

DAFTAR PUSTAKA

- Abral, H., Putra, H., Sapuan, S. M. dan Ishak, M. R., 2013, Effect of Alkalization on Mechanical Properties of Water Hyacinth Fibers-Unsaturated Polyester Composites, *Polymer-Plastics Technology and Engineering*, Vol. 52, 446–451.
- Akil, H. M., Omar, M. F., Mazuki, A. A. M., Safiee, S., Ishak, Z. A. M., dan Abu Bakar, A., 2011, Kenaf Fiber Reinforced Composites: A Review, *Materials and Design*, Vol. 32, 4107–4121.
- AlMaadeed, M. A. Kahraman, R., Khanam, P. N. dan Madi, N., 2012, Date Palm Wood Flour/Glass Fibre Reinforced Hybrid Composites of Recycled Polypropylene: Mechanical and Thermal Properties, *Materials and Design*, Vol. 42, 289–294.
- Alsaeed, T., Yousif, B. F. dan Ku, H., 2013, The Potential of Using Date Palm Fibres as Reinforcement for Polymeric Composites, *Materials and Design* Vol. 43, 177–184.
- Alomayri, T., Assaedi, H., Shaikh, F. U. A., Low, I. M., 2014, Effect of Water Absorption on the Mechanical Properties of Cottonfabric-reinforced Geopolymer Composites, *Journal of Asian Ceramic Societies*, Vol. 2, 223–230.
- Anadi, L., 2012, Pengembangan Teknis Desain Kapal Pancing Tonda Dengan Material Fiberglass di Kabupaten Buton Sulawesi Tenggara, Disertasi (tidak diterbitkan), Sekolah Pasca Sarjana Institut Pertanian, Bogor.
- Araujo, J. R., Waldman, W. R. dan De Paoli, M. A., 2008, Thermal Properties of High Density Polyethylene Composites with Natural Fibres: Coupling Agent Effect, *Polymer Degradation and Stability*, Vol. 93, 1770–1775.
- Arbelaiz, A., Cantero, G. Fernandez, B., Mondragon, I., Ganan, P. dan Kenny, J. M., 2005, Flax Fiber Surface Modifications: Effects on Fiber Physico Mechanical and Flax/Polypropylene Interface Properties, *Polymer Composites*, Vol. 26, 324–332.
- Asim, M., Jawaid, M., Abdan, K. dan Ishak, M. R., 2016, Effect of Alkali and *Silane* Treatments on Mechanical and Fibre-matrix Bond Strength of Kenaf and Pineapple Leaf Fibres, *Journal of Bionic Engineering*, Vol. 13, 426–435.

- ASTM D638, 2003, Standard Test Method for Tensile Properties Plastics, Annual Book of ASTM Standard, Vol.08.01, American Society of Testing and Materials (ASTM), Philadelphia, USA.
- ASTM D790, 2003, Standard Test Method for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials, Annual Book of ASTM Standard, Vol.08.01, American Society of Testing and Materials (ASTM), Philadelphia, USA.
- ASTM D3379, 1975, Standard Test Method for Tensile Strength and Young's Modulus for High Modulus Single Filament Fibers, American Society of Testing and Materials (ASTM), Philadelphia, USA.
- ASTM D3800, 2005, Standard Test Method for Density of High-modulus Fibers, ASTM International, West Conshohocken, Philadelphia, USA.
- Athijayamani, A., Thiruchitrabalam, M., Natarajan, U. dan Pazhanivel, B., 2009, Effect of Moisture Absorption on the Mechanical Properties of Randomly Oriented Natural Fibers/Polyester Hybrid Composite, Materials Science and Engineering A, Vol. 517, 344–353.
- Aziz, S. H. dan Ansell, M. P., 2004, The Effect of Alkalization and Fibre Alignment on the Mechanical and Thermal Properties of Kenaf and Hemp Bast Fibre Composites: Part 1 – Polyester Resin Matrix, Composites Science and Technology, Vol 164, 1219–1230.
- Aziz, A. A., Husin, M. dan Mokhtar, A., 2002, Preparation of Cellulose from Bunches via Ethanol Digestin: Effect of Acid and Alkali Catalyst, Journal of Oil Palm Research, Vol 14 (1), 9-14.
- Azwa, Z. N., Yousif, B. F., Manalo, A. C. dan Karunasena, W., 2013, A Review on the Degradability of Polymeric Composites Based on Natural Fibres, Materials and Design, Vol. 47, 424–442.
- Bader, M. G. dan Hill, A. R., 1993, Material Science and Technology: Structure and Properties of Composites: Short Fiber Composites, Vol. 13, Editor: Chou, T. W., VCH, Weinheim, Jerman.
- Baillie, C., 2004, Green Composites : Polymer Composites and the Environment, Woodhead Publishing Ltd., Cambridge, England.
- Barsoum, M. W., 1997, Fundamentals of Ceramics, McGraw-Hill.

