

## DAFTAR PUSTAKA

- Abbasi, R., & Baheti, V. (2018). Preparation of nanocellulose from jute fiber waste. *Journal of Textile Engineering & Fashion Technology*, 4(1), 101–104. <https://doi.org/10.15406/jteft.2018.04.00126>
- Abbass, A., Paiva, M. C., Oliveira, D. V., Lourenço, P. B., & Figueiro, R. (2021). Insight into the effects of solvent treatment of natural fibers prior to structural composite casting: Chemical, physical and mechanical evaluation. *Fibers*, 9(9), 1–18. <https://doi.org/10.3390/fib9090054>
- Abрал, H., Basri, A., Muhammad, F., Fernando, Y., Hafizulhaq, F., Mahardika, M., Sugiarti, E., Sapuan, S. M., Ilyas, R. A., & Stephane, I. (2019). A simple method for improving the properties of the sago starch films prepared by using ultrasonication treatment. *Food Hydrocolloids*, 93(January), 276–283. <https://doi.org/10.1016/j.foodhyd.2019.02.012>
- Afifah, N., & Ratnawati, L. (2017). Quality assessment of dry noodles made from blend of MOCAF flour, rice flour and corn flour. *IOP Conf. Series: Earth and Environmental Science*, 1–9. <https://doi.org/10.1088/1755-1315/>
- Agustin-Salazar, S., Cerruti, P., Medina-Juárez, L. Á., Scarinzi, G., Malinconico, M., Soto-Valdez, H., & Gamez-Meza, N. (2018). Lignin and holocellulose from pecan nutshell as reinforcing fillers in poly (lactic acid) biocomposites. *International Journal of Biological Macromolecules*, 115, 727–736. <https://doi.org/10.1016/j.ijbiomac.2018.04.120>
- Ahimbisibwe, M., Banadda, N., Seay, J., Nabuuma, B., Atwijukire, E., Wembabazi, E., & Nuwamanya, E. (2019). Influence of Weather and Purity of Plasticizer on Degradation of Cassava Starch Bioplastics in Natural Environmental Conditions. *Journal of Agricultural Chemistry and Environment*, 08(04), 237–250. <https://doi.org/10.4236/jacen.2019.84018>
- Ali, A., Wani, T. A., Wani, I. A., & Masoodi, F. A. (2016). Comparative study of the physico-chemical properties of rice and corn starches grown in Indian temperate climate. *Journal of the Saudi Society of Agricultural Sciences*, 15(1), 75–82. <https://doi.org/10.1016/j.jssas.2014.04.002>
- Almeida, D. S. De, Duarte, E. H., Hashimoto, E. M., Franciele, R., Turbiani, B., Muniz, E. C., Ricardo, P., Souza, D. S. De, Gimenes, M. L., & Martins, L. D. (2020). Development and characterization of electrospun cellulose acetate nanofibers modified by cationic surfactant. *Polymer Testing*, 81(October 2019), 106206. <https://doi.org/10.1016/j.polymertesting.2019.106206>
- Amin, M. R., Chowdhury, M. A., & Kowser, M. A. (2019). Characterization and performance analysis of composite bioplastics synthesized using titanium dioxide nanoparticles with corn starch. *Heliyon*, 5(8), e02009. <https://doi.org/10.1016/j.heliyon.2019.e02009>
- Andrade, J. A., Lisboa, M. D., Cintra, C., Ramirez, J. L., Signini, R., Martins, D., Cavalcante, S. M., & Ramirez, D. P. (2019). Sorghum straw : Pulping and

bleaching process optimization and synthesis of cellulose acetate. *International Journal of Biological Macromolecules*, 135, 877–886. <https://doi.org/10.1016/j.ijbiomac.2019.05.014>

AOAC. (1995). Official Methods of Analysis of AOAC INTERNATIONAL. In W. Horwitz (Ed.), *AOAC International* (Issue 18th Edition). AOAC INTERNATIONAL SUITE.

Arifin, U. F., Adetya, N. P., Pambudi, W., & Ratnaningsih, W. (2022). Quality Evaluation of Bioplastic from Glutinous Rice Starch Reinforced with Bamboo Leaf Powder. *CHEESA: Chemical Engineering Research Articles*, 5(2), 82. <https://doi.org/10.25273/cheesa.v5i2.14235.82-91>

Arikan, E. B., & Bilgen, H. D. (2019). Production of bioplastic from potato peel waste and investigation of its biodegradability. *International Advanced Researches and Engineering Journal*, 03(02), 93–97. <https://doi.org/10.35860/iarej.420633>

Arsyad, M. (2016). Pengaruh Penambahan Tepung MOCAF Terhadap Kualitas Produk Biskuit. *Jurnal Agropolitan*, 3(3), 52–61.

Asmoro, N. W. (2021). Karakteristik dan Sifat Tepung Singkong Termodifikasi (MOCAF) dan Manfaatnya pada Produk Pangan. *Journal of Food and Agricultural Product*, 1(1), 34. <https://doi.org/10.32585/jfap.v1i1.1755>

Assalam, S., Asmoro, N. W., Tari, A. I. N., & Hartati, S. (2019). Pengaruh Ketebalan Irisan Chips Singkong Dan Lama Fermentasi Terhadap Sifat Fisiko Kimia Tepung MOCAF (Modified Cassava Flour). *AGRISAINTEFIKA: Jurnal Ilmu-Ilmu Pertanian*, 3(1), 31. <https://doi.org/10.32585/ags.v3i1.554>

Atakhanov, A., Turdikulov, I., & Mamadiyorov, B. (2020). *Isolation of Nanocellulose from Cotton Cellulose and Computer Modeling of Its Structure. January*. <https://doi.org/10.4236/ojchem.2019.94010>

Atiwesh, G., Mikhael, A., Parrish, C. C., Banoub, J., & Le, T.-A. T. (2021). Environmental impact of bioplastic use: A review. *Heliyon*, 7(9), e07918. <https://doi.org/10.1016/j.heliyon.2021.e07918>

Ayu, G. E., Lubis, M., Ginting, M. H. S., & Hayat, N. (2023). Physical Resistance of Corn Starch Based Bioplastic At Various Storage Temperature. *Journal of Engineering Science and Technology*, 18(1), 235–243.

Azuwa, M., Salleh, W. N. W., Jaafar, J., Ismail, A. F., Abd, M., Bakar, A., Zain, M. F. M., & Asikin, N. (2017). Physicochemical characterization of cellulose nanocrystal and nanoporous self-assembled CNC membrane derived from *Ceiba pentandra*. *Carbohydrate Polymers*, 157, 1892–1902. <https://doi.org/10.1016/j.carbpol.2016.11.078>

Babae, M., Jonoobi, M., Hamzeh, Y., & Ashori, A. (2015). Biodegradability and mechanical properties of reinforced starch nanocomposites using cellulose nanofibers. *Carbohydrate Polymers*, 132, 1–8.

