

DAFTAR PUSTAKA

- Adib, M., Al-qodah, Z., & Ngah, C. W. Z. (2015). Agricultural bio-waste materials as potential sustainable precursors used for activated carbon production : A review. *Renewable and Sustainable Energy Reviews*, *46*, 218–235. <https://doi.org/10.1016/j.rser.2015.02.051>
- Afrianda, A., Taer, E., & Taslim, R. (2017). PEMANFAATAN AMPAS SAGU SEBAGAI ELEKTRODA KARBON SUPERKAPASITOR. *Komunikasi Fisika Indonesia*, *p-ISSN.141*, 1119–1124.
- Afshari, M., Moghadassi, A., & Hosseini, S. M. (2024). Nanocomposite ZIF-8 @ Active Carbon-co-Chitosan incorporated nanofiltration membrane with enhanced antifouling property and high separation efficiency to salt , heavy metals , and dye solutions. *Arabian Journal of Chemistry*, *17*(10), 105951. <https://doi.org/10.1016/j.arabjc.2024.105951>
- Agus, O. :, & Abstrak, R. (n.d.). *SUPERKAPASITOR SEBAGAI PIRANTI PENYIMPAN ENERGI LISTRIK MASA DEPAN*.
- Aziz, H., Tetra, O. N., Alif, A., Syukri, & Ramadhan, W. (2016). Electrical properties of supercapacitor electrode-based on activated carbon from waste palm kernel shells. *Der Pharma Chemica*, *8*(15), 227–232.
- Barzegar, F., Momodu, D. Y., Fashedemi, O. O., Bello, A., Dangbegnon, J. K., & Manyala, N. (2015). RSC Advances Investigation of different aqueous electrolytes on the electrochemical performance of activated. *RSC Advances*, *5*, 107482–107487. <https://doi.org/10.1039/C5RA21962K>
- Brebu, M., & Vasile, C. (2010). *THERMAL DEGRADATION OF LIGNIN – A REVIEW*. *44*(9), 353–363.
- Butova, V. V, Zdravkova, V. R., Burachevskaia, O. A., Gorban, I. E., Soldatov, M. A., & Hadjiivanov, K. I. (2025). Microporous and Mesoporous Materials FTIR traced modification of defect-engineered UiO-66 for enhanced accessibility of zirconium sites. *Microporous and Mesoporous Materials*, *382*(October 2024), 113372. <https://doi.org/10.1016/j.micromeso.2024.113372>
- Chen, T., & Dai, L. (2013). Carbon nanomaterials for high- performance supercapacitors. *Biochemical Pharmacology*, *16*(7–8), 272–280. <https://doi.org/10.1016/j.mattod.2013.07.002>
- Coates, J. (2019). *Interpretation of Infrared Spectra , A Practical Approach*. 10815–10837.
- Endo, M., Takeda, T., Kim, Y. J., Koshiba, K., & Ishii, K. (2014). *High Power Electric Double Layer Capacitor (EDLC's) ; from Operating Principle to*

Pore Size Control in Advanced Activated Carbons High Power Electric Double Layer Capacitor (EDLC ' s); from Operating Principle to Pore Size Control in Advanced Activated Carbons. November.