- Berthelot, J. M., 1999, *Composite Materials Mechanical Behavior and Structural Analysis*, Springer-Verlag, New York.
- Bian, L., Xiao, J., Zeng J. dan Xing, S., 2012, Effects of Seawater Immersion on Water Absorption and Mechanical Properties of GFRP Composites, *Journal of Composite Materials*, Vol. 46, No. 25, 3151-3162.
- Biro Klasifikasi Indonesia, 2006, *Peraturan Untuk Material Non-metal*, Jakarta.
- Bismarck, A., Mishra, S. dan Lampke, T., 2005, *Natural Fibres, Biopolymers and Biocomposites*, CRC Press, Boca Raton, FL.
- Bismarck, A., Askargota, L. A., Springer, J., Lampke, T., Wielege, B., Stamboulis, A., Shenderovich, I. dan Limbach, H., 2002, Surface Characterization of Flax, Hemp, Cellulosic: Surface Properties and the Water Uptake Behavior, *Polymer Composites*, Vol. 23, No. 5, 872-894.
- Bledzki, A. K. dan Gassan, J., 1999, Composites Reinforced with Cellulose Based Fibres, *Progress in Polymer Science*, Vol. 24, 221–74.
- Bledzki, A. K., Reihmane, S. dan Gassan, J., 1996, Properties and Modification Methods for Vegetable Fibers for Natural Fiber Composites, *Journal of Applied Polymer Science*, Vol. 59, 1329–1336.
- Bledzki, A. K., Sperber, V. E. dan Faruk, O., 2002, *Natural and Wood Fibre Reinforcement in Polymers*, Vol. 13, No. 8, Rapra Technology Ltd., Shawbury, United Kingdom.
- Cai, M., Takagi, H., Nakagaito, A. N., Li, Y. dan Waterhouse, G. I. N., 2016, Effect of Alkali Treatment on Interfacial Bonding in Abaca Fiber-Reinforced Composites, *Composites: Part A*, Vol. 90, 589–597.
- Callister Jr, W. D. dan Rethwisch, D. G., 2009, *Materials Science and Engineering: An Introduction*, 8th Edition, John Wiley & Sons Inc., New Jersey.
- Carvalho, G. dan Frollini, E., 2002, Lignin in Phenolic Closed Cell Foams: Thermal Stability and Apparent Density, *Journal of Macromolecular Science Part A Pure and Applied Chemistry*, Vol. 39, 643–656.
- Dan-Mallam, Y., Abdullah, M. Z. dan Yusoff, P. S. M. M., 2014, The Effect of Hybridization on Mechanical Properties of Woven Kenaf Fiber Reinforced Polyoxymethylene Composites, *Polymer Composites*, Vol. 35, 1900–1910.

- Davallo, M., Pasdar, H. dan Mohseni, M., 2010, Mechanical Properties of Unsaturated Polyester Resin, *International Journal of ChemTech Research*, Vol. 2, No. 4, 2113-2117.
- Departemen Kelautan dan Perikanan, Direktorat Jenderal Perikanan Tangkap, 2008, *Petunjuk Pelaksanaan Pengelolaan Pelabuhan Perikanan*, Jakarta.
- Dhakal, H. N., Zhang, Z. Y. dan Richardson, M. O. W., 2007, Effect of Water Absorption on the Mechanical Properties of Hemp Fibre Reinforced Unsaturated Polyester Composites, *Composites Science and Technology*, Vol. 67, 1674–1683.
- Dominguez, J.C., del Saz-Orozco, B., Oliet, M., Alonso, M. V. dan Rodriguez, F., 2017, Thermal Properties and Thermal Degradation Kinetics of Phenolic and Wood Flour-reinforced Phenolic Foams, *Journal of Composite Materials*, Vol. 51, No.1, 125–138.
- Dorn, L., 1994, *Adhesive Bonding-Terms and Definitions*, TALAT Lecture 4701, European Aluminum Association, Berlin, Germany.
- Dwivedi, U. K. dan Chand, N., 2009, Influence of Fibre Orientation on Friction and Sliding Wear Behaviour of Jute Fibre Reinforced Polyester Composite, *Journal of Applied Composite Materials*, Vol. 16, 93-100.
- Eichhorn, S. J., Baillie, C. A., Zafeiropoulos, N., Mwaikambo, L. Y., Ansell, M. P., Dufresne, A., Entwistle, K. M., Herrera-Franco, P. J., Escamilla, G. C., Groom, L., Hughes, M., Hill, C., Rials, T. G. dan Wild, P. M., 2001, Review Current International Research into Cellulosic Fibres and Composites, *Journal of Materials Science*, Vol. 36, 2107 – 2131.
- Eng, C. C., Ibrahim, N. A., Zainuddin, N., Ariffin, H. dan Yunus, W. M. Z. W., 2014, Impact Strength and Flexural Properties Enhancement of Methacrylate *Silane* Treated Oil Palm Mesocarp Fiber Reinforced Biodegradable Hybrid Composites, *The Scientific World Journal*, 1-8.
- Faruk, O., Bledzki, A. K., Fink, H. P., Sain, M., 2012, Biocomposites Reinforced with Natural Fibers: 2000–2010, *Progress in Polymer Science*, Vol. 37, 1552–1596.
- Feresenbet, E., Raghavan, D. dan Holmes, G.A., 2003, The Influence of *Silane* Coupling Agent Composition on the Surface Characterization of Fiber and on