<https://doi.org/10.1016/j.carbpol.2015.06.043>

- Baheti, V., Malik, A., Abbasi, R., & Militky, J. (2012). Ball milling of jute fibre wastes to prepare nanocellulose. *World Journal of Engineering*, 9(February), 46–50. <https://doi.org/10.1260/1708-5284.9.1.45>
- Bakar, N., Chin, S. C., Siregar, J. P., & Ngien, S. K. (2020). A review on physical, mechanical, thermal properties and chemical composition of plant fibers. *IOP Conference Series: Materials Science and Engineering*, 736(5). <https://doi.org/10.1088/1757-899X/736/5/052017>
- Bakar, S. S. S., Saufi, N. F. M., Rahman, R. A., Musa, L., & Marzuki, H. F. A. (2018). Study on the effect of NaOH concentration treatment on kenaf fiber and placement of winding angle on tensile properties of kenaf fibre reinforced epoxy composites. *AIP Conference Proceedings*, 2045. <https://doi.org/10.1063/1.5080918>
- Balakrishnan, P., Gopi, S., Sreekala, M. S., & Thomas, S. (2018). UV resistant transparent bionanocomposite films based on potato starch/cellulose for sustainable packaging. *Starch/Staerke*, 70(1–2), 1–34. <https://doi.org/10.1002/star.201700139>
- Bayer, I. S., Guzman-Puyol, S., Heredia-Guerrero, J. A., Ceseracciu, L., Pignatelli, F., Ruffilli, R., Cingolani, R., & Athanassiou, A. (2014). Direct transformation of edible vegetable waste into bioplastics. *Macromolecules*, 47(15), 5135–5143. <https://doi.org/10.1021/ma5008557>
- Berthet, M., & Gontard, N. (2015). Impact of fibre moisture content on the structure/mechanical properties relationships of PHBV / wheat straw fibres biocomposites. *Composites Science and Technology*, 117, 386–391. <https://doi.org/10.1016/j.compscitech.2015.07.015>
- Bian, H., Shu, X., Su, W., Luo, D., Dong, M., Liu, X., Ji, X., & Dai, H. (2022). Biodegradable, Flexible and Ultraviolet Blocking Nanocellulose Composite Film Incorporated with Lignin Nanoparticles. *International Journal of Molecular Sciences*, 23(23). <https://doi.org/10.3390/ijms232314863>
- Bilo, F., Pandini, S., Sartore, L., Depero, L. E., Gargiulo, G., Bonassi, A., Federici, S., & Bontempi, E. (2018). A sustainable bioplastic obtained from rice straw. *Journal of Cleaner Production*, 200, 357–368. <https://doi.org/10.1016/j.jclepro.2018.07.252>
- Boufi, S., & Chaker, A. (2016). Easy production of cellulose nanofibrils from corn stalk by a conventional high speed blender. *Industrial Crops & Products*. <https://doi.org/10.1016/j.indcrop.2016.05.030>
- Boufi, S., & Gandini, A. (2014). Triticale Crops Residue: A Cheap Material for High Performance Nanofibrillated Cellulose. *RSC Advances*, 1–28. <https://doi.org/10.1039/C4RA12918K>
- Budi, Waella, S., Winarko, Rokhmalia, F., Darjati, & Peorwati, S. (2023). Analisis

Kandungan Nitrogen, Fosfor, Kalium pada Humus di Tanah pada Tempat Penampungan Sementara. *Jurnal Penelitian Kesehatan Suara Forikes*, 14(1), 62–66. <http://forikes-ejournal.com/index.php/SF>

Budiarto. (2011). Opportunity of modified cassava flour (MOCAF) as wheat flour substitute an alternative materials to support food security. *International Seminar on Natural Resources Climate Change and Food Security in Developing Countries*, 837–847. <http://eprints.upnyk.ac.id/id/eprint/13539>

Bühler, J. M., & Goot, A. J. Van Der. (2022). *Fibrous Structures from Starch and Gluten*. 1–15.

Campano, C., Balea, A., Blanco, Á., & Negro, C. (2020). A reproducible method to characterize the bulk morphology of cellulose nanocrystals and nanofibers by transmission electron microscopy. *Cellulose*, 27(9), 4871–4887. <https://doi.org/10.1007/s10570-020-03138-1>

Chaiarrekij, S., Apirakchaiskul, A., Suvarnakich, K., & Kiatkamjornwong, S. (2011). Kapok i: characteristics of kapok fiber as a potential pulp source for papermaking. *BioResources*, 7(1), 475–488.

Chaiarrekij, S., Pattanapiyasup, S., Lekhalawan, S., & Phiphatwitthay, S. (2012). Use of Kapok Pulp to Improve Properties of Recycled Paper. *The Journal of the Royal Institute of Thailand*, 37.

Chinma, C. E., Ariahu, C. C., & Abu, J. O. (2013). Chemical composition, functional and pasting properties of cassava starch and soy protein concentrate blends. *Journal of Food Science and Technology*, 50(6), 1179–1185. <https://doi.org/10.1007/s13197-011-0451-8>

Chisenga, S. M., Workneh, T. S., Bultosa, G., & Laing, M. (2019). Characterization of physicochemical properties of starches from improved cassava varieties grown in Zambia. *AIMS Agriculture and Food*, 4(4), 939–966. <https://doi.org/10.3934/agrfood.2019.4.939>

Chong, T. Y., Chan, Y. S., Law, M. C., Kim, J., & Ling, U. (2021). The Thermo-Mechanical Properties of Corn Cob Lignin-Containing Cellulose Nanofibril Reinforced Bioplastics. *Research Square*.

Christwardana, M., Ismojo, & Marsudi, S. (2022). Biodegradation Kinetic Study of Cassava & Tannia Starch-Based Bioplastics as Green Material in Various Media. *Molekul*, 17(1), 19–29.

Chung, B. Y., Hyeong, M. H., An, B. C., Lee, E. M., Lee, S. S., Kim, J. H., Kim, J. S., Kim, T. H., & Cho, J. Y. (2009). Flame-resistant kapok fiber manufactured using gamma ray. *Radiation Physics and Chemistry*, 78(7–8), 513–515. <https://doi.org/10.1016/j.radphyschem.2009.03.036>

Cruz, I. A., de Melo, L., Leite, A. N., Melquiades Sátiro, J. V., Santos Andrade, L. R., Torres, N. H., Cabrera Padilla, R. Y., Bharagava, R. N., Tavares, R. F., & Romanholo Ferreira, L. F. (2019). A new approach using an open-source low

cost system for monitoring and controlling biogas production from dairy wastewater. *Journal of Cleaner Production*, 241. <https://doi.org/10.1016/j.jclepro.2019.118284>

Daneshfozoun, S., Abdullah, M. A., & Abdullah, B. (2017). Preparation and characterization of magnetic biosorbent based on oil palm empty fruit bunch fibers, cellulose and *Ceiba pentandra* for heavy metal ions removal. *Industrial Crops and Products*, 105(May), 93–103. <https://doi.org/10.1016/j.indcrop.2017.05.011>

Das, P. C., Khan, M. J., Rahman, M. S., Majumder, S., & Islam, M. N. (2019). Comparison of the physico-chemical and functional properties of mango kernel flour with wheat flour and development of mango kernel flour based composite cakes. *NFS Journal*, 17(October), 1–7. <https://doi.org/10.1016/j.nfs.2019.10.001>

Dewi, N. S., Parnanto, N. H. R., & Ariyantoro, A. R. (2014). Karakteristik Sifat Fisikokimia Tepung Bengkuang (*Pachyrhizus erosus*) Dimodifikasi Secara Asetilasi Dengan Variasi Konsentrasi Asam Asetat Selama Perendaman. *Jurnal Teknologi Hasil Pertanian*, 7(2), 104–112. <https://doi.org/10.20961/jthp.v0i0.13014>

Dias, O. A. T., Konar, S., Leão, A. L., Yang, W., Tjong, J., & Sain, M. (2020). Current State of Applications of Nanocellulose in Flexible Energy and Electronic Devices. *Frontiers in Chemistry*, 8(May). <https://doi.org/10.3389/fchem.2020.00420>

Diniyah, N., Subagio, A., Nur, R., Sari, L., & Yuwana, N. (2018a). Sifat Fisikokimia dan Fungsional Pati dari MOCAF ( Modified Cassava Flour ) Varietas Kaspro dan Cimanggu. *Jurnal Penelitian Pascapanen Pertanian*, 15(2), 80–90.

Diniyah, N., Subagio, A., Nur, R., Sari, L., & Yuwana, N. (2018b). Sifat Fisikokimia , dan Fungsional Pati dari MOCAF ( Modified Cassava Flour ) Varietas Kaspro dan Cimanggu. *Jurnal Penelitian Pascapanen Pertanian*, 15(2), 80–90.

Diniyah, N., Yuwana, N., Purnomo, B. H., & Subagio, A. (2018). Karakterisasi sera MOCAF (modified cassava flour ) dari ubikayu varietas manis dan pahit. *Jurnal Penelitian Pascapanen Pertanian*, 15(3), 114–122.

Direktorat Jenderal Perkebunan. (2022). Statistik Perkebunan Non Unggulan Nasional. In *Sekretariat Direktorat Jenderal Perkebunan*.

Dufresne, A. (2019). Nanocellulose Processing Properties and Potential Applications. *Current Forestry Reports*.

