

## DAFTAR PUSTAKA

- Alagumalai, V., Rajamanickam, V., Mohamed, H.G., 2025, Optimisation of areca nut husk- derived cellulose nanofibers for enhancing the mechanical properties of epoxy composites using response surface methodology, *Scientific Report*, Hal. 1–13.
- Alfi, N., Amrillah, Z., Hanum, F.F., Rahayu, A., 2015, Studi Efektivitas Metode Ekstraksi Selulosa dari Agricultural Waste, Seminar Nasional Penelitian LPPM UMJ, Universitas Ahmad Dahlan, Indonesia.
- American Society for Testing and Materials D638, 2016, ASTM D638-14, Standard practice for preparation of metallographic specimens, *ASTM International*, Vol. 82, Hal. 1–15, DOI: 10.1520/D0638-14.1.
- Anindya, A.L., 2018, Particle Size Analyser: Beberapa Penggunaan Instrumen Hamburan Cahaya. In Seminar Nasional Instrumentasi, Kontrol dan Otomasi (SNIKO), *Seminar Nasional Instrumentasi, Kontrol dan Otomas*, Hal. 10–11.
- Annisa, H.F., Mahyudin, A., 2025, Pengaruh Fraksi Volume Serat Pinang dan Serat Rami Terhadap Sifat Fisis dan Mekanik Komposit Hibrid Sebagai Bahan Dasar Dashboard Mobil, *Jurnal Fisika Unand*, Vol. 14, Hal. 68–74.
- Ayu, I., Widihati, G., Ayu, I., Astiti, R., Istri, T., Juniari, T., 2025, Sintesis dan Karakterisasi Nanoselulosa dari Ampas Tebu Hitam ( *Saccharum officinarum* L .), *Jurnal Sains dan Teknologi*, Vol. 14, Hal. 297–308, DOI:10.23887/jst-undiksha.v14i2.92363.
- Azhary, T., Kusmono, Wildan, M.W., Herianto, 2022, Mechanical, morphological, and thermal characteristics of epoxy/glass fiber/cellulose nanofiber hybrid composites, *Polymer Testing*, Vol. 110, Hal. 107560, DOI: 10.1016/j.polymertesting.2022.107560.
- Binoj, J.S., Raj, R.E., Sreenivasan, V.S., Thusnavis, G.R., 2016, Morphological , Physical , Mechanical , Chemical and Thermal Characteriza- tion of Sustainable Indian Areca Fruit Husk Fibers ( *Areca Catechu* L .) as Potential Alternate for Hazardous Synthetic Fibers, *Journal of Bionic Engineering*, Vol. 13, Hal. 156–165, DOI: 10.1016/S1672-6529(14)60170-0.
- Burhanuddin, 2015, *Teknologi dan Rekayasa Material Polimer Komposit*, Prodi Teknik Arsitektur UIN Alauddin, Makassar.

- Callister, W. D., & Rethwisch, D.G. (2018). *Material science and engineering An introduction 10th Edition*, Hoboken, New Jersey (NJ) United State of America.
- Dynanty, S.D.P., Mahyudin, A., 2018, Pengaruh Panjang Serat Pinang Terhadap Sifat Mekanik dan Uji Biodegradasi Material Komposit Matriks Epoksi dengan Penambahan Pati Talas, *Jurnal Fisika Unand*, Vol. 7, Hal. 233–239, DOI: 10.25077/jfu.7.3.233-239.2018.
- Edbert, D., Siagian, N., Hakiem, M., Putra, S., 2024, Natural Fiber As An Environmentally Friendly Composite Material, *Civil Engineering Journal*, Vol. 5, Hal 55-60.
- Febriliani, A., Denny, Y.R., Antarnusa, G., 2025, Analisis XRD Nanopartikel  $\text{Fe}_3\text{O}_4$  Dengan Variasi Suhu Sintesis, *Jurnal Fisika dan Terapan*, Vol. 6, Hal. 14–18.
- Fitri, M., Mahzan, S., Anggara, F., 2021, The Mechanical Properties Requirement for Polymer Composite Automotive Parts - A Review, *International Journal of Advanced Technology in Mechanical, Mechatronics and Materials*, Vol. 1, Hal. 125–133, DOI: 10.37869/ijatec.v1i3.38.
- Geng, W., Venditti, R.A., Pawlak, J.J., Chang, H., 2018, com Effect of Delignification on Hemicellulose Extraction from Switchgrass, Poplar, and Pine and Its Effect on Enzymatic Convertibility of Cellulose-rich Residues, Vol. 13, Hal. 4946–4963.
- Gunarti, M.R., Prawoto, A., Fauzi, W.N., Wirawan, W.A., 2024, Mechanical behavior of glass fiber-epoxy composite laminates for ship hull structures, *Mechanical Engineering for Society and Industry*, Vol. 4, Hal. 156–166, DOI: 10.31603/mesi.11589.
- Gundara, G., Ramadhan, A.R., Wagiman, A., 2023, Pengaruh Ukuran Serbuk Sabut Kelapa Bermatrix Polyester Terhadap Uji Bending dan Uji Scanning Electron Microscopy (SEM), *Jurnal Rekayasa Energi Manufaktur*, Vol. 8, Hal. 2528–3723.
- Hanovatias, Y.R., Mahyudin, A., 2023, Karakterisasi Sifat Mekanik dan Biodegradable Komposit Hibrid Polipropilena dengan Pati Singkong Menggunakan Serat Pinang dan Serat Eceng Gondok, *Jurnal Fisika Unand*, Vol. 12, Hal. 459–465, DOI: 10.25077/jfu.12.3.458-464.2023.
- Haryono, M.B., Utami, W.B., 2020, Mekanisme / Model Penguatan Komposit Bermatrik Logam dengan Berpenguat Partikel, *Jurnal Mechanical*, Vol. 11, Hal. 1–5.