- Fiber-Matrix Interfacial Shear Strength, *The Journal of Adhesion*, Taylor & Francis, Vol. 79, 643 – 665.
- Fernandes, E. M., Mano, J. F. dan Reis, R. L., 2013, Hybrid Cork-polymer Composites Containing Sisal Fibre: Morphology, Effect of the Fibre Treatment on the Mechanical Properties and Tensile Failure Prediction. *Compos Struct*, Vol 105, 153–162.
- Frederick, T. W. dan Norman, W., 2004, *Natural Fibers Plastics and Composites*, Kluwer Academic Publishers, New York.
- Gañán, P., Zulunga, R., Restrepo, A., Labidi, J. dan Mondragon, I., 2008. Plantain Fibre Bundles Isolated from Colombian Agro-industrial Residues. *Bioresource Technology* 99, 486–491.
- Gassan, J. dan Bledzki, A. K., 1997, Effect of Moisture Content on the Properties of Silanized Jute-epoxy Composites, *Polymer Composites*, Vol. 18, 179–184.
- Gay, D., Hoa, S. V. dan Tsai, S. W., 2003, *Composite Material: Design and Applications*, CRC, Canada.
- Gere, J. M., 2004, *Mechanics of Materials*, 6th Edition, Thomson Learning, Inc., United States of America
- Ghasemzadeh-Barvarz, M., Duchesne, C. dan Rodrigue, D., 2015, Mechanical, Water Absorption, and Aging Properties of Polypropylene/Flax/Glass Fiber Hybrid Composites, *Journal of Composite Materials*, Vol. 49, 3781–3798.
- Gibson, R. F., 2012, *Principle of Composite Materials Mechanics*, 3rd Ed. CRC Press, Boca Raton.
- Golovoy, A., Cheung, M. F. dan Van Oene, H., 1988, Hydrolysis of Polycarbonate/Polybutylene Terephthalate Blend, *Polymer Engineering and Science*, Vol. 28, 200-206.
- Haameem J. A. M., Majid, M. S. A., Afendi, M., Marzuki, H. F. A., Hilmi, E. A., Fahmia, I. dan Gibson, A. G., 2016, Effects of Water Absorption on Napier Grass Fibre/Polyester Composites, *Composite Structures*, Vol. 144, 138–146.
- Hassan, A., Salema, A. A., Ani, F. N. dan Bakar, A. A., 2010, A Review on Oil Palm Empty Fruit Bunch Fiber-Reinforced Polymer Composite Materials. *Polymer Composites*, Vol. 31, 2079 – 2101.

- Haygood, D., Lallas, G. dan Porter, J.H., 1996, Technical Paper Series Report 960240, Society of Automotive Engineers (SAE).
- Heyne, K. 1987. Tumbuhan Berguna Indonesia Jilid II. Badan Penelitian dan Pengembangan Kehutanan. Departemen Kehutanan. Bogor.
- Holbery, J. dan Houston, D. 2006. Natural-Fiber-Reinforced Polymer Composites in Automotive Applications, Low-Cost Composites in Vehicle Manufacture, JOM, November 2006.
- Hossain, M. K., Karim, M. R., Chowdhury, M. R., Imam, M. A., Hosur, M., Jeelani, S., dan Farag, R., 2014, Comparative Mechanical and Thermal Study of Chemically Treated and Untreated Single Sugarcane Fiber Bundle, Industrial Crops and Production, Vol. 58, 78-90.
- Huda, M. S., Drzal, L. T., Mohanty, A. K. dan Misra, M., 2008, Effect of Fiber Surface-Treatments on the Properties of Laminated Biocomposites from Poly(lactic acid) (PLA) and Kenaf Fibers, Composites Science and Technology, Vol. 68, 424–432.
- Ishak, Z. A. M., Ariawan, D., Salim, M. S. Mat Taiba, R., Thirmizir M. Z. A, Phua, Y. J., 2014, The Effect of Alkalization on the Mechanical and Water Absorption Properties of Non-woven Kenaf Fiber/Unsaturated-polyester Composites Produced by Resin-transfer Molding (RTM), ECCM16 – 16th European Conference on Composite Materials, Spanyol.
- Islam, M. S., Pickering, K. L. dan Foreman, N. J., 2010, Influence of Hygrothermal Ageing on the Physico-Mechanical Properties of Alkali Treated Industrial Hemp Fibre Reinforced Polylactic Acid Composites, Journal of Polymers and the Environment, Vol. 18, 696–704
- Jacob, M., Thomas, S. dan Varughese, K. T., 2004, Mechanical Properties of Sisal/Oil Palm Hybrid Fibers Reinforced natural Rubber Composites, Composites Science and Technology, Vol. 64, 955-965.
- Jamasri, Diharjo, K. dan Gunesti, W. H., 2006, Studi Perlakuan Alkali dan Tebal Core terhadap Sifat Bending Komposit Sandwich Berpenguat Serat Sawit dengan Core Kayu Sawit, Indonesian Journal of Materials Science, Vol. 8, No. 1, Oktober 2006, 76 – 82.

