

DAFTAR PUSTAKA

- Abe K, Iwamoto S, Yano H., 2007, Obtaining Cellulose Nanofibers with a Uniform Width of 15 nm from Wood. *Biomacromolecules*, Vol.8, pp.3276–3278.
- Abe, K., Yano, H., 2009, Comparison of the Characteristics of Cellulose Microfibril Aggregates of Wood, Rice Straw and Potato Tuber, *Cellulose*, Vol.16, pp.1017-1023.
- Affan, M. N., 2019, *Karakteristik Nanocrystalline Cellulose (NCC) yang Dihasilkan dari Serat Rami melalui Metode Hidrolisis Asam Fosfat (H₃PO₄)*, Universitas Gadjah Mada, Yogyakarta Indonesia.
- Androsits, B., 1999, Thermal Analysis Fundamental and Application and Polymer Science. *Journal of Thermal Analysis and Calorimetry*, Vol.58.
- Araki J, Wada M, Kuga S, Okano T., 1998, Flow properties of microcrystalline cellulose suspension prepared by acid treatment of native cellulose. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*.
- American Standard for Testing and Material (ASTM) E2550., 2011, Standard Test Method for Thermal Stability by Thermogravimetry.
- Fultz, B., Howe, J. M., 2008, *Transmission Electron Microscopy and Diffractometry of Materials*, Springer Berlin Heidelberg, Berlin, Heidelberg, Germany.
- Beck-Candanedo, S., Roman, M., Gray, D., 2005, Effect of Reaction Conditions on the Properties and Behavior of Wood Cellulose Nanocrystal Suspensions. *Biomacromolecules*, Vol.6, pp.1048-1054.
- Bhatnagar, A., Sain, M., 2005, Processing of Cellulose Nanofiber-reinforced Composites. *Journal of Reinforced Plastics and Composites*.Vol.24, pp.1259–1268.
- Biondini, D., Brinchi, L., Germani, R., Goracci, L., Savelli, G., 2010, Esterification Of Unprotected -Amino Acids In Ionic Liquids As Reaction Media. *Letters of Organic Chemistry*, Vol.7, pp.39–44.
- Börjesson, M., Westman, G., 2015, Crystalline Nanocellulose - Preparation, Modification, and Properties, *Cellulose - Fundamental Aspects and Current Trends*, pp.159-191
- Brinchi, L., Cotana, F., Fortunati, E., Kenny, J., 2013, Production of nanocrystalline cellulose from lignocellulosic biomass: *Technology and applications*. *Carbohydrate Polymers*, Vol.94, pp.154-169.

