

DAFTAR PUSTAKA

- [1] M. Yani and F. Lubis, “Pembuatan Dan Penyelidikan Pelrilaku Mekanik Komposit Diperkuat Serat Limbah Plastik Akibat Beban Lendutan,” *Tek. Mesin ITM*, vol. 4, no. 2, pp. 77–84, 2018.
- [2] M. Yani, B. Suroso, and R. Rajali, “Mechanical Properties Komposit Limbah Plastik,” *J. Rekayasa Mater. Manufaktur dan Energi*, vol. 2, no. 1, pp. 74–83, 2019, doi: 10.30596/rmme.v2i1.3071.
- [3] H. Abral *et al.*, “Effect of ultrasonication duration of polyvinyl alcohol (PVA) gel on characterizations of PVA film,” *J. Mater. Res. Technol.*, vol. 9, no. 2, pp. 2477–2486, 2020, doi: 10.1016/j.jmrt.2019.12.078.
- [4] L. Triyastiti and D. Krisdiyanto, “Isolasi Nanokristal dari Pelepah Pohon Salak Sebagai Filler pada Film Berbasis Polivinil Alkohol (PVA),” *Indones. J. Mater. Chem.*, vol. 1, no. 1, pp. 39–45, 2018.
- [5] M. Maryam, D. Rahmad, and Y. Yunizurwan, “Sintesis Mikro Selulosa Bakteri Sebagai Penguat (Reinforcement) Pada Komposit Bioplastik Dengan Matriks PVA (Poli Vinil Alcohol),” *J. Kim. dan Kemasan*, vol. 41, no. 2, p. 110, 2019, doi: 10.24817/jkk.v41i2.4055.
- [6] W. Ernayati and B. Buchari, “Pembuatan Elektroda Tipe Kawat Terlapis Polipirol-Lisin Dan Studi Penggunaannya Sebagai Sensor Potensiometrik Lisin,” *Tek. J. Sains dan Teknol.*, vol. 7, no. 1, p. 33, 2011, doi: 10.36055/tjst.v8i1.6703.
- [7] B. susanto Widodo, Harlia, and I. Syahbanu, “Sintesis Komposit Polimer Konduktif Polipirol (PPy)/ Selulosa Bakteri,” *Jkk*, vol. 7, no. 1, pp. 59–65, 2018.
- [8] D. Candani, M. Ulfah, W. Noviana, and R. Zainul, “A Review Pemanfaatan Teknologi Sonikasi,” *INA-Rxiv*, no. 26, pp. 1–9, 2018.
- [9] J. Sheng, T. Chen, R. Wang, Z. Zhang, F. Hua, and R. Yang, “Ultra-light cellulose nanofibril membrane for lithium-ion batteries,” *J. Memb. Sci.*, vol. 595, no. October 2019, p. 117550, 2020, doi: 10.1016/j.memsci.2019.117550.
- [10] C. Luo *et al.*, “A new approach for ultrahigh-performance piezoresistive sensor based on wrinkled PPy film with electrospun PVA nanowires as spacer,” *Nano Energy*, vol. 41, no. October, pp. 527–534, 2017, doi: 10.1016/j.nanoen.2017.10.007.
- [11] H.-W. Wang, C. Bringans, A. J. R. Hickey, J. A. Windsor, P. A. Kilmartin, and A. R. J. Phillips, “Cyclic Voltammetry in Biological Samples: A Systematic Review of Methods and Techniques Applicable to Clinical Settings,” *Signals*, vol. 2, no. 1, pp. 138–158, 2021, doi:

- 10.3390/signals2010012.
- [12] D. He, F. Tang, H. Jiang, W. Hirunpinyopas, T. Cetinkaya, and Z. Li, “The vertically aligned graphene/graphite/PPy composites electrode and its PPy thickness-dependent electrochemical performance,” *Electrochim. Acta*, vol. 399, p. 139426, 2021, doi: 10.1016/j.electacta.2021.139426.
 - [13] W. Zheng, Y. Yang, L. Fan, D. Ye, W. Xu, and J. Xu, “Ultralight PPy @ PVA / BC / MXene composite aerogels,” *Appl. Surf. Sci.*, p. 157138, 2023, doi: 10.1016/j.apsusc.2023.157138.
 - [14] C. G. Granqvist, M. A. Arvizu, Bayrak Pehlivan, H. Y. Qu, R. T. Wen, and G. A. Niklasson, “Electrochromic materials and devices for energy efficiency and human comfort in buildings: A critical review,” *Electrochim. Acta*, vol. 259, pp. 1170–1182, 2018, doi: 10.1016/j.electacta.2017.11.169.
 - [15] A. Sjahriza, S. Herlambang, and I. F. Wati, “Modifikasi Karakteristik Kuat Tarik pada Komposit Film Poli(Vinil Pirolidon) dan Karagenan Melalui Pembentukan Komposit Karbon Nano Dot,” *al-Kimiya*, vol. 5, no. 2, pp. 52–56, 2019, doi: 10.15575/ak.v5i2.3756.
 - [16] G. M. Elkomy, S. M. Mousa, and H. Abo Mostafa, “Structural and optical properties of pure PVA/PPY and cobalt chloride doped PVA/PPY films,” *Arab. J. Chem.*, vol. 9, pp. S1786–S1792, 2016, doi: 10.1016/j.arabjc.2012.04.037.
 - [17] M. Lay, I. González, J. A. Tarrés, N. Pellicer, K. N. Bun, and F. Vilaseca, “High electrical and electrochemical properties in bacterial cellulose/polypyrrole membranes,” *Eur. Polym. J.*, vol. 91, no. November 2016, pp. 1–9, 2017, doi: 10.1016/j.eurpolymj.2017.03.021.
 - [18] J. Xu *et al.*, “Conductive polypyrrole-bacterial cellulose nanocomposite membranes as flexible supercapacitor electrode,” *Org. Electron.*, vol. 14, no. 12, pp. 3331–3338, 2013, doi: 10.1016/j.orgel.2013.09.042.
 - [19] D. Kurniawan, S. Nikmatin, and A. Maddu, “Sintesis Nanopartikel Serat Rami Dengan Metode Ultrasonikasi Untuk Aplikasi Filler Bionanokomposit,” *J. Biofisika*, vol. 8, no. 2, pp. 34–41, 2012.
 - [20] A. Anugraini, I. Syahbanu, and H. A. Melati, “Pengaruh Waktu Sonikasi terhadap Karakteristik Selulosa Asetat Hasil Sintesis dari Sabut Pinang,” *J. Kim. Khatulistiwa*, vol. 7, no. 3, pp. 18–26, 2018.
 - [21] Anggi and M. Afdhal, “Polianilin-Selulosa Ampas Tebu,” *J. Fis. Unand*, vol. 6, no. 2, pp. 107–112, 2017.
 - [22] S. Indarwati, S. M. B. Respati, and D. Darmanto, “Kebutuhan Daya Pada Air Conditioner Saat Terjadi Perbedaan Suhu Dan Kelembaban,” *J. Ilm. Momentum*, vol. 15, no. 1, pp. 91–95, 2019, doi: 10.36499/jim.v15i1.2666.
 - [23] L. C. Lestari and F. Kumala, “Pengaruh laju payar dan konsentrasi analat menggunakan teknik voltametri siklik,” no. Sari, pp. 4–9, 2013.
 - [24] O. Gharbi, M. T. T. Tran, B. Tribollet, M. Turmine, and V. Vivier,