- Jamasri, 2008, Prospek Pengembangan Komposit Serat Alam di Indonesia, Pidato Pengukuhan Jabatan Guru Besar pada Fakultas Teknik Universitas Gadjah Mada, Yogyakarta.
- Jamasri, 2009, Prospek Pengembangan Komposit Serat Alam untuk Bahan Baku Industri Kreatif, Stadium General, Universitas Islam Indonesia, Yogyakarta.
- Jones, R. M., 1999, *Mechanics of Composite Material*, 2nd ed., Taylor and Francis, Inc., Philadelphia, USA.
- Joseph, K., Filbo, R. D. T., Thomas, S. dan de Carvalho, L. H., 1999, A Review on Sisal Fiber Reinforced Polymer Composites, *Revista Brasileira de Engenharia Agricola e Ambiental*, Vol. 3, No. 3, 67 – 379.
- Joseph, S., Sreekala, M., Oommen, Z., Koshy, P., dan Thomas, S., 2002, A Comparison of the Mechanical Properties of Phenol Formaldehyde Composites Reinforced with Banana Fibres and Glass Fibres, *Composites Science and Technology*, Vol. 62, No. 14, 1857-1868.
- Joseph, P. V., Rabello, M. S., Mattoso, L. H. C., Joseph, K. dan Thomas, S., 2002, Environmental Effects on the Degradation Behaviour of Sisal Fibre Reinforced Polypropylene Composites, *Composites Science and Technology*, Vol. 62, No. 10-11, 1357–1372.
- Joshi, S. V., Drzal, L. T., Mohanty, A. K. dan Arora, S., 2004, Are Natural a Fiber Composites Environmentally Superior to Glass Fiber Reinforced Composites?, *Composites: Part A*, Vol. 35, pp 371-376.
- Karaduman, Y. dan Onal, L., 2010, Water Absorption Behavior of Carpet Waste Jute-reinforced Polymer Composites, *Journal of Composite Materials*, Vol. 45, 1559–1571.
- Karnani, R., Krishnan, M. dan Narayan, R., 1987, Biofiber Reinforced Polypropylene Composites, *Journal of Polymer Engineering and Science*, Vol. 37, No. 2, 476 – 482.
- Kaw, A. K., 2006, *Mechanics of Composite Materials*, 2nd ed., CRC Press, New York.
- Kim, H. S., Yang, H. S., Kim, H. J., dan Park, H. J., 2004, Thermogravimetric Analysis of Rice Husk Fluor Filled Thermoplastik Polymer Composites, *Journal of Thermal Analysis and Calometry*, Vol. 76, 395-404.

- Khalil, H. P. S. A., Hanida, S., Kang, C. W. dan Fuaad, N. A. N., 2007, Agro-hybrid Composite: The Effects on Mechanical and Physical Properties of Oil Palm Fiber (EFB)/Glass Hybrid Reinforced Polyester Composites, *Journal of Reinforced Plastics and Composites*, Vol. 26, No. 2, 203-218.
- Kozłowski, R. M., 2012, *Handbook of Natural Fibres, Volume 2: Processing and Applications*, Woodhead Publishing Limited, Philadelphia, USA.
- Kushwaha, P. K. dan Kumar, R., 2010, Studies on Water Absorption of Bamboo-Epoxy Composites: Effect of *Silane* Treatment of Mercerized Bamboo, *Journal of Applied Polymer Science*, Vol. 115, 1846-1852.
- Kusmono, Ishak, Z. A. M., Chow, W .S., Takeichi, T. dan Rochmadi, 2010, Water Absorption Behavior of Different Types of Organophilic Montmorillonite-filled Polyamide 6/Polypropylene Nanocomposites, *Polymer composites*, 195-202.
- Leao, A. L., Rowell, R. dan Tavares, N., 1997, Application of Natural Fibers in Automotive Industry in Brazil – Thermoforming Process, In *Proceeding of the 4th International Conference on Frontiers of Polymers and Advanced Materials*, Cairo, Egypt, 4–9 January 1997, 755–760.
- Lee, S. H. dan Wang, 2006, Biodegradable Polymers/Bamboo Fiber Biocomposite with Biobased Coupling Agent, *Composites: Part A*, Vol. 37, 80-91.
- Le Troedec, M., Sedan, D., Peyratout, C., Bonnet, J.P., Smith, A., Guinebretiere, R., Gloaguen, V. dan Krausz, P., 2008, Influence of Various Chemical Treatments on the Composition and Structure of Hemp Fibres. *Composites: Part A*, Vol. 39, 514-522.
- Li, X., Tabil, L. G. dan Panigrahi, S., 2007, Chemical Treatments of Natural Fiber for Use in Natural Fiber-Reinforced Composites: A Review, *Journal of Polymers and the Environment*, Vol. 15, 25–33.
- Liao, K., Schultheisz, C. R., dan Hunston, D. L., 1999, Long-term Environmental Fatigue of Pultruded Glass-fiber-reinforced Composites Under Flexural Loading, *International Journal of Fatigue*, Vol. 21, 485–495.
- Lu, N., Swan, R.H. dan Ferguson, I., 2011. Composition, Structure and Mechanical Properties of Hemp Fiber Reinforced Composite with Recycled High-density Polyethylene Matrix, *Journal of Composite Materials*, 1-11.

