

DAFTAR PUSTAKA

- Abbood, I. S. *et al.* (2021) ‘Properties evaluation of fiber reinforced polymers and their constituent materials used in structures - A review’, *Materials Today: Proceedings*, 43, pp. 1003–1008. doi: 10.1016/j.matpr.2020.07.636.
- Abusrea, M. R. *et al.* (2019) ‘Bending strength of CFRP laminated adhesive joints fabricated by vacuum-assisted resin transfer molding’, *Composites Part B: Engineering*, 156(March 2018), pp. 8–16. doi: 10.1016/j.compositesb.2018.08.041.
- Ali, M. I. and Anjaneyulu, J. (2018) ‘Effect of fiber-matrix volume fraction and fiber orientation on the design of composite suspension system’, *IOP Conference Series: Materials Science and Engineering*, 455(1), pp. 0–10. doi: 10.1088/1757-899X/455/1/012104.
- Altin Karataş, M. and Gökkaya, H. (2018) ‘A review on machinability of carbon fiber reinforced polymer (CFRP) and glass fiber reinforced polymer (GFRP) composite materials’, *Defence Technology*, 14(4), pp. 318–326. doi: 10.1016/j.dt.2018.02.001.
- Ambilkar, S. C. *et al.* (2020) ‘In Situ Zirconia: A Superior Reinforcing Filler for High-Performance Nitrile Rubber Composites’, *ACS Omega*, 5(14), pp. 7751–7761. doi: 10.1021/acsomega.9b03495.
- Amiandamhen, S. O., Meincken, M. and Tyhoda, L. (2020) ‘Natural Fibre Modification and Its Influence on Fibre-matrix Interfacial Properties in Biocomposite Materials’, *Fibers and Polymers*, 21(4), pp. 677–689. doi: 10.1007/s12221-020-9362-5.
- Andre, N. G., Ariawan, D. and Mohd Ishak, Z. A. (2017) ‘Mechanical properties and micromechanical analysis of nonwoven kenaf fibre/epoxy composites produced by resin transfer moulding’, *Journal of Composite Materials*, 51(13), pp. 1875–1885. doi: 10.1177/0021998316664197.
- Ary Subagia, I. D. G. *et al.* (2014) ‘Effect of stacking sequence on the flexural properties of hybrid composites reinforced with carbon and basalt fibers’, *Composites Part B: Engineering*, 58, pp. 251–258. doi: 10.1016/j.compositesb.2013.10.027.
- ASTM (2002) ‘D3039/D3039M Standard Test Method for Tensile Properties of Polymer Matrix Composite Materials’, *Annual Book of ASTM Standards*, 15, pp. 1–13. Available at: <http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:Standard+Test+Method+for+Tensile+Properties+of+Polymer+Matrix+Composite+Materials#1>.
- ASTM INTERNATIONAL (2002) ‘Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials. D790’, *Annual Book of ASTM Standards*, pp. 1–12.
- Ayrilmis, N. *et al.* (2011) ‘Properties of flat-pressed wood plastic composites containing fire retardants’, *Journal of Applied Polymer Science*, 122(5), pp. 3201–3210. doi: <https://doi.org/10.1002/app.34346>.
- Barczewski, M. *et al.* (2022) ‘Rotational molding of polylactide (PLA) composites filled with copper slag as a waste filler from metallurgical industry’, *Polymer Testing*, 106(October 2021). doi: 10.1016/j.polymertesting.2021.107449.

- Bekhta, A. *et al.* (2019) ‘Viscosimetric and rheological properties of epoxy resin TGEUBA and their composite (TGEUBA/MDA/TGEMDA+TSP)’, *Results in Engineering*, 4(October). doi: 10.1016/j.rineng.2019.100058.
- Bledzki, A. K. and Gassan, J. (1999) ‘Composites reinforced with cellulose based fibres’, *Progress in Polymer Science*, 24(2), pp. 221–274. doi: [https://doi.org/10.1016/S0079-6700\(98\)00018-5](https://doi.org/10.1016/S0079-6700(98)00018-5).
- Budinski, K. G. and M. K. B. (2005) *Engineering Materials: Properties and Selection, 8th Edition*.