- Chen, H., Ferrari C., Angiuli M., Yao J., Raspi C., Bramanti, E., 2010, Qualitative and quantitative analysis of wood samples by Fourier transform infrared spectroscopy and multivariate analysis. *Carbohydrate Polymers*, Vol.82, pp.772-778.
- Corrêa, A. C., Pessan, L. A., Teizeira, E., 2010, Cellulose Nanofibers From Curaua Fibers. *Cellulose*, Vol.17, No.6, pp.1183-1192.
- Czaja W, Krystynowicz A, Bielecki S, Brown Jr. RM, 2006, Microbial cellulose - the natural power to heal wounds. *Biomaterials*. Vol.27, pp.145-151.
- Dai, D., 2012, *Hemp Nanocellulose: Fabrication, Characterisation and Application*, Brunel University, United Kingdom.
- Das, K., Ray, D., Bandyopadhyay, N. R., Ghosh, T., Mohanty, A. K., Misra, M., 2009, A Study Of The Mechanical: Thermal And Morphological Properties Of Microcrystalline Cellulose Particles Prepared From Cotton Slivers Using Different Acid Concentrations. *Cellulose*, Vol.16, pp.783-793.
- Deepa, B., Abraham, E., Cherian, B. M., Bismarck, A., Blaker, J. J., Pothan, L.A., Leao, A. L., de Souza, S. F., Kottaisamy, M., 2011, Structure, morphology and thermal characteristics of banana nano fibers obtained by steam explosion, *Bioresource Technologies*, Vol.102, pp.1988-1997.
- Dong, X. M., Revol, J. F., Gray, D. G., 1998, Effect Of Microcrystalline Preparation Conditions On The Formation Of Colloidal Crystals Of Cellulose. *Cellulose*, Vol5, pp.19-32.
- Fahma, F., Iwamoto, S., Hori, N., Iwata, T., Takemura, A., 2011, Effect of Pre-Acid-Hydrolysis Treatment on Morphology and Properties of Cellulose Nanowhiskers from Coconut Husk. *Cellulose*. Vol.18, No.2, pp.443-450.
- Filson, P., dan Dawson-andoh, B., 2009, Sono-Chemical Preparation of Cellulose Nanocrystals from Lignocellulose Derived Materials. *Bioresource Technology*, Vol.100, pp.2259-2264.
- French, A. D., Cintrón, M. S., 2013, Cellulose Polymorphy, Crystallite Size, And The Segal Crystallinity Index, *Cellulose*, Vol20, No.1, pp.583-588.
- Habibi, Y., Lucia, L., Rojas, O., 2010, Cellulose Nanocrystals: Chemistry, Self-Assembly and Applications. *Chemical Reviews*, Vol.110, pp.3479-3500.
- Håkansson, H. Ahlgren, P., 2005, Acid Hydrolysis Of Some Industrial Pulps: Effect Of Hydrolysis Conditions And Raw Material. *Cellulose*, Vol.12, pp.177-183.
- Helbert, W, Cavaille, J. Y., Dufresne, A., 1996, Thermoplastic Nanocomposites Filled with Wheat Straw Cellulose Whiskers. Part I: Processing and Mechanical Behavior. *Polymer Composites*, Vol.17, pp.604-611.

- Ilyas, R., Sapuan, S., & Ishak, M., 2018, Isolation and characterization of nanocrystalline cellulose from sugar palm. *Carbohydrate Polymers Vol. 181*, 1038-1051
- Ishak, M., Sapuan, S., Leman, Z., Rahman, M., & Anwar, U., 2012, Characterization of Sugar Palm (*Arenga Pinnata*) fibres. *Journal of Thermal Analysis, and Calorimetry, Vol. 109 (2)*, 981-989.
- Islam, M. T., Alam, M. M., Zoccola, M., 2013. Review On Modification Of Nanocellulose For Application In Composites. *International Journal of Innovative Research in Science, Engineering and Technology*, pp.2319-8753.
- Johnsy, G. 2015. Cellulose nanocrystals: synthesis, functional properties, and applications. *Nanotechnology, Science and Applications*, vol.8, pp.45–54.
- Julkapli, N. M., Bagheri, S., 2017, Progress on Nanocrystalline Cellulose Biocomposites, *Reactive and Functional Polymers*, Vol.112, pp.9-21.
- Kabir, M. M., Wang, H., Lau, K. T., Cardona, F., 2013, Effects Of Chemical Treatments On Hemp Fibre Structure. *Applied Surface Science*, Vol.276, pp.13–23.
- Kargarzadeh, H., Ahmad, I., Abdullah, I., Dufresne, A., Zainudin, S., & Sheltami, R., 2012, Effects of hydrolysis conditions on the morphology, crystallinity, and thermal stability of cellulose nanocrystals extracted from kenaf bast fibers. *Cellulose* 19, 855-866
- Kilpelainen, I., Xie, H., King, A., Granstrom, M., Heikkinen, S., Argyropoulos, D. S., 2007, Dissolution Of Wood In Ionic Liquids. *Journal of Agriculture and Food Chemistry*, Vol.55, pp.9142–9148.
- Klemm, D., Heublein, B., Fink, H., Bohn, A., 2005, Cellulose: Fascinating Biopolymer and Sustainable Raw Material. *Angewandte Chemie International Edition*, Vol.44, pp.2-37.
- Kumar, A., Negi, Y., Bhardwaj, N., Choudhary, V., 2012, Synthesis and Characterization of Methylcellulose/PVA Based Porous Composite. *Carbohydrate Polymers*, Vol.88, pp.1364-1372.
- Kumar, A., Negi, Y., Choudhary, V., Bhardwaj, N., 2014, Characterization of Cellulose Nanocrystals Produced by Acid-Hydrolysis from Sugarcane Bagasse as Agro-Waste. *Journal of Materials Physics and Chemistry*, Vol.2, No.1, pp.1-8.
- Kusmono, Wildan, M. W., & Ilman, M. N., 2018, Studi awal ekstraksi dan karakterisasi nanocrystalline cellulose (NCC) dari serat rami. *Mechanical Engineering and Emerging Technologies National Conference*. Yogyakarta.