Elisusanti, Illing, I., & Alam, M. N. (2019). Pembuatan Bioplastik Berbahan Dasar Pati Kulit Pisang Kepok/Selulosa Serbuk Kayu Gergaji. *Cokroaminoto Journal of Chemical Science*, 1(1), 14–19.

Endah, M. M., Satmalawati, M., Paramita, B. L., & Nino, J. (2024). AGRITEKNO :

Jurnal Teknologi Pertanian Karakteristik Fisikokimia dan Sifat Fungsional Pati Alami Ubi Kayu Hasil Ekstraksi Secara Sederhana Physicochemical Characteristics and Functional Properties of Native Cassava Starch Obtained Through Simple Extractio. *AGRITEKNO: Jurnal Teknologi Pertanian*, 13(1), 55–64.

Faisal, M., Žmirić, M., Kim, N. Q. N., Bruun, S., Mariniello, L., Famiglietti, M., Bordallo, H. N., Kirkensgaard, J. J. K., Jørgensen, B., Ulvskov, P., Hebelstrup, K. H., & Blennow, A. (2023). A Comparison of Cellulose Nanocrystals and Nanofibers as Reinforcements to Amylose-Based Composite Bioplastics. *Coatings*, 13(9). <https://doi.org/10.3390/coatings13091573>

Faruk, O., Bledzki, A. K., Fink, H., & Sain, M. (2012). Progress in Polymer Science Biocomposites reinforced with natural fibers : 2000 – 2010. *Progress in Polymer Science*, 37(11), 1552–1596. <https://doi.org/10.1016/j.progpolymsci.2012.04.003>

Fiqtinovri, S. M. (2020a). Karakteristik Kimia dan Amilografi MOCAF (Modified Cassava Flour) Singkong Gajah (*Manihot Utilissima*). *Jurnal Agroindustri Halal*, 6(1), 49–56.

Fiqtinovri, S. M. (2020b). Karakteristik Kimia dan Amilograf (Modified Cassava Flour) Singkong Gajah (*Manihot utilissima*). *Jurnal Agroindustri Halal*, 6(1), 049–056. <https://doi.org/10.30997/jah.v6i1.2162>

Fitria, T. N., Martono, Y., & Riyanto, C. A. (2016). Pengaruh Asetilasi Dan Oksidasi Tepung MOCAF Terhadap Kadar Amilosa Dan Amilopektin. *Prosiding SNST Ke-8 T*, 7–12.

Gadhawe, R. V., Das, A., Mahanwar, P. A., & Gadekar, P. T. (2018). Starch Based Bio-Plastics: The Future of Sustainable Packaging. *Open Journal of Polymer Chemistry*, 08(02), 21–33. <https://doi.org/10.4236/ojpcem.2018.82003>

Gapusan, R. B., & Balela, M. D. L. (2020). Adsorption of anionic methyl orange dye and lead(II) heavy metal ion by polyaniline-kapok fiber nanocomposite. *Materials Chemistry and Physics*, 243(September 2019), 122682. <https://doi.org/10.1016/j.matchemphys.2020.122682>

Guan, Q., Yang, H., Han, Z., Zhou, L., & Zhu, Y. (2020). *Lightweight , tough , and sustainable cellulose nanofiber-derived bulk structural materials with low thermal expansion coefficient*. May, 1–9.

Guzman-Puyol, S., Hierrezuelo, J., Benítez, J. J., Tedeschi, G., Porrás-Vázquez, J. M., Heredia, A., Athanassiou, A., Romero, D., & Heredia-Guerrero, J. A. (2022). Transparent, UV-blocking, and high barrier cellulose-based bioplastics with naringin as active food packaging materials. *International Journal of Biological Macromolecules*, 209(March), 1985–1994. <https://doi.org/10.1016/j.ijbiomac.2022.04.177>

Hamzah, F. H., Sitompul, F. F., Ayu, D. F., & Pramana, A. (2021). Effect of the Glycerol Addition on the Physical Characteristics of Biodegradable Plastic

Made from Oil Palm Empty Fruit Bunch. *Industria: Jurnal Teknologi Dan Manajemen Agroindustri*, 10(3), 239–248.  
<https://doi.org/10.21776/ub.industria.2021.010.03.5>

Hanafie, R., Suwarta, & Alfiana. (2016). Variety and Characteristic of Processed Food Industry Based on Cassava. *Agriculture and Agricultural Science Procedia*, 9, 258–263. <https://doi.org/10.1016/j.aaspro.2016.02.145>

Harni, M., Putri, S. K., Gusmalini, & Handayani, T. D. (2022). Characteristics of the Chemical Physical Properties of Cassava Flour Modification (MOCAF) with the Use of Blondo or Virgin Coconut Oil (VCO) Dregs. *IOP Conference Series: Earth and Environmental Science*, 1059(1). <https://doi.org/10.1088/1755-1315/1059/1/012065>

Hashim, M. Y., Amin, A. M., Marwah, O. M. F., Othman, M. H., Yunus, M. R. M., & Huat, N. C. (2017). The effect of alkali treatment under various conditions on physical properties of kenaf fiber . *Journal of Physics: Conference Series*, 914.

Hasibuan, H. A. (2020). Peluang Limbah Kelapa Sawit untuk Produksi Polihidroksialkanoat sebagai Bioplastik. *Perspektif*, 19(2), 79–94.

Hasmadi, M., Harlina, L., Jau-Shya, L., Mansoor, A. H., Jahurul, M. H. A., & Zainol, M. K. (2021). Extraction and characterisation of Cassava starch cultivated in different locations in Sabah, Malaysia. *Food Research*, 5(3), 44–52. [https://doi.org/10.26656/fr.2017.5\(3\).550](https://doi.org/10.26656/fr.2017.5(3).550)

He, Y., Hassanpour, A., & Bayly, A. E. (2021). Combined effect of particle size and surface cohesiveness on powder spreadability for additive manufacturing. *Powder Technology*, 392, 191–203. <https://doi.org/10.1016/j.powtec.2021.06.046>

Husni, A., & Budhiyanti, S. A. (2022). Effect of Isolation Method on Characterization of Microcrystalline Cellulose from Brown Seaweed *Sargassum vulgare*. *Indonesian Journal of Pharmacy*, 33(1), 42–51. <https://doi.org/10.22146/ijp.3274>

Ilyas, R. A., Sapuan, S. M., Ibrahim, R., Abral, H., Ishak, M. R., Zainudin, E. S., Atikah, M. S. N., Mohd Nurazzi, N., Atiqah, A., Ansari, M. N. M., Syafri, E., Asrofi, M., Sari, N. H., & Jumaidin, R. (2019). Effect of sugar palm nanofibrillated cellulose concentrations on morphological, mechanical and physical properties of biodegradable films based on agro-waste sugar palm (*Arenga pinnata*(Wurmb.) Merr) starch. *Journal of Materials Research and Technology*, 8(5), 4819–4830. <https://doi.org/10.1016/j.jmrt.2019.08.028>

Jarvis, M. C. (2018). Structure of native cellulose microfibrils, the starting point for nanocellulose manufacture. *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*, 376(2112). <https://doi.org/10.1098/rsta.2017.0045>

Jayarathna, S., Andersson, M., & Andersson, R. (2022). Recent Advances in

Starch-Based Blends and Composites for Bioplastics Applications. *Polymers*, 14(21), 1–24. <https://doi.org/10.3390/polym14214557>