- Farma, R., Oktaviandari, M., & Asyana, V. (2020). Effect of carbonized temperature to supercapacitor electrode from palm midrib biomass. *Journal of Aceh Physics Society*, 10(1), 21–25. <https://doi.org/10.24815/jacps.v10i1.17926>
- Febriyanto, P., Jerry, J., Satria, A. W., & Devianto, H. (2019). Pembuatan Dan Karakterisasi Karbon Aktif Berbahan Baku Limbah Kulit Durian Sebagai Elektroda Superkapasitor. *Jurnal Integrasi Proses*, 8(1), 19. <https://doi.org/10.36055/jip.v8i1.5439>
- Fitria Pusipita sari, Erman Taer, S. (2014). EFEK VARIASI WAKTU BALL MILLING TERHADAP KARAKTERISTIK ELEKTROKIMIA SEL SUPERKAPASITOR BERBASIS KARBON. *JOM FMIPA, Volume 1 N*, 217–227.
- Fu, Y., Zhang, N., Shen, Y., Ge, X., & Chen, M. (2018). Bioresource Technology Micro-mesoporous carbons from original and pelletized rice husk via one- step catalytic pyrolysis. *Bioresource Technology*, 269(July), 67–73. <https://doi.org/10.1016/j.biortech.2018.08.083>
- Gendut Suprayitno, A. E. F. A. D. (2015). Pengembangan Energi Panas Bumi yang Berkelanjutan. *Semesta Teknika*, 17(1), 68–82. <https://doi.org/10.18196/st.v17i1.412>
- Hakim, L., & Dirgantara, M. (2019). *Karakterisasi Struktur Material Pasir Bongkahan Galian Golongan C Dengan*. 1(1), 44–51.
- Hideno, A. (2018). *com Thermal Degradation Behavior of Ball-milled Miscanthus Plants and Its Relationship to Enzymatic Hydrolysis*. 13(3), 6383–6395.
- Ismanto, A. E., Wang, S., Soetaredjo, F. E., & Ismadji, S. (2010). Bioresource Technology Preparation of capacitor ' s electrode from cassava peel waste. *Bioresource Technology*, 101(10), 3534–3540. <https://doi.org/10.1016/j.biortech.2009.12.123>
- Jujur, P., Nur, M., Asy, M., & Nur, H. (2020). Heliyon SEM , XRD and FTIR analyses of both ultrasonic and heat generated activated carbon black microstructures. *Heliyon*, 6(3), e03546. <https://doi.org/10.1016/j.heliyon.2020.e03546>
- Kalpna, D., Cho, S. H., Lee, S. B., Lee, Y. S., Misra, R., & Renganathan, N. G. (2009). *Recycled waste paper — A new source of raw material for electric double-layer capacitors*. 190, 587–591. <https://doi.org/10.1016/j.jpowsour.2009.01.058>
- Kampouris, D. K., Ji, X., Randviir, P., & Banks, C. E. (2015). RSC Advances

- A new approach for the improved interpretation of capacitance measurements for materials utilised in. *RSC Advances*, 5, 12782–12791. <https://doi.org/10.1039/C4RA17132B>
- Kesavan, T., Partheeban, T., Vivekanantha, M., Kundu, M., Maduraiveeran, G., & Sasidharan, M. (2019). Hierarchical nanoporous activated carbon as potential electrode materials for high performance electrochemical supercapacitor. *Microporous and Mesoporous Materials*, 274(May 2018), 236–244. <https://doi.org/10.1016/j.micromeso.2018.08.006>
- Kombongkila, O., Taunaumang, H., & Tumimomor, F. (2024). *Analisis Struktur Film Tipis Disperse Orange-3 Hasil FTIR*. 5(1), 45–50.
- Li, J., Liu, G., Li, C., Deng, Y., Tadda, M. A., Lan, L., Zhu, S., & Liu, D. (2018). Effects of different solid carbon sources on water quality, biofloc quality and gut microbiota of Nile tilapia (*Oreochromis niloticus*) larvae. *Aquaculture*, 495, 919–931. <https://doi.org/10.1016/j.aquaculture.2018.06.078>
- Maulana, I., & Maulana, M. (2015). Pemanfaatan Janggel Jagung dan Batok Kelapa Menjadi Gas Mempan Bakar untuk Mensubstitusi Elpiji Melalui Proses Gasifikasi. *Prosiding Seminar Nasional Teknik Kimia “Kejuangan,”* 1, 1–7.
- Novitra, R., Aziz, H., & Taer, E. (2022). Supercapactors based on active carbon from spent arabica coffee ground using NaOH activators. *Journal of Aceh Physics Society*, 11(1), 33–40. <https://doi.org/10.24815/jacps.v11i1.22227>
- Novitra, T. (2021). Superkapasitor Berbahan Dasar Karbon Aktif Ampas Biji Kopi dengan Aktivator KOH. *Journal of Chemical Information and Modeling*, 1–82.
- Nuradi, R. F. (2022). Pembuatan Superkapasitor Dari Karbon Aktif kulit Buah KAKAO Sebagai Penyimpan Energi. *Pertanian Organik*, 02520002, 1–15.
- Parkia, P., & Polimer, D. (2022). *IONTech ANALISIS INTERAKSI KIMIA FOURIER TRANSFORM INFRARED (FTIR) TABLET GASTRORENTIF EKSTRAK DAUN IONTech*. 03(02), 27–33.
- Riski Kurniawan, Musthofa Lutfi, W. A. N. (2014). *Karakterisasi Luas Permukaan Bet (Braunanear , Emmelt dan Teller) Karbon Aktif dari Tempurung Kelapa dan Tandan Kosong Kelapa Sawit dengan Aktivasi Asam Fosfat Characterization of Bete Surface Area (Braunanear , Emmelt Dan Teller) Activated Carbon fro. 2file:///C(1), 15–20.*
- S. Lowell, Joan E. Shields, Martin A. thomas, M. T. (2004). *Characterization of orous Solids and Powders : surface Area, Pore Size and Density* (p. ISBN 1-4020-2303-0).