- Hidayat, S., Meidinariasty, A., Junaidi, R., Kimia, J.T., Sriwijaya, P.N., 2022, Film Nanokomposit Berbasis Termoplastik Pati Singkong -Polivinil Alkohol Dengan Nanoselulosa Tandan Kosong Kelapa Sawit ( TKKS ) Sebagai Bahan Penguat, *Jurnal Pendidikan dan Teknologi Indonesia*, Vol. 2, Hal. 413–423.
- Indah, A.P., Mahyudin, A., 2022, Pengaruh Komposisi Kitosan Terhadap Sifat Fisis Dan Biodegradasi Film Komposit Nanoserat Pinang Dengan Castor Oil Sebagai Pemlastis, *Jurnal Fisika Unand*, Vol. 11, Hal. 501–507.
- Jamir, M.R.M., Majid, M.S.A., Khasri, A., 2018, 8. *Natural lightweight hybrid composites for aircraft structural applications, Sustainable Composites for Aerospace Applications*, DOI:10.1016/B978-0-08-102131-6-00008-6.
- Ju, X., Bowden, M., Brown, E.E., Zhang, X., 2015, An improved X-ray diffraction method for cellulose crystallinity measurement, *Carbohydrate Polymers*, Vol. 123, Hal. 476–481, DOI: 10.1016/j.carbpol.2014.12.071.
- Khdier, H.M., Alnada, K., Husham, F., Shali, W.M., 2024, Annales de Chimie - Science des Matériaux Interfacial Effects on Mechanical , Thermal and Electrical Properties of Polymer-Based Nanocomposites : *A Review, Annales de Chemie-Science des Materaux*, Vol. 48, Hal. 857–869, DOI:10.18280/acsm.480611.
- Lokantara, P., Rajendra, F., 2024, Pengaruh Penambahan Nanoselulosa Terhadap Kekuatan Bending Komposit Epoxy Berpenguat Serat Sisal, *Prosding Snttm XXII*, Vol. 22, DOI: 10.71452/590758.
- Mahyudin, A., Emriadi, Abral, H., Labanni, A., Muldarisnur, M., Rozi, M.F., Putri, G.E., Arief, S., 2024, Use of Low-Energy Ultrasonication to Enhance the Purity and Morphology of Cellulose Nanofibers Prepared from Areca Nut Shells, *Chemistry Select*, Vol. 9, Hal. 1–7, DOI: 10.1002/slct.202402705.
- Manurung, T., 2023, Sains dan Ilmu Terapan Analisis Perbandingan Kekuatan Bahan Komposit Dengan Variasi Susunan Acak Dan Lurus Memanjang Berbasis Serat Bambu Dan Resin Polyester, *Jurnal Kolaborasi Sains dan Ilmu Terapan*, Vol. 1, Hal. 19–23.
- Mardiyah, U., Nur, S., Jamil, A., Sandra, L., Studi, P., Hasil, T., Ibrahimy, U., Timur, J., 2022, Characterization of Microstructure and Elemental Composition of Pink Perch Head Gelatin (*Nemipterus Bathybius*) Using Scanning Electron Microscopy-Energy Dispersive X-Ray (Sem-Edx), *Journal of Fisheries and Marine Research*, Vol.6, Vol. Vol.6 No.2, Hal. 19–25.