- Jayaweera, C. D., Karunaratne, D. W. T. S., Bandara, S. T. S., & Walpalage, S. (2017). Investigation of the Effectiveness of Nanocellulose Extracted from Sri Lankan Kapok , as a Filler in Polypropylene Polymer Matrix. *Moratuwa Engineering Research Conference (MERCon) Investigation*, 1–6.
- Jethoo, A. S. (2019). Effect of fiber reinforcement on tensile strength and flexibility of corn starch-based bioplastic. *IOP Conference Series: Materials Science and Engineering*, 652(1), 6–11. <https://doi.org/10.1088/1757-899X/652/1/012035>
- Kamaruddin, Z. H., Jumaidin, R., Ilyas, R. A., Selamat, M. Z., Alamjuri, R. H., & Md Yusof, F. A. (2022). Influence of Alkali Treatment on the Mechanical, Thermal, Water Absorption, and Biodegradation Properties of Cymbopogon citratus Fiber-Reinforced, Thermoplastic Cassava Starch–Palm Wax Composites. *Polymers*, 14(14). <https://doi.org/10.3390/polym14142769>
- Kartikasari, S. N., Sari, P., & Subagio, A. (2016). Karakterisasi sifat kimia, profil amilografi (RVA) dan morfologi granula (SEM) pati singkong termodifikasi secara biologi. *Jurnal Agroteknologi*, 10(01), 12–24.
- Kathomdani, P. D. S., & Sugesty, S. (2018). Pembuatan pulp kraft dari kapuk dan serat daun nanas sebagai bahan baku kertas khusus. *Dinamika Penelitian Industri*, 29(2), 108–118.
- Kavelin, K. G. (2005). *Investigation of natural fiber composites heterogeneity with respect to automotive structures*.
- Khalil, H. P. S. A., Davoudpour, Y., Islam, N., Mustapha, A., Sudesh, K., Dungani, R., & Jawaid, M. (2014). Production and modification of nanofibrillated cellulose using various mechanical processes: A review. *Carbohydrate Polymers*, 99, 649–665. <https://doi.org/10.1016/j.carbpol.2013.08.069>
- Klemm, D., Kramer, F., Moritz, S., Lindström, T., Ankerfors, M., Gray, D., & Dorris, A. (2011). Nanocelluloses: A new family of nature-based materials. *Angewandte Chemie - International Edition*, 50(24), 5438–5466. <https://doi.org/10.1002/anie.201001273>
- Kobayashi, S. (2010). *Biopolymers: Lignin, Proteins, Bioactive Nanocomposites (Google eBook)*. <http://books.google.com/books?id=WJraKIj-6voC&pgis=1>
- Küçükağa, Y., Facchin, A., Torri, C., & Kara, S. (2022). An original Arduino-controlled anaerobic bioreactor packed with biochar as a porous filter media. *MethodsX*, 9, 101615. <https://doi.org/10.1016/j.mex.2021.101615>
- Kumar, R., Sharma, R. K., & Singh, A. P. (2018). Grafted cellulose: a bio-based polymer for durable applications. *Polymer Bulletin*, 75(5), 2213–2242. <https://doi.org/10.1007/s00289-017-2136-6>
- Kumar, S. (2017). *Bioplastics - classification , production and their potential*.



August. <https://doi.org/10.5958/2230-7338.2017.00024.6>

- Kurniawan, S., Amanto, B. S., & Utami, R. (2019). Effect of fermentation duration and Ca (OH) 2 concentration for immersion on the characteristics of modified cassava flour (MOCAF) of bitter cassava variety (Pandemir L-2). *Bioteknologi*, 16(2), 53–61. <https://doi.org/10.13057/biofar/c160203>
- Kusumayanti, H., Handayani, N. A., & Santosa, H. (2015). Swelling power and water solubility of cassava and sweet potatoes flour. *Procedia Environmental Science*, 23, 164–167. <https://doi.org/10.1016/j.proenv.2015.01.025>
- Lalit, R., Mayank, P., & Ankur, K. (2018). Natural fibers and biopolymers characterization: A future potential composite material. *Strojnický Casopis*, 68(1), 33–50. <https://doi.org/10.2478/scjme-2018-0004>
- Li, J., Song, Z., Li, D., Shang, S., & Guo, Y. (2014). Cotton cellulose nanofiber-reinforced high density polyethylene composites prepared with two different pretreatment methods. *Industrial Crops and Products*, 59, 318–328. <https://doi.org/10.1016/j.indcrop.2014.05.033>
- Li, Q., Li, C., Li, E., Gilbert, R. G., & Xu, B. (2020). A molecular explanation of wheat starch physicochemical properties related to noodle eating quality. *Food Hydrocolloids*, 108(April), 106035. <https://doi.org/10.1016/j.foodhyd.2020.106035>
- Lim, C., Yusoff, S., Ng, C. G., Lim, P. E., & Ching, Y. C. (2021). Bioplastic made from seaweed polysaccharides with green production methods. *Journal of Environmental Chemical Engineering*, 9(5). <https://doi.org/10.1016/j.jece.2021.105895>
- Lim, T. T., & Huang, X. (2007). Evaluation of hydrophobicity/oleophilicity of kapok and its performance in oily water filtration: Comparison of raw and solvent-treated fibers. *Industrial Crops and Products*, 26(2), 125–134. <https://doi.org/10.1016/j.indcrop.2007.02.007>
- Liu, Y., Xie, J., Wu, N., Ma, Y., Menon, C., & Tong, J. (2019). Characterization of natural cellulose fiber from corn stalk waste subjected to different surface treatments. *Cellulose*, 26(8), 4707–4719. <https://doi.org/10.1007/s10570-019-02429-6>
- Lopulalan, C. G. C., Mailoa, M., & Pelu, H. (2016). Analisa sifat kimia dan fisik Modified Cassava Flour (MOCAF) (Varietas Lokal Sangkola) asal Desa Waai, Maluku Tengah. *Jurnal Teknologi Pertanian*, 5(1), 7–12. <https://doi.org/10.30598/jagritekno.2016.5.1.7>
- Lusiana, S. W., Putri, D., Nurazizah, I. Z., & Bahruddin. (2019). Bioplastic Properties of Sago-PVA Starch with Glycerol and Sorbitol Plasticizers. *Journal of Physics: Conference Series*, 1351(1). <https://doi.org/10.1088/1742-6596/1351/1/012102>
- M. N. Dabhi, N. J. H. (2021). A Review on Effect of Amylose/Amylopectin, Lipid

and Relative Humidity on Starch Based Biodegradable Films. *International Journal of Current Microbiology and Applied Sciences*, 10(4), 500–531. <https://doi.org/10.20546/ijcmas.2021.1004.051>

Macedo, M. J. P., Silva, G. S., Feitor, M. C., Costa, T. H. C., Ito, E. N., & Melo, J. D. D. (2020). Composites from recycled polyethylene and plasma treated kapok fibers. *Cellulose*, 27(4), 2115–2134. <https://doi.org/10.1007/s10570-019-02946-4>

Mahardika, M., Abral, H., Kasim, A., Arief, S., Hafizulhaq, F., & Asrofi, M. (2019). Properties of cellulose nanofiber/bengkoang starch bionanocomposites: Effect of fiber loading. *Lwt*, 116(August). <https://doi.org/10.1016/j.lwt.2019.108554>

Majid, R. A., Mohamad, Z., Rusman, R., & Zulkornain, A. A. (2018). Development of Tea Waste / Kapok Fiber Composite Paper. *Chemical Engineering Transactions*, 63, 457–462. <https://doi.org/10.3303/CET1863077>

Mani, G. K., Rayappan, J. B. B., & Bisoyi, D. K. (2012). Synthesis and characterization of kapok fibers and its composites. *Journal of Applied Sciences*, 12(16), 1661–1665. <https://doi.org/10.3923/jas.2012.1661.1665>

Mardiyati, Rizkiansyah, R. R., Steven, Basuki, A., & Suratman, R. (2016). Serat Kapuk Sebagai Bahan Baku Pembuatan Mikrokristalin Selulosa. *Jurnal Sains Materi Indonesia*, 17(4), 172–177.

Marichelvam, M. K., Jawaid, M., & Asim, M. (2019). Corn and Rice Starch-Based Bio-Plastics as Alternative Packaging Materials. *Fibers*, 7(32), 1–13. <https://doi.org/10.3390/fib7040032>

Mauroh, D. A., Hasanah, Y. R., & Mulyadi, A. H. (2023). Effect of Starter Concentration and Fermentation Time on the Characteristics of Modified of Cassava Flour ( MOCAF ). *RiCE: Research in Chemical Engineering*, 2(1), 23–28.

Meiwu, S., Hong, X., & Weidong, yu. (2010). The Fine Structure of the Kapok Fiber. *Textile Research Journal*, 80(2), 159–165. <https://doi.org/10.1177/0040517508095594>

Mohammed, L., Ansari, M. N. M., Pua, G., Jawaid, M., & Islam, M. S. (2015). A Review on Natural Fiber Reinforced Polymer Composite and Its Applications. *International Journal of Polymer Science*, 2015, 15.

