa Sawit*. Skripsi. Institut Teknologi Sepuluh Nopember
- Sudirman, S. 2019. Sintesis Busa Rigid Poliuretan dari Poliol Trigliserida Minyak Nyamplung (*Chalophyllum inphyllum*). *Orbital Chemistry Journal*, 1(1), 34–42. <https://doi.org/10.29303/orbchem.v1i1.9>
- Sumarna, D., Lauren Sodias Wake, dan Suprpto, H. 2017. Studi Karakteristik Minyak Sawit Merah dari Pengolahan Konvensional CPO (*Crude Palm Oil*) Study on Red Palm Oil Characteristics Produced From CPO (*Crude Palm Oil*). *Jurnal Teknologi Pertanian Universitas Mulawarman* 20, 12(February (2)), 35–38
- Syahidan, A. M. 2024. *Pengaruh Surfaktan Silikon dan Aquades terhadap Struktur, Morfologi, Densitas, dan Kuat Tekan Busa Poliuretan dengan Pemanfaatan Minyak Jarak (Castor Oil)*. Skripsi. Universitas Sultan Ageng Tirtayasa.
- Tan, S. L., Suhaimy, S. H. M., dan Samad, N. A. A. 2022. Evaluation of Fresh Palm Oil Adulteration with Recycled Cooking Oil Using GC-MS and ATR-FTIR Spectroscopy: A

- review. *Czech Journal of Food Sciences*, 40(1), 1–14.
<https://doi.org/10.17221/116/2021-CJFS>
- Thuy, N. T., dan Lan, P. N. 2021. A Study on Making Rigid Polyurethane Foams from Vietnam Rubber Seed Oil-Based Polyol by Using Water as a Single Blowing Agent. *International Journal of Polymer Science*, 2021, 4–8.
<https://doi.org/10.1155/2021/6638109>
- Triwulandari, E., Astrini, N., dan Haryono, A. 2014. Pembuatan Polioli Berbasis Komponen Minyak Sawit Sebagai Bahan Baku Busa Poliuretan. *Jurnal Sains Materi Indonesia (Jusami)*, 16(1), 43–48.
- Uram, K., Prociak, A., Vevere, L., Pomilovskis, R., Cabulis, U., dan Kirpluks, M. 2021. Natural Oil-Based Rigid Polyurethane foam Thermal Insulation Applicable at Cryogenic Temperatures. *Polymers*, 13(24).
<https://doi.org/10.3390/polym13244276>
- Wang, J., Zhang, C., Deng, Y., dan Zhang, P. 2022. A Review of Research on the Effect of Temperature on the Properties of Polyurethane Foams. *Polymers*, 14(21).
<https://doi.org/10.3390/polym14214586>
- Wang, X., Zhang, P., Huang, Z., Xing, W., Song, L., dan Hu, Y. 2019. Effect of Aluminum Diethylphosphinate on the Thermal Stability and Flame Retardancy of Flexible Polyurethane Foams. *Fire Safety Journal*, 106(March), 72–79.
<https://doi.org/10.1016/j.firesaf.2019.04.001>
- Xiangming, H. 2015. Effects of Surfactants on the Mechanical Properties, Microstructure, and Flame Resistance of Phenol–Urea–Formaldehyde Foam. *Polymer Bulletin*, Vol. 1, No. 73, Pp. 1–20 Xie, F
- Xu, W., Wang, W., Hao, L., Liu, H., Hai, F., dan Wang, X. 2021. Synthesis and Properties of Novel Triazine-Based Fluorinated Chain Extender Modified Waterborne Polyurethane

Hydrophobic Films. *Progress in Organic Coatings*, 157(April), 106282.
<https://doi.org/10.1016/j.porgcoat.2021.106282>

Yang, R., Li, M., Zhang, X., dan Li, J. 2021. Preparation of a Catalyst-Free and Water-Blown Rigid Polyurethane Foam from Malic-Co-Citric Acid-Based Polyols. *Industrial Crops And Products*, 169 (January).
<https://doi.org/10.1016/j.indcrop.2021.113648>

Zanidya. 2019. *Studi Efek dari Blowing agent Metilen Klorida dan Chain Extender Pati pada Sifat Fisika, Mekanik, dan Termal dari Busa Bio-Poliuretan. Skripsi*. Universitas Indonesia

Zhou, X., Fang, C., Yu, Q., Yang, R., Xie, L., Cheng, Y., dan Li, Y. 2017. Synthesis and Characterization of Waterborne Polyurethane Dispersion from Glycolized Products of Waste Polyethylene Terephthalate Used as Soft and Hard Segment. *International Journal of Adhesion and Adhesives*, 74, 49–56.
<https://doi.org/10.1016/j.ijadhadh.2016.12.010>

Zhou, F., Ma, C., Zhang, K., Chan, Y. yam, Xiao, Y., Schartel, B., Doring, M., Wang, B., Hu, W., dan Hu, Y. 2021. Synthesis of Ethyl (Diethoxymethyl) phosphinate Derivatives and Their Flame Retardancy in Flexible Polyurethane Foam: Structure-flame Retardancy Relationships. *Polymer Degradation and Stability*, 10955