- Melyna, E., Sopian, A.J., 2024, Sintesis Biokomposit Resin Epoksi/ Serat ijuk/ Serat Kelapa dengan Alkalisasi KOH, *Jurnal teknologi*, Vol. 11, DOI:10.31479/jtek.v10i1.168.
- Muhajir, M., Mizar, M.A., Sudjimat, D.A., 2016, Analisis Kekuatan Tarik Bahan Komposit Matriks Resin, Hal. 1–8.
- Najafi, H., Mohammad Khani, B., 2025, Review of glass fiber reinforced of epoxy based composite materials, *Journal of Composites and Compounds*, Vol. 7, Hal. 1–9, DOI: 10.61882/jcc.7.3.2.
- Nasution, H., Wijaya, F., 2020, Optimasi Suhu Hidrolisis dan Konsentrasi Asam Sulfat dalam Pembuatan Nanoselulosa Berbahan Dasar Serat Batang Pisang Kepok ( *musa acuminata* x *balbisiana*), *Jurnal Teknik Kimia USU*, Vol. 09.
- Nijhu, R.S., Khatun, A., Hossen, M.F., 2024, A comprehensive review of particle size analysis techniques, *International Journal of Pharmaceutical Research and Development*, Vol. 6, Hal. 01–05, DOI: 10.33545/26646862.2024.v6.i1a.37.
- Ningtyas, K.R., Muslihudin, M., Sari, I.N., n.d., Sintesis Nanoselulosa dari Limbah Hasil Menggunakan Variasi Konsentrasi Asam, *Jurnal Penelitian Pertanian Terapan*, Vol. 20, Hal. 142–147.
- Paundra, F., Setiawan, A.D., Muhyi, A., Qalbina, F., Mesin, T., Huwi, W., Selatan, K.L., 2022, Analisis Kekuatan Tarik Komposit Hybrid Berpenguat Serat Batang Pisang Kepok dan Serat Pinang, *Journal Mechanical Engineering*, Vol. 11, Hal. 9–13.
- Rahman, A., Mahyudin, A., 2020, Pengaruh Waktu Ultrasonikasi Terhadap Sifat Mekanik Selulosa Serat Pinang, *Jurnal Fisika Unand*, Vol. 9, Hal. 331–337.
- Rahmatulloh, A.G., 2020, Pengaruh Fraksi Volume Komposit Hybrid Dengan Penguat Serat Rami dan Serat Karbon Bermatriks Polyester Terhadap Kekuatan Bending, dan Kekuatan Tarik, *Jurnal Teknik Mesin*, Vol. 8.
- Rajak, D.K., Pagar, D.D., Menezes, P.L., Linul, E., 2019, Fiber-Reinforced Polymer Composites : Manufacturing, Properties, and Applications, *Polimers*, DOI:10.3390/polym11101667.
- Redjeki, A.S., Ramadhan, A.I., Sari, A.M., Fithriyah, N.H., Rahardja, I., Salsabila, M., 2024, Pemanfaatan Limbah Kelapa Sawit menjadi Nanoselulosa dengan Variasi Waktu Ultrasonikasi, *Seminar Nasional Penelitian LPPM UMJ*, Hal. 1–7.

- Rosiqin, M.A., Puspitasari, D., Nataria, A., Ganda, F., 2025, Hasil Proses Ball Milling Dengan Metode (Scanning Electron Microscopy), Vol. 10, Hal. 620–627.
- Sapuan, S.M., Syams, Z.E., Technology, D., 2018, Hybrid Reinforced Thermoset Polymer Composite in Energy Absorption Tube Application: A review Accepted Manuscript, DOI: 10.1016/j.dt.2018.04.004.
- Sapuan, S.M., Syam, Z.E., Technology, D., 2018, Hybrid Reinforced Thermoset Polymer Composite in Energy Absorption Tube Application: A review Accepted Manuscript, DOI: 10.1016/j.dt.2018.04.004.
- Souhoka, F.A., Latupeirissa, J., 2018, Sintesis dan Karakterisasi Selulosa Asetat (CA), *Journal Chemistry*, Vol. 5, Hal. 58–62.
- Soumena, R.S., Metekohy, S., Lewakabessy, G., 2025, Penggunaan Serat Buah Pinang Sebagai Bahan Tambah Pada Mutu Beton FC 18 MPA, *Jurnal Penelitian Multidisiplin Bangsa*, Vol. 2, Hal. 876–885.
- Tauvana, A.I., Subekti, M.I., n.d., Pengaruh matrik resin- epoxy terhadap kekuatan dampak dan sifat fisis komposit serat nanas, *Jurnal Polimesin*, Hal. 99–104.
- Tjahjanti, P.H., 2018, *Buku Ajar Teori Dan Aplikasi Material Komposit Dan Polimer*, *Buku Ajar Teori Dan Aplikasi Material Komposit Dan Polimer*, DOI: 10.21070/2019/978-602-5914-27-0.
- Zaharani, R., Manurung, P., Firdaus, I., Asmi, D., Faruq, A., 2024, Extraction of Nanocellulose from Bagasse Using Acid Hydrolysis Method, *Journal of Energy, Material, and Instrumentation Technology*, Vol. 5, DOI: 10.23960/jemit.v5i4.192.