- Lynd, L. R., Weimer, P. J., van Zyl, W. H. dan Pretorius, I. S., 2002, Microbial Cellulose Utilization: Fundamentals and Biotechnology, *Microbiology and Molecular Biology Reviews*, Vol 66, No. 3, 506-577.
- Machaka, M., Basha, H., Chakra, H. A. dan Elkordi, A., 2014, Alkali Treatment of Fan Palm Natural Fibers for Use in Fiber Reinforced Concrete, *European Scientific Journal*, Vol. 10, No. 12, 186-195.
- Madsen, B., 2004, Properties of Plant Fibre Yam Composites, PhD Thesis, BYG-DTU, Technical University of Denmark.
- Mathew, L., Joseph, K. U., Joseph, R., 2006, Isora Fibre: Morphology, Chemical Composition, Surface Modification, Physical, Mechanical and Thermal Properties– A Potential Natural Reinforcement, *Journal of Natural Fibers*, Vol. 3, 13-27.
- Maslinda, A. B., Majid, M. S. A., Ridzuan, M. J. M., Afendi, M., dan Gibson, A.G., 2017, Effect of Water Absorption on the Mechanical Properties of Hybrid Interwoven Cellulosic-cellulosic Fibre Reinforced Epoxy Composites, *Composite Structures*, Vol. 167, 227-237.
- Ma'ruf, B., 2009, Teknologi Pembangunan dan Sertifikasi Kapal SEP-Hull, Laporan Penelitian, BPPT, Jakarta.
- Milanese, A. C., Cioffi, M. O. H., dan Voorwald, H. J. C., 2012, Thermal and Mechanical Behaviour of Ssisal/Phenolic Composites, *Composites Part B: Engineering*, Vol. 43, No. 7, 2843-2850.
- Mohanty, A. K., Misra, M. dan Drzal, L. T., 2002, Sustainable Bio-composite from Renewable Resources : Opportunities and Challenges in the Green Materials World, *Journal of Polymers and the Environment*, Vol. 10, 19 – 26.
- Mohanty, A. K., Misra, M. dan Drzal, L. T., 2005, Natural Fibers, Biopolymers, and Biocomposites: An Introduction Natural Fibers, Biopolymer and Biocomposite, CRC Press, Taylor & Francis Group, Boca Raton.
- Mwaikambo, L. Y. dan Ansell, M. P., 2002, Chemical Modification of Hemp, Sisal, Jute, and Kapok Fibers by Alkalization, *Journal of Applied Polymer Science*, Vol. 84, 2222-2234.
- Mwaikambo, L. Y. dan Bisanda, E., 1999, The Performance of Cotton/Kapok Fabric–Polyester Composites. *Polymer Testing*, Vol. 18, No. 3, 181–198.

- Naiola, B. P., 2006, Fluktuasi Potensial Air Harian Gewang (*Corypha Utan Lamarck*), Jenis Tumbuhan Hijau Abadi di Savana NTT, Berita Biologi, Vol. 8, No. 1, Bidang Botani, Pusat Penelitian Biologi-LIPI.
- Najafi, S. K. dan Kordkheili, H. Y., 2011, Effect of Sea Water on Water Absorption and Flexural Properties of Wood-Polypropylene Composites, European Journal of Wood Production, Vol. 69, 553–556.
- Nayak, S. K., Mohanty, S. dan Samal, S. K., 2009, Influence of Short Bamboo/Glass Fiber on the Thermal, Dynamic Mechanical and Rheological Properties of Polypropylene Hybrid Composites, Materials Science and Engineering A, Vol. 523, 32–38.
- Nguong, C. W., Lee, S. N. B. dan Sujan, D., 2013, A Review on Natural Fibre Reinforced Polymer Composites, International Journal of Chemical, Nuclear, Metallurgical and Materials Engineering, Vol. 7, No. 1, 33 – 40.
- Onal, L., Goktepe, F. dan Karaduman, Y., 2008, Characterization of Jute Carpet Waste for Natural Fibre Reinforced Composite Production. In: 7th Global WPC and Natural Fibre Composites Congress and Exhibition, Kassel, Germany, B18-1–B18-8.
- Orth, A. B., Royse, D. J. dan Tien, M., 1993, Ubiquity of Lignin-degrading Peroxidases among Various Wood-Degrading Fungi, Applied and Environmental Microbiology, Vol 59, 4017-4023.
- Orue, A., Jauregi, A., Unsuain, U., Labidi, J., Eceiza, A. dan Arbelaiz, A., 2016, The Effect of Alkaline and *Silane* Treatments on Mechanical Properties and Breakage of Sisal Fibers and Poly(lactic acid)/Sisal Fiber Composites, Composites: Part A, Vol 84, 186–195.
- Orue, A., Jauregi, A., Peña-Rodriguez, C., Labidi, J., Eceiza, A. dan Arbelaiz, A., 2015, The Effect of Surface Modifications on Sisal Fiber Properties and Sisal/Poly (Lactic Acid) Interface Adhesion, Composites Part B: Engineering, Vol. 73, 132–138.
- Panigrahi, S., Powell, T., Wang, B., Tabil, L.G., Crerar, W.J. dan Sokansanj, S., 2003, The Effect of Chemical Pretreatment on Flax Fibre Biocomposites, Paper on 2003 CSAE/ASAE Annual International Meeting, The Society for

Engineering in Agricultural, Food, and Biological System, 3-4 Oktober 2003, North Dakota, USA.