Muhammad, A., Roslan, A., Sanusi, S. N. A., Shahimi, M. Q., & Nazari, N. Z. (2019a). Mechanical properties of bioplastic form cellulose nanocrystal ( CNC ) mangosteen peel using glycerol as plasticizer. *Journal of Physics: Conference Series*. <https://doi.org/10.1088/1742-6596/1349/1/012099>

Muhammad, A., Roslan, A., Sanusi, S. N. A., Shahimi, M. Q., & Nazari, N. Z. (2019b). Mechanical properties of bioplastic form cellulose nanocrystal (CNC) mangosteen peel using glycerol as plasticizer. *Journal of Physics: Conference Series*, 1349(1). <https://doi.org/10.1088/1742-6596/1349/1/012099>

- Mwaikambo, L. Y., Martuscelli, E., & Avella, M. (2000). Kapok/cotton fabric-polypropylene composites. *Polymer Testing*, 19(8), 905–918. [https://doi.org/10.1016/S0142-9418\(99\)00061-6](https://doi.org/10.1016/S0142-9418(99)00061-6)
- Nainggolan, E. A., Yudianto, D., & Sayekti, A. (2019). Effect of fermentation on physicochemical properties of fermented cassava flour. *Journal of Physics: Conference Series*, 1367(1). <https://doi.org/10.1088/1742-6596/1367/1/012083>
- Nakagaito, A. N., Ikenaga, K., & Takagi, H. (2015). Cellulose nanofiber extraction from grass by a modified kitchen blender. 29, 1–5. <https://doi.org/10.1142/S0217984915400394>
- Nandiyanto, A. B. D., Fiandini, M., Ragadhita, R., Sukmafitri, A., Salam, H., & Triawan, F. (2020). Mechanical and biodegradation properties of cornstarch-based bioplastic material. *Materials Physics and Mechanics*, 44(3), 380–391. [https://doi.org/10.18720/MPM.4432020\\_9](https://doi.org/10.18720/MPM.4432020_9)
- Nechyporchuk, O., Belgacem, M. N., & Bras, J. (2016). Production of cellulose nanofibrils: A review of recent advances. *Industrial Crops and Products*, 93, 2–25. <https://doi.org/10.1016/j.indcrop.2016.02.016>
- Neyt, N. C., & Riley, D. L. (2021). Application of reactor engineering concepts in continuous flow chemistry: A review. *Reaction Chemistry and Engineering*, 6(8), 1295–1326. <https://doi.org/10.1039/d1re00004g>
- Ng, H. M., Sin, L. T., Tee, T. T., Bee, S. T., Hui, D., Low, C. Y., & Rahmat, A. R. (2015). Extraction of cellulose nanocrystals from plant sources for application as reinforcing agent in polymers. *Composites Part B: Engineering*, 75, 176–200. <https://doi.org/10.1016/j.compositesb.2015.01.008>
- Ngwabebhoh, F. A., Erdem, A., & Yildiz, U. (2018). A design optimization study on synthesized nanocrystalline cellulose, evaluation and surface modification as a potential biomaterial for prospective biomedical applications. *International Journal of Biological Macromolecules*, 114(2017), 536–546. <https://doi.org/10.1016/j.ijbiomac.2018.03.155>
- Novelina, Aisman, & Ramadhani, A. S. (2023). The Comparative Effect of MOCAF (Modified Cassava Flour) and Corn ( *Zea mays* L.) Flour on the Characteristics of Chiffon Cake. *IOP Conference Series: Earth and Environmental Science*, 1182(1). <https://doi.org/10.1088/1755-1315/1182/1/012052>
- OECD. (2022). Global Plastics Outlook: Economic Drivers, Environmental Impacts and Policy Options. In *OECD Publishing*. <https://doi.org/10.1787/de747aef-en>
- Olagundoye, A. A., & Morayo, A. O. (2022). Characterization of Potato Peel Starch-based Bioplastic Reinforced with Banana Pseudostem Cellulose for Packaging Applications. *International Journal of Innovative Science and Research Technology*, 7(4). [www.ijisrt.com](http://www.ijisrt.com)

- Oluwasina, O. O., Olaleye, F. K., Olusegun, S. J., Oluwasina, O. O., & Mohallem, N. D. S. (2019). Influence of oxidized starch on physicochemical, thermal properties, and atomic force micrographs of cassava starch bioplastic film. *International Journal of Biological Macromolecules*, *135*, 282–293. <https://doi.org/10.1016/j.ijbiomac.2019.05.150>
- Onteniente, J., Abbès, B., Haïdar, L., & France, R. (2000). Fully Biodegradable Lubricated Thermoplastic Wheat Starch: Mechanical and Rheological Properties of an Injection Grade. *Starch/Stärke*, *52*, 112–117.
- Panas, D. P., Lukmandaru, G., Susanti, D., Widyorini, R., Kehutanan, F., Gadjah, U., Ugm, M., Agro, J., & Pos, K. (2018). Chemical Properties of Modified Mahogany Wood by Heat Treatment. *Jurnal Penelitian Kehutanan Wallacea* . *7*, 37–46.
- Pandi, N., Sonawane, S. H., & Anand Kishore, K. (2021). Synthesis of cellulose nanocrystals (CNCs) from cotton using ultrasound-assisted acid hydrolysis. *Ultrasonics Sonochemistry*, *70*(May 2020), 105353. <https://doi.org/10.1016/j.ultsonch.2020.105353>
- Park, S. Y., Yook, S., Goo, S., Im, W., & Youn, H. J. (2020). Preparation of transparent and thick CNF/epoxy composites by controlling the properties of cellulose nanofibrils. *Nanomaterials*, *10*(4), 1–13. <https://doi.org/10.3390/nano10040625>
- Pati, K., Rizkiansyah, R. R., & Basuki, A. (2015). Sifat Mekanis Biokomposit yang Berbahan Dasar Mikrokrystalin Selulosa Serat Sifat Mekanis Biokomposit yang berbahan Dasar Mikrokrystalin Selulosa Serat Kapuk / Pati. *Majalah Polimer Indonesia*, *18*(November 2019), 67–75.
- Peças, P., Carvalho, H., Salman, H., & Leite, M. (2018). Natural Fibre Composites and Their Applications: A Review. *Journal of Composites Science*, *2*(4), 66. <https://doi.org/10.3390/jcs2040066>
- Perez-Puyana, V., Cuartero, P., Jiménez-Rosado, M., Martínez, I., & Romero, A. (2022). Physical crosslinking of pea protein-based bioplastics: Effect of heat and UV treatments. *Food Packaging and Shelf Life*, *32*(March). <https://doi.org/10.1016/j.fpsl.2022.100836>
- Phanthong, P., Reubroycharoen, P., Hao, X., & Xu, G. (2018). Nanocellulose : Extraction and application. *Carbon Resources Conversion*, *1*(1), 32–43. <https://doi.org/10.1016/j.crcon.2018.05.004>
- Prachayawarakorn, J., Chaiwatyothin, S., Mueangta, S., & Hanchana, A. (2013). Effect of jute and kapok fibers on properties of thermoplastic cassava starch composites. *Materials and Design*, *47*, 309–315. <https://doi.org/10.1016/j.matdes.2012.12.012>
- Puglia, D., Dominici, F., Kenny, J. M., Santulli, C., Governatori, C., Tosti, G., & Benincasa, P. (2016). Tensile Behavior of Thermoplastic Films from Wheat Flours as Function of Raw Material Baking Properties. *Journal of Polymers*