- Kian, L. K., Jawaid, M., Ariffin, H., Alothman, O. Y., 2017, Isolation and characterization of microcrystalline cellulose from roselle fibers. *International Journal of Biological Macromolecules*, Vol.103, pp.931–940.
- Kian, L. K., Jawaid, M., Ariffin, H., Karim, Z., 2018, Isolation and Characterization of Nanocrystalline Cellulose from Roselle-Derived Microcrystalline Cellulose, *International Journal of Biological Macromolecules*, Vol.114, pp.54-63.
- Lei, W., Fang, C., Zhou, X., Yin, Q., Pan, S., Yang, R., Ouyang, Y., 2018, Cellulose Nanocrystals Obtained from Office Waste Paper and Their Potential Application in PET Packing Materials. *Carbohydrate Polymers*, Vol.181, pp.376-385.
- Lennholm, H., Henriksson, G., 2007, Cellulose and Carbohydrate Chemistry, *Wood Chemistry and Wood Biotechnology*, pp.73–102.
- Lu P., Hsieh, Y., 2012, Preparation and characterization of cellulose nanocrystals from rice straw, *Carbohydrate Polymers*, Vol.87, pp.564–573.
- Luzi, F., Fortunati, E., Puglia, D., Lavornga, M., Santullini, C., Kenny, J.M., Torre, L., 2014, Optimized Extraction of Cellulose Nanocrystals from Pristine and Carded Hemp Fibres, *Industrial Crops and Products*, Vol.56 pp. 175-186.
- Man, Z., Muhammad, N., Sarwono, A., Bustam, M. A., Kumar, M. V., Rafiq, S., 2011, Preparation Of Cellulose Nanocrystals Using An Ionic Liquid. *Journal of Polymer and the Environment*, vol.19, pp.726–731.
- Mohanty A. K., Misra, M., Drzal, L. T., 2001, Surface Modification Of Natural Fibers And Performance Of The Resulting Biocomposites: An Overview. *Compos Interfac*, Vol.8, pp.313–343.
- Moon, R. J., Frihart, C. R., Wegner, T., 2006, Nanotechnology Applications in the Forest Products Industry. *Forest Products Journal*. Vol.56, pp.4–10.
- Moon, R. J., Martini, A., Nairn, J., Simonsen, J., Youngblood, J, 2011, Cellulose Nanomaterials Review: Structure, Properties And Nanocomposites. *Chemical Society Reviews*, Vol.40, pp.3941-3994.
- Moreira, S, Silva, N. B., Almeida-Lima, J., Rocha, H. A. O., Medeiros, S. R. B., Alves C., 2009, Bc Nanofibres: In Vitro Study Of Genotoxicity And Cell Proliferation. *Toxicology Letters*, pp.189:235–241.
- Munawar, S. S., Umemura, K., Tanaka, F., Kawal, S., 2007, Effects of Alkali, Mild Steam, and Chitosan Treatments on the Properties of Pineapple, Ramie, and Sansevieria Fiber Bundles, *The Japan Wood Research Society*, Vol.54, pp.28-35
- Neto, W. P. F., 2017, *Morphological Investigation of Cellulose Nanocrystals and Composite Applications*, Université Grenoble Alpes, France.