Panthapulakkal, S. dan Sain, M., 2007, Studies on the Water Absorption Properties of Short Hemp–Glass Fiber Hybrid Polypropylene Composites, *Journal of Composite Materials*, Vol. 41, 1871-1883.

Peijs, T., 2003, Composites for Recyclability, *Materials Today*, 30 – 35.

Pickering, K. L., Efendy, M. G. A. dan Le, T. M., 2016, A Review of Recent Developments in Natural Fibre Composites and Their Mechanical Performance. *Composites: Part A*, Vol. 83, 98–112.

Pickering, K. L., Beckermann, G. W., Alam, S. N. dan Foreman, N. J., 2007, Optimising Industrial Hemp Fibre for Composites, *Composites: Part A*, Vol. 38, 461-468.

Prasetyaningrum, A., Rokhati, N. dan Rahayu, A. K., 2009, Optimasi Proses Pembuatan Serat Daun agel untuk Menghasilkan Komposit Serat dengan Kualitas Fisik dan Mekanik yang Tinggi, *Jurnal Riptek*, Vol. 3, No. 1, 45–50.

Punyamurthy, R., Sampathkumar, D., Srinivasa, C.V. dan Bennehalli, B., 2012. Effect of Alkali Treatment on Water Absorption of Single Cellulosic Abaca Fiber. *BioResources*, Vol. 7, 3515–3524.

Rashid, B., Leman, Z., Jawaid, M., Ghazali. M. J. dan Ishak, M. R., 2016, The Mechanical Performance of Sugar Palm Fibres (Ijuk) Reinforced Phenolic Composites, *International Journal of Precision Engineering and Manufacturing*, Vol. 17, No. 8, 1001-1008.

Rashid, B., Leman, Z., Jawaid, M., Ghazali. M. J. dan Ishak, M. R., 2017, Influence of Treatments on the Mechanical and Thermal Properties of Sugar Palm Fibre Reinforced Phenolic Composites, *BioResources*, Vol. 12, No. 1, 1447-1462

Ray, D., Sarkar, B. K., Rana, A. K. dan Bose, N. R., 2001, Effect of Alkali Treated Jute Fibers on Composites Properties, *Bulletin of Material Science*, Vol. 24, No. 2, 129 – 135.

Reddy, K. O., Reddy, K. R. N., Zhang, J., Zhang, J. Rajulu, A. V., 2013, Effect of Alkali Treatment on the Properties of Century Fiber, *Journal of Natural Fibers*, Vol. 10, 282–296.

- Riedel, U. dan Nickel, J., 1999, Natural Fibre Reinforced Biopolymers as Construction Materials–New Discoveries, Die Angewandte Macromoleculare Chemie, 34 - 40.
- Rosa, I. M. D., Kenny, J. M., Puglia D., Santulli, D., dan Sarasini, F., 2009, Morphological, Thermal and Mechanical Characterization of Okra (*Abelmoschus esculentus*) Fibres as Potential Reinforcement in Polymer Composites, Composites Science and Technology, Vol. 70, 116-122.
- Rowell, R.M. dan Han, J.S., 2000, Characterization and Factors Effecting Fiber Properties, Natural Polymers and Agnifiber Composite, Brazil, 115 – 134.
- Saha, P., Manna, S., Chowdhury, S. R., Sen, R., Roy, D. dan Adhikari, B., 2010, Enhancement of Tensile Strength of Lignocellulosic Jute Fibers by Alkali-steam Treatment, Bioresource Technology, Vol. 101, 3182–3187.
- Saheb, D. N. dan Jog, J. P., 1999, Natural Fiber Polymer Composites: A Review, Advances in Polymer Technology, Vol. 18, No. 4, 351–363.
- Sajna, V. P., Mohanty, S. dan Nayak, S. K., 2014, Hybrid Green Nanocomposites of Poly(lactic acid) Reinforced with Banana Fibre and Nanoclay, Journal of Reinforced Plastics and Composites, Vol. 33, No. 18, 1717–1732.
- Salim, M. S., Mohd Ishak, Z. A. Ariawan, D. dan Thirmizir M. Z. A., 2015, Effect of Alkaline Treatment to Wettability and Flexural Properties of Kenaf Nonwoven Fibre Mat Reinforced Epoxy Composites Produced by Resin Transfer Moulding, Applied Mechanics and Materials, Vol. 754-755, 99-105.
- Salman, S. D., Sharba, M. J., Leman, Z., Sultan, M. T. H., Ishak, M. R. dan Cardona, F., 2015, Physical, Mechanical, and Morphological Properties of Woven Kenaf/Polymer Composites Produced Using a Vacuum Infusion Technique, International Journal of Polymer Science, No. 894565, 1-10.
- Samal, S. K., Mohanty, S. dan Nayak, S. K., 2009, Polypropylene–Bamboo/Glass Fiber Hybrid Composites: Fabrication and Analysis of Mechanical, Morphological, Thermal, and Dynamic Mechanical Behavior. Journal of Reinforced Plastic and Composite, Vol. 28, 2729–2747.
- Sawpan, M. A., Pickering, K. L. dan Fernyhough, A., 2011, Effect of Various Chemical Treatments on the Fibre Structure and Tensile Properties of Industrial Hemp Fibres, Composites: Part A, Vol. 42, 888-895.