- Chandramohan, N. K. (2020) ‘Variation in compressive and flexural strength of the carbon epoxy composites with the addition of various fillers to the epoxy resin’, *Materials Today: Proceedings*, 21, pp. 643–647. doi: 10.1016/j.matpr.2019.06.731.
- Das, S. C. *et al.* (2021) ‘Effect of stacking sequence on the performance of hybrid natural/synthetic fiber reinforced polymer composite laminates’, *Composite Structures*. Elsevier, 276, p. 114525. doi: 10.1016/J.COMPSTRUCT.2021.114525.
- Dhiman, P. and Sharma, H. (2020) ‘Effect of walnut shell filler on mechanical properties of jute-basalt hybrid epoxy composites’, *Materials Today: Proceedings*, 44, pp. 4537–4541. doi: 10.1016/j.matpr.2020.10.811.
- Dong, Y. *et al.* (2011) ‘Correlation of mechanical performance and morphological structures of epoxy micro/nanoparticulate composites’, *Composites Part A: Applied Science and Manufacturing*, 42(10), pp. 1483–1492. doi: 10.1016/j.compositesa.2011.06.015.
- Frederick T Wallenberger; and Bingham, P. A. (2010) *Fiberglass and Glass Technology*.
- Gara, D. kumar *et al.* (2021) ‘Enhanced mechanical properties of glass fibre epoxy composites by 2D exfoliated graphene oxide filler’, *Ceramics International*, 47(24), pp. 34860–34868. doi: 10.1016/j.ceramint.2021.09.027.
- Gargano, A. *et al.* (2017) ‘Comparative assessment of the explosive blast performance of carbon and glass fibre-polymer composites used in naval ship structures’, *Composite Structures*, 171, pp. 306–316. doi: 10.1016/j.compstruct.2017.03.041.
- Giorcelli, M. *et al.* (2019) ‘Analysis of biochar with different pyrolysis temperatures used as filler in epoxy resin composites’, *Biomass and Bioenergy*, 122(December 2018), pp. 466–471. doi: 10.1016/j.biombioe.2019.01.007.
- Godara, A. *et al.* (2009) ‘Influence of carbon nanotube reinforcement on the processing and the mechanical behaviour of carbon fiber/epoxy composites’, *Carbon*. Elsevier Ltd, 47(12), pp. 2914–2923. doi: 10.1016/j.carbon.2009.06.039.
- Gopinath, A., Senthil Kumar, M. and Elayaperumal, A. (2014) ‘Experimental investigations on mechanical properties of jute fiber reinforced composites with polyester and epoxy resin matrices’, *Procedia Engineering*, 97, pp. 2052–2063. doi: 10.1016/j.proeng.2014.12.448.
- Groover, M. P. (1996) *Fundamentals of Modern Manufacturing*.
- Hestiawan, H., Jamasri and Kusmono (2016) ‘A Preliminary Study: Influence of Alkali Treatment on Physical and Mechanical Properties of Agel Leaf Fiber (*Corypha gebanga*)’, *Applied Mechanics and Materials*, 842(June), pp. 61–66. doi: 10.4028/www.scientific.net/amm.842.61.
- Hestiawan, H., Jamasri and Kusmono (2018) ‘Effect of chemical treatments on tensile

- properties and interfacial shear strength of unsaturated polyester/fan palm fibers', *Journal of Natural Fibers*, 15(5), pp. 762–775. doi: 10.1080/15440478.2017.1364203.
- Hsiao, K.-T. and Heider, D. (2012) '10 - Vacuum assisted resin transfer molding (VARTM) in polymer matrix composites', in Advani, S. G. and Hsiao, Kuang-Ting (eds) *Manufacturing Techniques for Polymer Matrix Composites (PMCs)*. Woodhead Publishing (Woodhead Publishing Series in Composites Science and Engineering), pp. 310–347. doi: <https://doi.org/10.1533/9780857096258.3.310>.
- I, K Aslamjaved ; N, K. B. (2020) 'Effect of Nano Fillers on Mechanical Properties of Luffa Fiber Epoxy Composites', *Journal of Natural Fibers*, 10(03), pp. 177–182. doi: 10.1080/15440478.2020.1779898.