- Nillson, L., 2015, *Preparation Methods for Nanocrystalline Cellulose - Acid hydrolysis and various cellulose sources*, Chalmers University of Technology, Gothenburg.
- Ojeda, J., Dittrich, M., 2012, Fourier Transform Infrared Spectroscopy for Molecular Analysis of Microbial Cells. *Methods In Molecular Biology*, pp.187-212.
- Oun, A. A., Rhim, J., 2016, Isolation of Cellulose Nanocrystals from Grain Straws and Their Use for the Preparation of Carboxymethyl Cellulose-Based Nanocomposite Films, *Carbohydrate Polymers*, Vol.150, pp.187-200.
- Peng, B., Dhar, N., Liu, H., Tan, K., 2011, Chemistry and Applications Of Nanocrystalline Cellulose And Its Derivatives: A Nanotechnology Perspective. *The Canadian journal of chemical engineering*, vol.89, No.5, pp.1191-1206.
- Saurabh, C., Dungani, R., Owalobi, A., Atiqah, N., Zaidon, A., Aprilia, N., Khalil, H., 2016, Effect of Hydrolysis Treatment on Cellulose Nanowhiskers from Oil Palm (*Elaeis guineensis*) Fronds: Morphology, Chemical, Crystallinity, and Thermal Characteristics. *Bioresources*, Vol.11. No.3, pp.6742-6755.
- Segal, L., Creely, J. J., Martin, A. E., Conrad, C. M., 1959, An empirical method for estimating the degree of crystallinity of native cellulose using the X-ray diffractometer. *Text Res Journal*, Vol.29, pp.786–794.
- Siquera, G., Bras, J., Dufresne, A., 2010, Cellulosic Bionanocomposites: A Review Of Preparation Properties And Applications. *Polymers*, Vol.2, pp.728–765
- Terech, P., Chazeau, L., Cavaille, J. Y., 1999, A Small-Angle Scattering Study of Cellulose Whiskers in Aqueous Suspensions. *Macromolecules*, Vol.32, pp.1872–1875
- Tokoh, C., Takabe, K., Fujita, M., Saiki, H., 1998, Cellulose Synthesized By *Acetobacter Xylinum* In The Presence Of Acetyl Glucomannan. *Cellulose*; Vol,5, pp.249–261.
- Trache, D., Hussin, M., Haafiz, M., Thakur, V., 2017, Recent Progress In Cellulose Nanocrystals: Sources And Production. *Nanoscale*, Vol.9, pp.1763-1786.
- Xu, Q., Gao, Y., Qin, M., Wu, K., Fu, Y., Zhao, J., 2013, Nanocrystalline Cellulose From Aspen Kraft Pulp And Its Application In Deinked Pulp. *International Journal Of Biological Macromolecules*, Vol.60, pp.241-247.
- Yang, H., Yan R., Chen H., Lee D. H., Zheng C., 2007, Characteristics of hemicelluloses, cellulose and lignin pyrolysis. *Fuel*, Vol.86.
- Yang, J., 2017, *Manufacturing of Nanocrystalline Cellulose*, Aalto University, Finlandia.

- Yu, H., Qin, Z., Liang, B., Liu, N., Zhoub, Z., Chen, L., 2013, Facile extraction of thermally stable cellulose nanocrystals with a high yield of 93% through hydrochloric acid hydrolysis under hydrothermal conditions, *Journal of Materials Chemistry A*, Vol.1, pp.3938–3944.
- Yudhanto, F., Jamasri, Rochardjo, H. S. B., 2018, Physical and Thermal Properties of Cellulose Nanofibers (CNF) Extracted from Agave Cantala Fibers Using Chemical-Ultrasonic Treatment. *International Review of Mechanical Engineering* (IREME), Vol.12. no.7, pp.597-603.
- Zhang, P. P., Tong, D. S., Lin, C. X., Yang, H. M., Zhong, Z. K., Yu, W. H., Wang, H., Zhou, C. H., 2014, Effects of Acid Treatments On Bamboo Cellulose Nanocrystals. *Asia-Pacific Journal of Chemical Engineering*, Vol.9. no.5, pp.686-695.