- Shafiee, S. dan Topal, E., 2009, When Will Fossil Fuel Reserves Be Diminished?, Energy Policy, 181-189.
- Selvaraju, S. dan Ilaiyavel, S., 2011, Applications of Composite in Marine Industry, Journal of Engineering Research and Studies, Vol. 2, Issue II, 89-91
- Sever, K., Sarikanat, M., Seki, Y., Erkan, G. dan Erdogan, U. H., 2010, The Mechanical Properties of γ -Methacryloxypropyltrimethoxy Silane-treated Jute/Polyester Composites, Journal of Composite Materials, Vol. 44, No. 15, 1913-1924.
- Shackelford, 1992, Introduction to Materials Science for Engineer, 3rd edition, MacMillan Publishing Company, New York.
- Silva, R. V., Aquino, E. M. F., Rodrigues, L.P.S. dan Barros, A. R. F., 2009, Curaua/Glass Hybrid Composite: The Effect of Water Aging on the Mechanical Properties, Journal of Reinforced Plastics and Composites, Vol. 28, No. 15, 1857-1867.
- Simon, H., 2006, Hutan Jati dan Kemakmuran : Problema dan Strategi Pemecahannya, Penerbit Pustaka Pelajar, Yogyakarta.
- Solikin, A., 2005, Strategi Pembangunan Kelautan dan Perikanan Indonesia, Humaniora Utama Press, Bandung.
- Sreekala, M. S. dan Thomas, S., 2003, Effect of Fibre Surface Treatment on Water Sorption Characteristics of Oil Palm Fibres, Composites Science and Technology, Vol. 63, 861–869.
- Sreekumar, P. A., Thomas, S. P., Saiter, J. M., Joseph, K., Unnikrishnan, G. dan Thomas, S., 2009, Effect of Fiber Surface Modification on the Mechanical and Water Absorption Characteristics of Sisal/Polyester Composites Fabricated by Resin Transfer Molding, Composites: Part A, Vol. 40, No. 11, 1777– 1784.
- Sreenivasan, V.S., Ravindran, D., Manikandan, V. dan Narayanasamy, R., 2011, Mechanical Properties of Randomly Oriented Short Sansevieria Cylindrica Fibre/Polyester Composites, Materials and Design, Vol. 32, 2444 - 2455.
- Sreenivasan, V. S., Ravindran, D., Manikandan, V. dan Narayanasamy, R., 2012, Influence of fibre treatments on mechanical properties of short Sansevieria cylindrica/polyester composites, Materials and Design, Vol. 37, 111–121.

- Sui, G., Fuqua, M. A., Ulven, C. A. dan Zhong, W. H., 2009, A Plant Fiber Reinforced Polymer Composite Prepared by a Twin-screw Extruder, *Bioresource Technology*, Vol. 100, 1246–1251.
- Sun, R., Fang, J. M., Goodwin, A., Lawther, J. M. dan Bolton, A. J., 1998. Fractionation and Characterization of Polysaccharides from Abaca Fibre, *Carbohydrate Polymers*, Vol. 37, 351–359.
- Surdia, T., dan Saito, S., 1999, *Pengetahuan Bahan Teknik*, Cetakan Keempat, Pradnya Paramita, Jakarta.
- Swamy, R. P., Kumar, G. C. M. dan Vrushabendrappa, Y., 2004, Study of Areca Reinforced Phenol Formaldehyde Composites, *Journal of Reinforced Plastics and Composites*, Vol. 23 No. 13, 1373 – 1382.
- Taherzadeh, M. J., 1999, *Ethanol from Lignocellulose: Physiological Effect of Inhibitors and Fermentation Strategies*, Ph.D Thesis in Biotechnology, Chemical Reaction Engineering, Chalmers University of Technology.
- Taj, S., Munawar, M.A. dan Khan, S, 2007, Natural Fiber-Reinforced Polymer Composites, *Proceeding of Pakistan Academy of Sciences*, Vol. 44, No. 2, 129 -144.
- Terpakova, E., Kidalova, L., Estokova, A., Cigasova, J. dan Stevulova, N. 2012, Chemical Modification of Hemp Shives and Their Characterization, *Procedia Engineering*, Vol. 42, 1017–1028.
- Thwe, M. M. dan Liao, K., 2002, Effects of Environmental Aging on the Mechanical Properties of Bamboo-glass Fiber Reinforced Polymer Matrix Hybrid Composites, *Composites Part A*, Vol. 33, 43–52.
- Toyota, 2002, *Car Recycling Europe*, Toyota Motor Marketing Europe Environmental Affair Office, Brussels, Oktober 2002, dalam http://www.toyota_europe.com.
- Tserki, V., Zafeiropoulos, N. E., Simon, F. dan Panayiotou, C., 2005, A Study of The Effect of Acetylation and Propionylation Surface Treatments on Natural Fibres, *Composites: Part A*, Vol. 36, 1110–1118.
- Undang-undang RI No. 31 Tentang Perikanan, 2005, Cetakan Pertama, Penerbit Sinar Grafika Offset, Jakarta.