- Ikeda, I. et al. (2009) 'Effect of filler content of flowable composites on resin-cavity interface', *Dental Materials Journal*, 28(6), pp. 679–685. doi: 10.4012/dmj.28.679.
- Islam, Md. Tangimul et al. (2017) 'Effect of Coconut Shell Powder as Filler on the Mechanical Properties of Coir-polyester Composites', *Chemical and Materials Engineering*, 5(4), pp. 75–82. doi: 10.13189/cme.2017.050401.
- Jain, A. and Tripathi, S. K. (2014) 'Fabrication and characterization of energy storing supercapacitor devices using coconut shell based activated charcoal electrode', 183, pp. 54–60.
- Jonathan, Oroh ; Frans P Sappu, R. C. L. (2013) 'ANALISIS SIFAT MEKANIK MATERIAL KOMPOSIT DARI SERAT SABUT KELAPA', *Angewandte Chemie International Edition*, 6(11), 951–952., d, pp. 2013–2015.
- Kabir, M. M. et al. (2012) 'Chemical treatments on plant-based natural fibre reinforced polymer composites: An overview', *Composites Part B: Engineering*, 43(7), pp. 2883–2892. doi: 10.1016/j.compositesb.2012.04.053.
- Kaw, A. K. and Group, F. (2006) *Composite*.
- Khalid, M. Y. et al. (2021) 'Tensile strength evaluation of glass/jute fibers reinforced composites: An experimental and numerical approach', *Results in Engineering*. Elsevier, 10, p. 100232. doi: 10.1016/J.RINENG.2021.100232.
- Kim, J. H. et al. (2021) 'Evaluation of interfacial, dispersion, and thermal properties of carbon Fiber/ABC added epoxy composites manufactured by VARTM and RFI methods', *Composites Part A: Applied Science and Manufacturing*, 151(January). doi: 10.1016/j.compositesa.2021.106660.
- Kitisavetjit, W. et al. (2021) 'Influences of carbon nanotubes and graphite hybrid filler on properties of natural rubber nanocomposites', *Polymer Testing*, 93. doi: 10.1016/j.polymertesting.2020.106981.
- Klasen, Stephan; Scholl, Nathalie; Lahoti, Rahul; Ochmann, S. V. and Sebastian (2016) 'Inequality - worldwide trends and current debates'.
- Lumintang, R., Soenoko, R. and Wahyudi, S. (2011) 'Komposit Hibrid Polyester Berpenguat Serbuk Batang Dan Serat Sabut Kelapa', *Rekayasa Mesin*, 2(2), pp. 145–153.
- MacKinnon, J. (1997) *Protected Areas Systems Review of the Indo-Malayan Realm, Protected Areas Systems Review of the Indo-Malayan Realm*. doi: 10.5962/bhl.title.44928.
- Mallick, P. K. (2007) *Fiber-Reinforced Composites*. doi: <https://doi.org/10.1201/9781420005981>.

- Misri, S. *et al.* (2010) ‘Mechanical properties and fabrication of small boat using woven glass/sugar palm fibres reinforced unsaturated polyester hybrid composite’, *IOP Conference Series: Materials Science and Engineering*, 11, p. 012015. doi: 10.1088/1757-899x/11/1/012015.
- Mohammed, L. *et al.* (2015) ‘A Review on Natural Fiber Reinforced Polymer Composite and Its Applications’, *International Journal of Polymer Science*, 2015. doi: 10.1155/2015/243947.
- Mohd Iqbaldin, M. N. *et al.* (2013) ‘Properties of coconut shell activated carbon’, *Journal of Tropical Forest Science*, 25(4), pp. 497–503.
- Muflikhun, M. A. *et al.* (2020) ‘The evaluation of failure mode behavior of CFRP/Adhesive/SPCC hybrid thin laminates under axial and flexural loading for structural applications’, *Composites Part B: Engineering*, 185(2). doi: 10.1016/j.compositesb.2020.107747.