*and the Environment*, 24(1), 37–47. <https://doi.org/10.1007/s10924-015-0745-4>

- Pulungan, M. H., Kapita, R. A. D., & Dewi, I. A. (2020). Optimisation on the production of biodegradable plastic from starch and cassava peel flour using response surface methodology. *IOP Conference Series: Earth and Environmental Science*, 475(1). <https://doi.org/10.1088/1755-1315/475/1/012019>
- Purnawati, R., Febrianto, F., Wistara, I. N. J., Nikmatin, S., Hidayat, W., Lee, S. H., & Kim, N. H. (2018). Physical and chemical properties of kapok (*Ceiba pentandra*) and balsa (*Ochroma pyramidale*) fibers. *Journal of the Korean Wood Science and Technology*, 46(4), 393–401. <https://doi.org/10.5658/WOOD.2018.46.4.393>
- Putri, N. A., Herlina, H., & Subagio, A. (2018). Karakteristik MOCAF (modified cassava flour) berdasarkan metode penggilingan dan lama fermentasi. *Jurnal Agroteknologi*, 12(01), 79–89.
- Quek, C. S., Ngadi, N., & Ahmad Zaini, M. A. (2020). The oil-absorbing properties of kapok fibre – a commentary. *Journal of Taibah University for Science*, 14(1), 507–512. <https://doi.org/10.1080/16583655.2020.1747767>
- Rahmawati, M., Endang S, L., & Arifin, Z. (2024). Pengaruh Aplikasi Pupuk Kompos dan Biochar terhadap Populasi Bakteri di Rizosfer dan Pertumbuhan Tanaman Padi Gogo (*Oryza Sativa* L.). *Journal of Soil Quality and Management*, 3(1), 43–54. <https://doi.org/10.29303/jsqm.v3i1.167>
- Randhawa, A., Dutta, S. D., Ganguly, K., Patil, T. V., Patel, D. K., & Lim, K. T. (2022). A Review of Properties of Nanocellulose, Its Synthesis, and Potential in Biomedical Applications. *Applied Sciences (Switzerland)*, 12(14). <https://doi.org/10.3390/app12147090>
- Ratnawati, L., Ekafitri, R., & Desnilasari, D. (2019). Karakterisasi tepung komposit berbasis MOCAF dan kacang-kacangan sebagai bahan baku biskuit MP-ASI. *Biopropal Industri*, 10(2), 65–81.
- Rengasamy, R. S., Das, D., & Praba Karan, C. (2011). Study of oil sorption behavior of filled and structured fiber assemblies made from polypropylene, kapok and milkweed fibers. *Journal of Hazardous Materials*, 186(1), 526–532. <https://doi.org/10.1016/j.jhazmat.2010.11.031>
- Rezeikinta, F. A., Kasim, A., Syafri, E., Chaniago, I., & Ridwan, F. (2023). Reducing Water Absorption and Increasing the Density of Kapok (*Ceiba pentandra*, L.) Fibers from Kapok Production Center in Indonesia. *International Journal of Design & Nature and Ecodynamics*, 18(1), 195–200. <https://doi.org/10.18280/ijdne.180124>
- Rezekinta, F. A., Kasim, A., Syafri, E., Chaniago, I., & Ridwan, F. (2023). E-Novel Produksi Film Pati: Karakterisasi Produksi Film Pati dari Lima Jenis Pati Berbeda. *Jurnal Teknologi Pertanian Andalas*, 27.

- Riley, C. K., Wheatley, A. O., & Asemota, H. N. (2006). Isolation and characterization of starches from eight *Dioscorea alata* cultivars grown in Jamaica. *African Journal of Biotechnology*, 5(17), 1528–1536. <https://doi.org/10.4314/ajb.v5i17.43151>
- Rivadeneira-velasco, K. E., Utreras-silva, C. A., Antonio, D., Sommer-m, A. E., Tafur, J. P., & Michell, R. M. (2021). *Green Nanocomposites Based on Thermoplastic Starch : A Review*.
- Rostini, I., Intan Pratama, R., & Rochima, E. (2019). Characterization of Bioplastic Packaging from Tapioca Flour Modified with the Addition of Chitosan and Fish Bone Gelatin. *World Scientific News* , 135(September), 85–98. [www.worldscientificnews.com](http://www.worldscientificnews.com)
- Saharan, B., Ankita, & Sharma, D. (2015). Bioplastics-For Sustainable Development : A Review. *International Journal of Microbial Resource Technology*, 1(1), 11–23.
- Saito, T., Nishiyama, Y., Putaux, J., Vignon, M., & Isogai, A. (2006). Homogeneous Suspensions of Individualized Microfibrils from.pdf. *Biomacromolecules*, 7(6), 3–7.
- Sangalang, R. H. (2021). Kapok Fiber-Structure, Characteristics and Applications : (A Review). *Oriental Journal of Chemistry*, 37(No. 3), 513–523.
- Sarasini, F., Tirillò, J., Puglia, D., Dominici, F., Santulli, C., Boimau, K., Valente, T., & Torre, L. (2017). Biodegradable polycaprolactone-based composites reinforced with ramie and borassus fibres. *Composite Structures*, 167, 20–29. <https://doi.org/10.1016/j.compstruct.2017.01.071>
- Sarifudin, S. A., Tarkono, T., & Sugiyanto, S. (2013). Analisa Perilaku Mekanik Kompositserat Kapuk Randu Menggunakanmatrik Polyester. *Jurnal Ilmiah Teknik Mesin FEMA*, 1(2), 172–177.
- Sartika, D., Syamsu, K., Warsiki, E., Fahma, F., & Arnata, I. W. (2021). Nanocrystalline Cellulose from Kapok Fiber (*Ceiba pentandra*) and its Reinforcement Effect on Alginate Hydrogel Bead. *Starch - Stärke*, 2100033, 1–12. <https://doi.org/10.1002/star.202100033>
- Schutyser, W., Renders, T., Van Den Bosch, S., Koelewijn, S. F., Beckham, G. T., & Sels, B. F. (2018). Chemicals from lignin: An interplay of lignocellulose fractionation, depolymerisation, and upgrading. *Chemical Society Reviews*, 47(3), 852–908. <https://doi.org/10.1039/c7cs00566k>
- Setyawati, Y. D., Ahsan, S. F., Ong, L. K., Soetaredjo, F. E., Ismadji, S., & Ju, Y. H. (2016). Production of glutinous rice flour from broken rice via ultrasonic assisted extraction of amylose. *Food Chemistry*, 203, 158–164. <https://doi.org/10.1016/j.foodchem.2016.02.068>
- Sfiligoj, M., Hribernik, S., Stana, K., & Kree, T. (2013). Plant Fibres for Textile and Technical Applications. *Advances in Agrophysical Research*.

<https://doi.org/10.5772/52372>

- Shah, M., Rajhans, S., Pandya, H. A., & Mankad, A. U. (2021). Bioplastic for future: A review then and now. *World Journal of Advanced Research and Reviews*, 9(2), 056–067. <https://doi.org/10.30574/wjarr.2021.9.2.0054>
- Shah, P., Prajapati, R., & Singh, P. (2017). Enrichment of Mechanical Properties of Biodegradable Composites Containing Waste Cellulose Fiber and Thermoplastic Starch. *European Journal of Advances in Engineering and Technology*, 4(4), 282–286.
- Shams, M. I., Ifuku, S., Nogi, M., Oku, T., & Yano, H. (2011). Fabrication of optically transparent chitin nanocomposites. *Applied Physics A: Materials Science and Processing*, 102(2), 325–331. <https://doi.org/10.1007/s00339-010-5969-5>
- Shanmathy, M., Mohanta, M., & Thirugnanam, A. (2021). Development of biodegradable bioplastic films from Taro starch reinforced with bentonite. *Carbohydrate Polymer Technologies and Applications*, 2(November), 100173. <https://doi.org/10.1016/j.carpta.2021.100173>
- Shazleen, S. S., Yasim-Anuar, T. A. T., Ibrahim, N. A., Hassan, M. A., & Ariffin, H. (2021). Functionality of Cellulose Nanofiber as Bio-Based Nucleating Agent and Nano-Reinforcement Material to Enhance Crystallization and Mechanical Properties of Polylactic Acid Nanocomposite. *Polymers*, 13, 1–19.
- Shi, J., Lu, Y., Zhang, Y., Cai, L., & Shi, S. Q. (2018). Effect of thermal treatment with water, H<sub>2</sub>SO<sub>4</sub> and NaOH aqueous solution on color, cell wall and chemical structure of poplar wood. *Scientific Reports*, 8(1), 1–9. <https://doi.org/10.1038/s41598-018-36086-9>
- Shinde, D. R., Quraishi, I. S., & Pawar, R. A. (2021). An Efficient Visible Light Driven Photocatalytic Removal of Dyes from the Dye Effluent using Metal Halide Lamp Based Slurry Reactor. *ES Energy and Environment*, 14, 54–62. <https://doi.org/10.30919/eseec8c504>
- Siakeng, R., Jawaid, M., Ariffin, H., Sapuan, S. M., Asim, M., & Saba, N. (2019). Natural fiber reinforced polylactic acid composites: A review. *Polymer Composites*, 40(2), 446–463. <https://doi.org/10.1002/pc.24747>
- Siró, I., & Plackett, D. (2010). Microfibrillated cellulose and new nanocomposite materials: A review. *Cellulose*, 17(3), 459–494. <https://doi.org/10.1007/s10570-010-9405-y>
- Slezak, R., Krzystek, L., Puchalski, M., Krucińska, I., & Sitarski, A. (2023). Degradation of bio-based film plastics in soil under natural conditions. *Science of the Total Environment*, 866(September 2022). <https://doi.org/10.1016/j.scitotenv.2023.161401>
- Sofla, M. R. K., Batchelor, W., Kosinkova, J., Pepper, R., Brown, R., & Rainey, T. (2019). Cellulose nanofibres from bagasse using a high speed blender and