- Upadhyaya, P., Garg, M., Kumar, V. dan Nema, A. K., 2012, The Effect of Water Absorption on Mechanical Properties of Wood Flour/Wheat Husk Polypropylene Hybrid Composites, *Journal of Materials Sciences and Applications*, Vol. 3, 317-325.
- Valadez-Gonzalez, A., Cervantes-Uc, J.M., Olayo, R. dan Herrera-Franco, P.J., 1999, Effect of Fiber Surface Treatment on the Fiber–Matrix Bond Strength of Natural Fiber Reinforced Composites, *Journal of Composite Part B*, Vol. 30, 309 – 320.
- Van de Velde, K., dan Baetens, E., 2001, Thermal and Mechanical Properties of Flax Fibres as Potential Composite Reinforcement, *Macromolecular Materials and Engineering*, Vol. 286, 342-349.
- Vasiliev, V. V. dan Morozov, E. V., 2001, *Mechanics and Analysis of Composite Material*, 1st ed., Elsevier Science Ltd, The Boulevard, Langford Lane, Kidlington, Oxford, UK.
- Venkatesh, R. P., Ramanathan, K. dan Raman, V. S., 2016, Tensile, Flexural, Impact and Water Absorption Properties of Natural Fibre Reinforced Polyester Hybrid Composites, *Fibres & Textiles in Eastern Europe*, Vol. 24, No. 3(117), 90-94.
- Vicks, C. B., 1999, Adhesive Bonding of Wood Materials, *Wood Handbook-Wood as Engineering Materials*, Forest Product Laboratory, Madison, ch. 9, 1 -23.
- Wallenberger, F. T. dan Weston, N. E., 2004, *Natural Fibers, Plastics and Composites*, Kluwer Academic Publishers, New York.
- Wahab, R., Mustafa, M. T., Sudin, M. Mohamed, A., Rahman, S., Samsi, H. W. dan Khalid, I., 2013, Extractives, Holocellulose, α -Cellulose, Lignin and Ash Contents in Cultivated Tropical Bamboo *Gigantochloa brang*, *G. levis*, *G. scortechinii* and *G. wrayi*, *Current Research Journal of Biological Sciences*, Vol. 5, No. 6, 266-272.
- Wang, W. M., Cai, Z. S., Yu, J. Y. dan Xia, Z. P., 2009, Changes in Composition, Structure, and Properties of Jute Fibers after Chemical Treatments, *Fiber and Polymer*, Vol. 10, 776-780.

- Widiastuti, R., Awang, S. A., Prayitno, T. A., Warsito, dan Sofyan, P., 2011, Kajian Strategik Kelola Usaha pada Industri Kecil Agel, *Jurnal Riset Industri*, Vol. V, No. 1, Hal. 1-11.
- Yuan, J. M., Feng, Y. R., He, L. P., 2016, Effect of Thermal Treatment on Properties of Ramie Fibers, *Polymer Degradation and Stability*, Vol. 133, 303-311.
- Yuan, Y. dan Lee, T.R., 2013, *Surface Science Techniques*, Chapter 1: Contact Angle and Wetting Properties, Springer-Verlag Berlin Heidenberg.
- Yudo, H. dan Jatmiko, S., 2008, Analisa Teknik Kekuatan Mekanis Material Komposit Berpenguat Serat Ampas Tebu (*Baggase*) Ditinjau dari Kekuatan Tarik dan Impak, *Jurnal Kapal*, Vol. 5, No. 2, 95 – 101.
- Yue, C. Y., 1995, Determination of Antar muka Properties of Fibrous Composites, *Handbook of Advanced Material Testing*, MerceL Dekker Publisher, New York, USA, 367 – 387.
- Zhong, W. dan Pan, N., 2003, A Computer Simulation of Single Fiber Pull-out Process in a Composite, *Journal of Composite Materials*, Vol. 37, 1951-1969.
- Zhou, F., Cheng, G. dan Jiang, B., 2014, Effect of Silane Treatment on Microstructure of Sisal Fiber, *Applied Surface Science*, Vol. 292, 806– 812.
- Zhou, J. dan Lucas, J. P., 1995, The Effects of Water Environment on Anomalous Absorption Behaviour in Graphite Epoxy Composites, *Composites Science and Technology*, Vol. 53, 57–64.
- Zhou, L. M., Yeung, K.W.P. dan Yuen, C. W., 2002, Effect of NaOH Marcerization on the Crosslinking of Ramie Yarn Using 1,2,3,4-Butanetetracarboxylic Acid, *Textile Research Journal*, Vol. 72, No. 6, 806 – 812.
- Zhu, J., Zhu, H., Abhyankar, H., Njuguna, J., 2013, Effect of Fibre Treatments on Water Absorption and Tensile Properties of Flax/Tannin Composites, *Proceeding of The 19th International Conference on Composite Materials*.
- Zivkovic, I., Fragassa, C., Pavlovic, A. dan Brugo, T., 2017, Influence of Moisture Absorption on the Impact Properties of Flax, Basalt and Hybrid Flax/Basalt Fiber Reinforced Green Composites, *Composites Part B*, Vol. 111, 148-164.