- Muflikhun, M. A. and Yokozeki, T. (2021) ‘Steel plate cold commercial - carbon fiber reinforced plastics hybrid laminates for automotive applications: curing perspective with thermal residual effect’, *Journal of Materials Research and Technology*, 14, pp. 2700–2714. doi: 10.1016/j.jmrt.2021.07.152.
- Muflikhun, M. A., Yokozeki, T. and Aoki, T. (2019) ‘The strain performance of thin CFRP-SPCC hybrid laminates for automobile structures’, *Composite Structures*, 220(January), pp. 11–18. doi: 10.1016/j.compstruct.2019.03.094.
- Mugahed Amran, Y. H. *et al.* (2018) ‘Properties and applications of FRP in strengthening RC structures: A review’, *Structures*, 16(September), pp. 208–238. doi: 10.1016/j.istruc.2018.09.008.
- Nawras H. Mostafa, Mustafa B. Hunain, A. J. (2019) ‘MECHANICAL PROPERTIES OF THE JUTE FIBERS-ACTIVATED CARBON FILLED REINFORCED POLYESTER COMPOSITES’, *Materials Research Express*, pp. 0–12.
- Ndoen, V., Sina, D. A. and Bunganaen, W. (2015) ‘Pengaruh Penambahan Serat Daun Gewang (Corypha Utan Lam) Terhadap Kuat Lentur Dan Kuat Tarik Belah Beton’, *Jurnal Teknik Sipil*, 4(1), pp. 91–104–104.
- Ngo, T.-D. (2018) ‘Natural Fibers for Sustainable Bio-Composites’, *InTech*, 32(tourism), pp. 137–144. doi: <http://dx.doi.org/10.5772/intechopen.71012>.
- Nugroho, G. and Winarbawa, H. (2018) ‘Investigation of Agel Leaf Fiber/Unsaturated Polyester Composite Cutting Parameters Using CO 2 Laser’, *Proceedings - 2018 4th International Conference on Science and Technology, ICST 2018*, pp. 2–6. doi: 10.1109/ICSTC.2018.8528630.
- Nunna, S. *et al.* (2012) ‘A review on mechanical behavior of natural fiber based hybrid composites’, *Journal of Reinforced Plastics and Composites*, 31(11), pp. 759–769. doi: 10.1177/0731684412444325.
- Pickering, K. L., Efendy, M. G. A. and Le, T. M. (2016) ‘A review of recent developments in natural fibre composites and their mechanical performance’, *Composites Part A: Applied Science and Manufacturing*, 83, pp. 98–112. doi: 10.1016/j.compositesa.2015.08.038.
- Pratama, J. *et al.* (2021) ‘A review on reinforcement methods for polymeric materials

- processed using fused filament fabrication (FFF)', *Polymers*, 13(22), pp. 1–23. doi: 10.3390/polym13224022.
- Putra, F.G., Ngafwan., Riyadi, T. W. . (2016) 'PENGARUH VARIASI BERAT FILLER KARBON AKTIF TEMPURUNG KELAPA TERHADAP STRUKTUR DAN KEKUATAN TARIK KOMPOSIT', *Jurnal Teknik Mesin*, 1(2), pp. 29–38.
- Quaresimin, M., Salviato, M. and Zappalorto, M. (2012) 'Fracture and interlaminar properties of clay-modified epoxies and their glass reinforced laminates', *Engineering Fracture Mechanics*. Elsevier Ltd, 81, pp. 80–93. doi: 10.1016/j.engfracmech.2011.10.004.
- Rajaei, M. et al. (2019) 'A comparative study on effects of natural and synthesised nano-clays on the fire and mechanical properties of epoxy composites', *Composites Part B: Engineering*, 165(November 2018), pp. 65–74. doi: 10.1016/j.compositesb.2018.11.089.
- Rajesh, M. and Pitchaimani, J. (2016) 'Dynamic mechanical analysis and free vibration behavior of intra-ply woven natural fiber hybrid polymer composite', *Journal of Reinforced Plastics and Composites*, 35(3), pp. 228–242. doi: 10.1177/0731684415611973.
- Rajesh, M. and Pitchaimani, J. (2017) 'Mechanical Properties of Natural Fiber Braided Yarn Woven Composite: Comparison with Conventional Yarn Woven Composite', *Journal of Bionic Engineering*, 14(1), pp. 141–150. doi: 10.1016/S1672-6529(16)60385-2.