acetylation as a pretreatment. *Cellulose*, 26(8), 4799–4814.  
<https://doi.org/10.1007/s10570-019-02441-w>

- Sondari, D., Amanda, P., Suryaningrum, R., Burhani, D., Pramasari, D. A., Septevani, A. A., Restu, W. K., Agustian, E., Irawan, Y., & Oktaviani, M. (2021). Effect of different amount of cross-linker and catalyst on modified cassava towards its chemical characteristic. *IOP Conference Series: Earth and Environmental Science*, 759(1). <https://doi.org/10.1088/1755-1315/759/1/012007>
- Sreenivas Rao, K. V., Venkatesha Gupta, N. S., Akash, & Sanjeevamurthy. (2016). Mechanical properties of natural fibers reinforced hybrid composites. *ARPN Journal of Engineering and Applied Sciences*, 11(1), 253–258.
- Sudhakar, M. P., Magesh Peter, D., & Dharani, G. (2021). Studies on the development and characterization of bioplastic film from the red seaweed (*Kappaphycus alvarezii*). *Environmental Science and Pollution Research*, 28(26), 33899–33913. <https://doi.org/10.1007/s11356-020-10010-z>
- Sulistiadi, S., & Lestari, H. A. (2022). Pengaruh Ukuran Partikel MOCAF pada Karakteristik Fisik Tepung. *Jurnal Ilmiah Rekayasa Pertanian Dan Biosistem*, 10(2), 161–170. <https://doi.org/10.29303/jrpb.v10i2.320>
- Sumada, K., Erka Tamara, P., & Alqani, F. (2011). Kajian Proses Isolasi A - Selulosa Dari Limbah Batang Tanaman *Manihot Esculenta Crantz* yang Efisien. *Jurnal Teknik Kimia*, 5(2), 434–438.
- Sumirat, R., Rosalinda, S., Mardawati, E., Nurliasari, D., & Kastaman, R. (2023). Tahapan Proses Produksi Dan Karakterisasi Bioplastik Dari Limbah Tongkol Jagung. *Jurnal Penelitian Pertanian Terapan*, 23(4), 479–488. <https://doi.org/10.25181/jppt.v23i4.2691>
- Summerscales, J., Dissanayake, N. P. J., Virk, A. S., & Hall, W. (2010). Composites : Part A A review of bast fibres and their composites . Part 1 – Fibres as reinforcements. *Composites Part A*, 41(10), 1329–1335. <https://doi.org/10.1016/j.compositesa.2010.06.001>
- Supadmi, S., Murdiati, A., & Rahayu, E. S. (2016). Komposisi Gizi, Indeks Warna Putih , dan Profil Granula Pati Pada Modified Cassava Flour ( MOCAF) yang Difortifikasi Dengan Iodium. *Jurnal Media Gizi Mikro Indonesia*, 8(1), 65–78.
- Suryanto, H., Muhajir, M., Susilo, B. D., Rohmat, Y., & Pradana, A. (2021). Nanofibrillation of Bacterial Cellulose Using High-Pressure Homogenization and Its Films Characteristics. *Journal of Renewable Materials*, April. <https://doi.org/10.32604/jrm.2021.015312>
- Susanti, Jasruddin, & Subaer. (2015). Sintesis Komposit Bioplastik Berbahan Dasar Tepung Tapioka Dengan Penguat Serat Bambu. *Jurnal Sains Dan Pendidikan Fisika*, 179–184.
- Syafri, E., Kasim, A., Abral, H., Tj, G., Sanjay, M. R., & Sari, N. H. (2018).



Synthesis and characterization of cellulose nanofibers (CNF) ramie reinforced cassava starch hybrid composites. *International Journal of Biological Macromolecules*. <https://doi.org/10.1016/j.ijbiomac.2018.08.134>

Syamani, F. A., Kusumaningrum, W. B., Akbar, F., Ismadi, Widyaningrum, B. A., & Pramasari, D. A. (2020). Characteristics of bioplastic made from modified cassava starch with addition of polyvinyl alcohol. *IOP Conference Series: Earth and Environmental Science*, 591(1). <https://doi.org/10.1088/1755-1315/591/1/012016>

Tan, S. X., Andriyana, A., Ong, H. C., Lim, S., Pang, Y. L., & Ngoh, G. C. (2022). A Comprehensive Review on the Emerging Roles of Nanofillers Fabrication. *Polymers*, 14(664), 1–27.

Teodoro, K. B. R., Teixeira, E. D. M., Lotti, C., & Corre, A. C. (2010). *Thermoplastic Corn Starch Reinforced with Cotton Cellulose Nanofibers*. <https://doi.org/10.1002/app>

Thomas, P., Duolikun, T., Rumjit, N. P., Moosavi, S., Lai, C. W., Bin Johan, M. R., & Fen, L. B. (2020). Comprehensive review on nanocellulose: Recent developments, challenges and future prospects. *Journal of the Mechanical Behavior of Biomedical Materials*, 110(May), 103884. <https://doi.org/10.1016/j.jmbbm.2020.103884>

Thyavihalli Girijappa, Y. G., Mavinkere Rangappa, S., Parameswaranpillai, J., & Siengchin, S. (2019). Natural Fibers as Sustainable and Renewable Resource for Development of Eco-Friendly Composites: A Comprehensive Review. *Frontiers in Materials*, 6(September), 1–14. <https://doi.org/10.3389/fmats.2019.00226>

Tiku Sanda, L., Lisnawati, A., Putra Pratama, A., & Yamin, M. (2023). Studi Pembuatan Tepung MOCAF (Modified Cassava Flour) dengan Lama Fermentasi yang Berbeda. *Buletin LOUPE*, 19(02), 214–219.

Timbuleng, N., Naharia, O., Gedoan, S. P., Mokusuli, Y. S., Rahardiyan, D., & Moko, E. M. (2024). Biodegradasi Bioplastik Berbahan Dasar Pati Daluga (*Cyrtosperma merkusii*) dengan Cellulose Nano Crystal sebagai Agen Reinforcement sebagai Dasar Pengembangan Food Packaging. *JST (Jurnal Sains Dan Teknologi)*, 12(3), 633–645. <https://doi.org/10.23887/jstundiksha.v12i3.67917>

Triyono, B., Handoyo, S., & Laili, N. (2019). Analysis for Development of MOCAF-Based Functional Food Industry in Indonesia. *Journal of Socioeconomics and Development*, 2(2), 73. <https://doi.org/10.31328/jsed.v2i2.1068>

Tyagi, V., & Bhattacharya, B. (2019). Role of plasticizers in bioplastics. *MOJ Food Processing & Technology*, 7(4), 128–130. <https://doi.org/10.15406/mojfpt.2019.07.00231>

Tye, Y. Y., Lee, K. T., Wan Abdullah, W. N., & Leh, C. P. (2012). Potential of

*Ceiba pentandra* (L.) Gaertn. (kapok fiber) as a resource for second generation bioethanol: Effect of various simple pretreatment methods on sugar production. *Bioresource Technology*, 116, 536–539. <https://doi.org/10.1016/j.biortech.2012.04.025>

Uetani, K., & Yano, H. (2011). Nanofibrillation of Wood Pulp Using a High-Speed Blender. *Biomacromolecules*, 12(2), 348–353.