- “Revisiting cyclic voltammetry and electrochemical impedance spectroscopy analysis for capacitance measurements,” *Electrochim. Acta*, vol. 343, p. 136109, 2020, doi: 10.1016/j.electacta.2020.136109.
- [25] P. C. P. Films, M. H. Harun, E. Saion, A. Kassim, and M. Y. Hussain, “Temperature Dependence of AC Electrical Conductivity of d,” vol. 3, no. 2, pp. 24–31, 2008.
- [26] E. Taer, Z. Zulkifli, E. N. Arif, and R. Taslim, “ANALISA KAPASITANSI SPESIFIK ELEKTRODA KARBON SUPERKAPASITOR dari KAYU KARET terhadap LAJU SCAN BERDASARKAN VARIASI AKTIVASI HNO₃,” *Spektra J. Fis. dan Apl.*, vol. 1, no. 1, pp. 35–40, 2016, doi: 10.21009/spektra.011.06.
- [27] R. T. Setyawan and S. Riyadi, “Analisis Variasi Struktur Serat Rami Komposit Matrik Epoksi Terhadap Kekuatan Uji Balistik Dan Bending,” *J. Ilm. Momentum*, vol. 16, no. 2, pp. 111–115, 2020, doi: 10.36499/mim.v16i2.3763.
- [28] J. Wu, X. Z. Yuan, and H. Wang, “Cyclic voltammetry,” *PEM Fuel Cell Diagnostic Tools*, no. 2, pp. 71–85, 2011, doi: 10.1201/9781439807842.ch10.
- [29] Rosalina, Suprihatin, and P. K. Karo, “Pengaruh Luas Permukaan Spesifik terhadap Kapasitansi Spesifik Elektrode Zeolit Akibat Variasi Suhu Kalsinasi,” *J. Teor. dan Apl. Fis.*, vol. 5, no. 1, pp. 37–42, 2017.
- [30] F. Nurazmi, “Validasi Metode Uji Analisis Asam Urat Dalam Urin Dengan Voltametri Siklik Menggunakan Elektroda Karbon Pensil,” 2020.
- [31] M. Abdullah and K. Khairurrijal, “Review: Karakterisasi Nanomaterial,” *J. Nano Saintek*, vol. 2, no. 1, pp. 1–9, 2009.
- [32] A. Pambudi, M. Farid, and H. Nurdiansah, “Analisa Morfologi dan Spektroskopi Infra Merah Serat Bambu Betung (Dendrocalamus Asper) Hasil Proses Alkalisisasi Sebagai Penguat Komposit Absorbsi Suara,” *J. Tek. ITS*, vol. 6, no. 2, pp. 441–444, 2017, doi: 10.12962/j23373539.v6i2.24808.
- [33] M. S. Wahyuni and E. Hastuti, “karakterisai cangkang kerang menggunakan XRD dan X-RAY physics basic unit,” *Neutrino*, vol. 3, no. 1, pp. 32–43, 2010.
- [34] B. Anita, V. Sampath, and R. Vanathi Vijayalakshmi, “FTIR, XRD, EDAX and hardness test – An integrated approach to explore the elemental composition of archaeological and contemporary ceramic samples,” *Mater. Today Proc.*, vol. 68, pp. 628–635, 2022, doi: 10.1016/j.matpr.2022.09.291.
- [35] K. Salama, V. Selvamanickam, L. Gao, and K. Sun, “High current density in bulk YBa₂Cu₃O_x superconductor,” *Appl. Phys. Lett.*, vol. 54, no. 23, pp. 2352–2354, 1989, doi: 10.1063/1.101525.
- [36] M. Serhan *et al.*, “Total iron measurement in human serum with a smartphone,” *AICHE Annu. Meet. Conf. Proc.*, vol. 2019-Novem, no. c, pp.

- 1–4, 2019, doi: 10.1039/x0xx00000x.
- [37] I. Nurfirzatulloh, I. Suherti, M. Insani, R. A. Shafira, and E. Abriyani, “Literature Review Article: Identifikasi Gugus Fungsi Tanin Pada Beberapa Tumbuhan Dengan Instrumen Ftir,” *J. Ilm. Wahana Pendidik.*, vol. 9, no. 4, pp. 201–209, 2023, [Online]. Available: <https://doi.org/10.5281/zenodo.7678425>
- [38] T. Suharti, “Dasar-dasar spektrofotometri UV-Vis dan spektrometri massa untuk penentuan struktur senyawa organik”.
- [39] M. J. Simanjuntak, “Studi Film Polivinil Alkohol (PVA) Di Modifikasi dengan Acrylamide (Aam) Sebagai Material Sensitif Terhadap Kelembaban,” *Thesis*, p. Depok: Universitas Indonesia, 2008.
- [40] T. S. Dewi and N. P. Putri, “Pengaruh Waktu Ultrasonikasi terhadap Nilai Kapasitansi Elektroda Superkapasitor Berbahan Dasar Tempurung Kelapa,” *J. Inov. Fis. Indones.*, vol. 8, no. 1, pp. 5–7, 2019.
- [41] E. Taer, S. D. Hartati, S. Sugianto, and R. Taslim, “Pengaruh Variasi Suhu Aktivasi Fisika Terhadap Sifat Fisis Dan Elektrokimia Elektroda Karbon Superkapasitor Dari Limbah Kulit Pisang,” *Spektra J. Fis. dan Apl.*, vol. 1, no. 2, pp. 165–170, 2016, doi: 10.21009/spektra.012.11.
- [42] R. F. Suwandana and D. Susanti, “Analisis Pengaruh Massa Reduktor Zinc Terhadap Sifat Kapasitif Superkapasitor Material Graphene,” *J. Tek. ITS*, vol. 4, no. 1, pp. 95–100, 2015.
- [43] H. G. Firnando and Astuti, “Pengaruh Suhu Pada Proses Sonikasi Terhadap Morfologi Partikel dan Kristalinitas Nanopartikel Fe₃O₄,” *Fis. Unand*, vol. 4, no. 1, pp. 1–5, 2015.