- Ramesh, A. et al. (2020) 'Influence of fly ash nano filler on the tensile and flexural properties of novel hybrid epoxy nano-composites', *Materials Today: Proceedings*, 27, pp. 1252–1257. doi: 10.1016/j.matpr.2020.02.150.
- Ramesh, M., Palanikumar, K. and Reddy, K. H. (2013) 'Comparative Evaluation on Properties of Hybrid Glass Fiber- Sisal/Jute Reinforced Epoxy Composites', *Procedia Engineering*. No longer published by Elsevier, 51, pp. 745–750. doi: 10.1016/J.PROENG.2013.01.106.
- Rao, Y. S. et al. (2021) 'Effects of solid lubricant fillers on the flexural and shear strength response of carbon fabric-epoxy composites', *Polymer Testing*, 96. doi: 10.1016/j.polymertesting.2021.107085.
- Rochardjo, H. S. B. and Junaidi, T. (2017) 'Manufaktur Rangka Sepeda Balap Dari Bahan Serat Karbon Dengan Metode Wrapped On Foam', *Seminar Nasional Teknik Industri Universitas Gajah Mada*, (November), pp. 60–65.
- Rothon, R. (2017) *Fillers for Polymer Applications*.
- Sabuun, A. et al. (2015) 'Pengaruh Temperatur Pengovenan terhadap Sifat Mekanik Komposit Hibrid Polyester Berpenguat Serat Glass dan Serat Daun Gewang', *Lontar*, 02(01), pp. 69–78.
- Saikumar Reddy, R. V et al. (2021) 'Mechanical Properties Evaluation of Pomegranate Peel Powder Filled Jute Fiber Reinforced Epoxy Composites', *Materials Today: Proceedings*, (xxxx), pp. 2–5. doi: 10.1016/j.matpr.2021.12.043.
- Saiteja, J., Jayakumar, V. and Bharathiraja, G. (2020) 'Evaluation of mechanical properties of jute fiber/carbon nano tube filler reinforced hybrid polymer composite', *Materials Today: Proceedings*, 22, pp. 756–758. doi: 10.1016/j.matpr.2019.10.110.
- Samudera, D. P. et al. (no date) 'Bab 1 Umum, Definisi', pp. 1–7.

- Sari, N. H. *et al.* (2021) ‘Morphology and mechanical properties of coconut shell powder-filled untreated cornhusk fibre-unsaturated polyester composites’, *Polymer*, 222(December 2020). doi: 10.1016/j.polymer.2021.123657.
- Sari, N. H., Dwi Catur, A. and Safii, A. (2019) ‘Komposit Epoksi Diperkuat Serat Corypha Utan: Karakterisasi Morfologi, Kekuatan Tarik Dan kekuatan Lentur’, *Jurnal Energi Dan Manufaktur*, 12(1), p. 27. doi: 10.24843/jem.2019.v12.i01.p05.
- Sathish, S. *et al.* (2018) ‘Experimental Testing on Mechanical Properties of Various Natural Fibers Reinforced Epoxy Hybrid Composites’, *Indian Journal of Science and Technology*, 11(25), pp. 1–6. doi: 10.17485/ijst/2018/v11i25/122231.
- Sathishkumar, T. P. *et al.* (2017) ‘Characterization of sisal/cotton fibre woven mat reinforced polymer hybrid composites’, *Journal of Industrial Textiles*, 47(4), pp. 429–452. doi: 10.1177/1528083716648764.
- Setiawan, O. D., Kusmono, K. and Jamasri, J. (2021) ‘The Effect of Clay Addition on the Mechanical Strength of Unsaturated Polyester Hybrid Composite Reinforced with Woven Agel Leaf Fiber/Glass Fiber’, *Journal of Material Processing and Characterization*, 1(2), pp. 64–70. doi: 10.22146/jmpc.68280.
- Shaaban, A. *et al.* (2015) ‘Preparation of rubber wood sawdust-based activated carbon and its use as a filler of polyurethane matrix composites for microwave absorption’, *Xinxing Tan Cailiao/New Carbon Materials*, 30(2), pp. 167–175. doi: 10.1016/S1872-5805(15)60182-2.