Unayah, A., Estuti, W., Kunaepah, U., Studies, N., Tasikmalaya, P. K., & Barat, J. (2020). Use of Local Food Ingredients MOCAF (Modified Cassava Flour) and Rebon (Planktonic Shrimp) in Cookies as an Alternative Supplementary Food for Children. *International Journal of Innovation, Creativity and Change*, 1035–1050.

Vasu, S., Abu Bakar, A. H., Teh, K. C., & Leng Chew, I. M. (2021). Extraction of nanocrystalline cellulose from Kapok fiber as potential water-resistant composite. *IOP Conference Series: Earth and Environmental Science*, 765(1). <https://doi.org/10.1088/1755-1315/765/1/012090>

Veerakumar, A., & Selvakumar, N. (2012). A preliminary investigation on kapok/polypropylene nonwoven composite for sound absorption. *Indian Journal of Fibre and Textile Research*, 37(4), 385–388.

Vitrone, F., Ramos, D., Vitagliano, V., Ferrando, F., & Salvadó, J. (2022). All-lignocellulosic fiberboards from giant reed (*Arundo donax* L.): Effect of steam explosion pre-treatment on physical and mechanical properties. *Construction and Building Materials*, 319(December 2021). <https://doi.org/10.1016/j.conbuildmat.2021.126064>

Wahjuningsih, S. B., & Susanti, S. (2018). Chemical, physical, and sensory characteristics of analog rice developed from the MOCAF, arrowroot, and red bean flour. *IOP Conf. Series: Earth and Environmental Science*, 102.

Wahono, S., Irwan, A., Syafri, E., & Asrofi, M. (2018). Preparation and characterization of Ramie Cellulose Nanofibers/CaCO<sub>3</sub> Unsaturated Polyester Resin composites. *ARNP Journal of Engineering and Applied Sciences*, 13(2), 746–751.

Wahyudi, A., Prayitno, T. A., Widyorini, R., & Sutapa, J. P. G. (2019). Pengaruh penambahan serat kayu pinus dan bambu petung terhadap kualitas papan serat kerapatan sedang kayu mahang dengan perekat asam malat. *Jurnal Penelitian Hasil Hutan*, 37(2), 81–92.

Wahyuni, N., & Ab-Latif, Z. (2020). MOCAF Flour As an Alternative Ingredient: a Study on Batik-Patterned Cookies. *Journal of Technology and Operations Management*, 15(1), 40–49. <https://doi.org/10.32890/jtom2020.15.1.4>

Wang, H., Cao, L., Yuan, H., Li, Y., Wen, R., & Xu, G. (2023). Development and characterization of kapok/waste silk nonwoven as a multifunctional bio-based material for textile applications. *Journal of Industrial Textiles*, 53, 1–17. <https://doi.org/10.1177/15280837231198014>

- Wang, L., Xiang, Z. Q., Bai, Y. L., & Long, J. J. (2013). A plasma aided process for grey cotton fabric pretreatment. *Journal of Cleaner Production*, *54*, 323–331. <https://doi.org/10.1016/j.jclepro.2013.05.003>
- Wigati, L. P., Wardana, A. A., Tanaka, F., & Tanaka, F. (2022). Edible film of native jicama starch, agarwood Aetoxylon Bouya essential oil and calcium propionate: Processing, mechanical, thermal properties and structure. *International Journal of Biological Macromolecules*, *209*(PA), 597–607. <https://doi.org/10.1016/j.ijbiomac.2022.04.021>
- Xu, J., Sagnelli, D., Faisal, M., Perzon, A., Taresco, V., Mais, M., Giosafatto, C. V. L., Hebelstrup, K. H., Ulvskov, P., Jørgensen, B., Chen, L., Howdle, S. M., & Blennow, A. (2021). Amylose/cellulose nanofiber composites for all-natural, fully biodegradable and flexible bioplastics. *Carbohydrate Polymers*, *253*(June 2020). <https://doi.org/10.1016/j.carbpol.2020.117277>
- Yamada, M., Morimitsu, S., Hosono, E., & Yamada, T. (2020). Preparation of bioplastic using soy protein. *International Journal of Biological Macromolecules*, *149*, 1077–1083. <https://doi.org/10.1016/j.ijbiomac.2020.02.025>
- Yang, J., Ching, Y. C., & Chuah, C. H. (2019). Applications of Lignocellulosic Fibers and Lignin in. *Polymers*, *11*, 1–26.
- Yoon, S. Y., Dong-Jun, K., Yong Joo, S., Sim-Hee, H., & Aggangan, N. S. (2016). *Enhancement of enzymatic hydrolysis of kapok [Ceiba pentandra (L.) Gaertn.] seed fibers with potassium hydroxide pretreatment*. *25*(1), 17–29.
- Zaid, M., Abidin, A. Z., Muhd Julkapli, N., Juahir, H., Azaman, F., Sulaiman, N. H., & Abidin, I. Z. (2015). Fabrication And Properties of Chitosan with Starch For Packaging Application. *Malaysian Journal of Analytical Sciences*, *19*(5), 1032–1042.
- Zhang, C., Cao, Y., Huang, G., Zeng, Q., & Zhu, Y. (2020). Influence of tool rotational speed on local microstructure , mechanical and corrosion behavior of dissimilar AA2024 / 7075 joints fabricated by friction stir welding. *49*(November 2019), 214–226. <https://doi.org/10.1016/j.jmapro.2019.11.031>
- Zhang, S., Sun, G., He, Y., Fu, R., Gu, Y., & Chen, S. (2017). Preparation, Characterization, and Electrochromic Properties of Nanocellulose-Based Polyaniline Nanocomposite Films. *ACS Applied Materials and Interfaces*, *9*(19), 16426–16434. <https://doi.org/10.1021/acsami.7b02794>
- Zhao, H., Kwak, J. H., Conrad Zhang, Z., Brown, H. M., Arey, B. W., & Holladay, J. E. (2007). Studying cellulose fiber structure by SEM, XRD, NMR and acid hydrolysis. *Carbohydrate Polymers*, *68*(2), 235–241. <https://doi.org/10.1016/j.carbpol.2006.12.013>
- Zhao, X., Xiao, H., Wang, Q., Ping, P., & Sun, J. (2013). Study on spontaneous combustion risk of cotton using a micro-calorimeter technique. *Industrial Crops and Products*, *50*, 383–390.

<https://doi.org/10.1016/j.indcrop.2013.07.064>

Zheng, Y., Wang, J., Zhu, Y., & Wang, A. (2015). Research and application of kapok fiber as an absorbing material: A mini review. *Journal of Environmental Sciences*, 27, 21–32. <https://doi.org/10.1016/j.jes.2014.09.026>

Zheng, Y., Wang, W., Huang, D., & Wang, A. (2012). Kapok fiber oriented-polyaniline nanofibers for efficient Cr(VI) removal. *Chemical Engineering Journal*, 191, 154–161. <https://doi.org/10.1016/j.cej.2012.02.088>

Zheng, Y., Zhu, Y., & Wang, A. (2014). Kapok fiber structure-oriented polyallylthiourea: Efficient adsorptive reduction for Au(III) for catalytic application. *Polymer*, 55(20), 5211–5217. <https://doi.org/10.1016/j.polymer.2014.08.040>

Zounggran, Y., Lynda, E., Dobi-brice, K. K., Tchirioua, E., Bakary, C., & Daniel, D. (2020). Influence of natural factors on the biodegradation of simple and composite bioplastics based on cassava starch and corn starch. *Journal of Environmental Chemical Engineering*, 8(5), 104396. <https://doi.org/10.1016/j.jece.2020.104396>

Zubair, M., Ferrari, R., Alagha, O., Mu'azu, N. D., Blaisi, N. I., Ateeq, I. S., & Manzar, M. S. (2020). Microwave foaming of materials: An emerging field. *Polymers*, 12(11), 1–39. <https://doi.org/10.3390/polym12112477>