- Sa'don, N. A., Rahim, A. A., & Hussin, M. H. (2017). The effect of p-nitrophenol toward the structural characteristics and antioxidant activity of oil palm fronds (OPF) lignin polymers. *International Journal of Biological Macromolecules*, 98, 701–708. <https://doi.org/10.1016/j.ijbiomac.2017.01.137>
- Sahdiah, H., & Kurniawan, R. (2023). *Optimasi Tegangan Akselerasi pada Scanning Electron Microscope – Energy Dispersive X-Ray Spectroscopy (SEM-EDX) untuk Pengamatan Morfologi Sampel Biologi*. 6(2), 117–123.
- Sefentry, A., & Iii, M. T. W. D. (n.d.). *Jurnal redoks*.
- Song, T., Liao, J., Xiao, J., & Shen, L. (2015). Effect of micropore and mesopore structure on CO₂ adsorption by activated carbons from biomass. *New Carbon Materials*, 30(2), 156–166. [https://doi.org/10.1016/S1872-5805\(15\)60181-0](https://doi.org/10.1016/S1872-5805(15)60181-0)
- Stoller, M. D., & Ruoff, R. S. (2010). *Best practice methods for determining an electrode material 's performance for ultracapacitors*. 1294–1301. <https://doi.org/10.1039/c0ee00074d>
- Sulaiman, K. S., Mat, A., & Arof, A. K. (2015). *Activated carbon from coconut leaves for electrical double-layer capacitor*. <https://doi.org/10.1007/s11581-015-1594-9>
- Taer, E., & Padang, E. (n.d.). *Effect of N₂ carbonization temperature on porous activated carbon derived from jicama (Pachyrhizus erosus L .) peel as electrode material for supercapacitor* *Effect of N₂ carbonization temperature on porous activated carbon derived from jicama (Pachyrhizus erosus L .) peel as electrode material for supercapacitor*. <https://doi.org/10.1088/1742-6596/2193/1/012016>
- Taer, E., Zulkifli, Z., Arif, E. N., & Taslim, R. (2016). ANALISA KAPASITANSI SPESIFIK ELEKTRODA KARBON SUPERKAPASITOR dari KAYU KARET terhadap LAJU SCAN BERDASARKAN VARIASI AKTIVASI HNO₃. *Spektra: Jurnal Fisika Dan Aplikasinya*, 1(1), 35–40. <https://doi.org/10.21009/spektra.011.06>
- Taslim, A. et al. E. T. R. (2020). *Activated Carbon Electrode from Banana-Peel Waste for. 040004*(February 2018). <https://doi.org/10.1063/1.4973093>
- Wang, Y., Qu, Q., Gao, S., Tang, G., & Liu, K. (2019). Biomass derived carbon as binder-free electrode materials for supercapacitors. *Carbon*, 155, 706–726. <https://doi.org/10.1016/j.carbon.2019.09.018>
- Xia, M., Zhang, X., Chen, Y., Sun, F., Wang, X., Yang, H., & Chen, H. (2020). Hierarchical porous carbon derived from wood tar using crab as the template : Performance on supercapacitor. *Journal of Power Sources*, 455(March), 227982. <https://doi.org/10.1016/j.jpowsour.2020.227982>

- Zhang, Y., Yu, S., Lou, G., Shen, Y., Chen, H., & Shen, Z. (2017). Macroporous Materials Review of macroporous materials as electrochemical supercapacitor electrodes. *Journal of Materials Science*. <https://doi.org/10.1007/s10853-017-0955-3>
- Zhong, C., Deng, Y., Hu, W., Qiao, J., Zhang, L., & Zhang, J. (2015). A review of electrolyte materials and compositions for electrochemical supercapacitors. *44*(21). <https://doi.org/10.1039/c5cs00303b>
- Zulichatun, S., Wijayanti, A., Hidayah, N., Marfina, A., Pranata, Y. A., & Nurbaeti, L. (2015). *Analisis Luas Permukaan Zeolit Alam Termodifikasi Dengan Metode BET Menggunakan Surface Area Analyzer (SAA)*. 2015.