- Shahdan, D., Chen, R. S. and Ahmad, S. (2021) ‘Optimization of graphene nanoplatelets dispersion and nano-filler loading in bio-based polymer nanocomposites based on tensile and thermogravimetry analysis’, *Journal of Materials Research and Technology*, 15, pp. 1284–1299. doi: 10.1016/j.jmrt.2021.08.130.
- Singh, H., Batra, N. K. and Dikshit, I. (2021) ‘Materials Today : Proceedings Development of new hybrid jute / carbon / fishbone reinforced polymer composite’, 38, pp. 29–33.
- Singh, J. I. P., Singh, S. and Dhawan, V. (2018) ‘Effect of Curing Temperature on Mechanical Properties of Natural Fiber Reinforced Polymer Composites’, *Journal of Natural Fibers*, 15(5), pp. 687–696. doi: 10.1080/15440478.2017.1354744.
- Siregar, J. P. *et al.* (2020) ‘Mechanical properties of hybrid sugar palm/ramie fibre reinforced epoxy composites’, *Materials Today: Proceedings*, 46, pp. 1729–1734. doi: 10.1016/j.matpr.2020.07.565.
- Sravanthi, K., Mahesh, V. and Rao, B. N. (2020) ‘Influence of micro and nano carbon fillers on impact behavior of GFRP composite materials’, *Materials Today: Proceedings*, 37(Part 2), pp. 1075–1078. doi: 10.1016/j.matpr.2020.06.298.
- Sugiarto, D. P. (2012) *MENGENAL FLORA TNRAW: PEMANFAATAN AGEL (CORYPHА UTAN)*.
- Sugiman, S., Salman, S. and Maryudi, M. (2020) ‘Effects of volume fraction on water uptake and tensile properties of epoxy filled with inorganic fillers having different reactivity to water’, *Materials Today Communications*, 24(March). doi: 10.1016/j.mtcomm.2020.101360.
- Suresha, B. *et al.* (2019) ‘Effect of Nano Filler Reinforcement on Mechanical Properties of Epoxy Composites’, *IOP Conference Series: Materials Science and Engineering*,



574(1). doi: 10.1088/1757-899X/574/1/012010.

- Uppal, N. *et al.* (2022) ‘Ultra-fine nano-CaCO₃ based-epoxy composites: A high-strength nano-filler engineered via planetary ball milling for advanced structural applications’, 318(February), pp. 8–12.
- Vardhan, D. H., Ramesh, A. and Reddy, B. C. M. (2020) ‘Effect of ceramic fillers on flexural strength of the GFRP composite material’, *Materials Today: Proceedings*, 37(Part 2), pp. 1739–1742. doi: 10.1016/j.matpr.2020.07.356.
- Vasiraja, N., Sathiya Prabhahar, R. S. and Daniel, S. J. (2022) ‘Tensile and flexural characteristic of functionally graded carbon fiber reinforced composites with alumina and yttria stabilized zirconia fillers for bone implant’, *Materials Today: Proceedings*, (xxxx). doi: 10.1016/j.matpr.2022.03.480.
- Vinod Kumar, T., Chandrasekaran, M. and Santhanam, V. (2017) ‘Characteristics analysis of coconut shell husk reinforced polymer composites’, *ARP Journal of Engineering and Applied Sciences*, 12(8), pp. 2401–2406.
- Widiartha, I. G., Sari, N. H. and Sujita, S. (2012) ‘Study Kekuatan Bending Dan Struktur Mikro Komposit Polyethylene Yang Diperkuat Oleh Hybrid Serat Sisal Dan Karung Goni’, *Dinamika Teknik Mesin*, 2(2), pp. 92–99. doi: 10.29303/d.v2i2.99.
- Yudhanto, F., Jamasri and Rochardjo, H. S. B. (2020) ‘Physical and mechanical characterization of polyvinyl alcohol nanocomposite made from cellulose nanofibers’, *Materials Science Forum*, 988 MSF(March), pp. 65–72. doi: 10.4028/www.scientific.net/msf.988.65.