DAFTAR PUSTAKA

Abbas, Y., Pargar, F., Olthuis, W. and van DenBerg, A. 2014 Activated Carbon as a Pseudo-Reference Electrode for Potentiometric Sensing inside Concrete, in *Procedia Eng*. Elsevier Ltd, pp. 1437–1440.

Ahmed, S., Ahmed, A. and Rafat, M. 2018 Supercapacitor Performance of Activated Carbon Derived from Rotten Carrot in Aqueous, Organic and Ionic Liquid Based Electrolytes, *Journal of Saudi Chemical Society*, 22(8), pp. 993–1002.

Alvarez, J., Lopez, G., Amutio, M., Bilbao, J. and Olazar, M. 2015 Physical Activation of Rice Husk Pyrolysis Char for the Production of High Surface Area Activated Carbons, *Ind Eng Chem Res*, 54(29), pp. 7241–7250.

Arami-Niya, A., Daud, W.M.A.W. and Mjalli, F.S. 2010 Using Granular Activated Carbon Prepared from Oil Palm Shell by ZnCl 2 and Physical Activation for Methane Adsorption, *J Anal Appl Pyrolysis*, 89(2), pp. 197–203.

Arkhipova, E.A., Novotortsev, R.Y., Ivanov, A.S., Maslakov, K.I. and Savilov, S. v. 2022 Rice Husk-Derived Activated Carbon Electrode in Redox-Active Electrolyte – New Approach for Enhancing Supercapacitor Performance, *J Energy Storage*, 55.

Bi, Z., Kong, Q., Cao, Y., Sun, G., Su, F., Wei, X., Li, X., Ahmad, A., Xie, L. and Chen, C.M. 2019 Biomass-Derived Porous Carbon Materials with Different Dimensions for Supercapacitor Electrodes: A Review, *J Mater Chem A Mater*. Royal Society of Chemistry, pp. 16028–16045.

Carmezim, M.J. and Santos, C.F. 2017 Electrolytes in Metal Oxide Supercapacitors, *Metal Oxides in Supercapacitors*, pp. 49–78.

Castro-Gutiérrez, J., Celzard, A. and Fierro, V. 2020 Energy Storage in Supercapacitors: Focus on Tannin-Derived Carbon Electrodes, *Front Mater*. Frontiers Media S.A.

Chen, J., Liu, J., Wu, D., Bai, X., Lin, Y., Wu, T., Zhang, C., Chen, D. and Li, H. 2021 Improving the Supercapacitor Performance of Activated Carbon Materials Derived from Pretreated Rice Husk, *J Energy Storage*, 44.

Chen, X.Y., Chen, C., Zhang, Z.J., Xie, D.H., Deng, X. and Liu, J.W. 2013 Nitrogen-Doped Porous Carbon for Supercapacitor with Long-Term Electrochemical Stability, *J Power Sources*, 230, pp. 50–58.

Cheng, Q., Xia, Y., Pavlinek, V., Yan, Y., Li, C. and Saha, P. 2012 Effects of Macropore Size on Structural and Electrochemical Properties of Hierarchical Porous Carbons, *J Mater Sci*, 47(17), pp. 6444–6450.

Colomba, A., Berruti, F. and Briens, C. 2022 Model for the Physical Activation of Biochar to Activated Carbon, *J Anal Appl Pyrolysis*, 168, p. 105769.

Cottis, R.A. 2010 Electrochemical Methods, *Shreir's Corrosion*, pp. 1341–1373.

Divyashree A., Manaf, S.A.B.A., S., Y., K., C., N., K. and Hegde, G. 2016 Low Cost, High Performance Supercapacitor Electrode Using Coconut Wastes: Eco-Friendly Approach, *Journal of Energy Chemistry*, 25(5), pp. 880–887.

Doloksaribu, M. E. 2019, Fabrikasi dan Karakterisasi Superkapasitor Berbasis Karbon Aktif Nanopori dan Logam Transisi Oksida, *PhD thesis*, Fakultas Matematika dan Ilmu Pengetahuan Alam, Universitas Gadjah Mada, Yogyakarta.

Fachrudin, A.C., 2021. Fabrikasi Superkapasitor Berbasis Karbon Aktif Dengan Manganese Dioxide Dan Reduced Graphene Oxide. *Skripsi S1*. Fakultas Matematika dan Ilmu Pengetahuan Alam, Universitas Gadjah Mada, Yogyakarta

Elgrishi, N., Rountree, K.J., McCarthy, B.D., Rountree, E.S., Eisenhart, T.T. and Dempsey, J.L. 2018 A Practical Beginner's Guide to Cyclic Voltammetry, *J Chem Educ*, 95(2), pp. 197–206.

Elmouwahidi, A., Zapata-Benabithe, Z., Carrasco-Marín, F. and Moreno-Castilla, C. 2012 Activated Carbons from KOH-Activation of Argan (Argania Spinosa) Seed Shells as Supercapacitor Electrodes, *Bioresour Technol*, 111, pp. 185–190.

Gao, Y., Li, L., Jin, Y., Wang, Y., Yuan, C., Wei, Y., Chen, G., Ge, J. and Lu, H. 2015 Porous Carbon Made from Rice Husk as Electrode Material for Electrochemical Double Layer Capacitor, *Appl Energy*, 153, pp. 41–47.

Hagemann, N., Spokas, K., Schmidt, H.P., Kägi, R., Böhler, M.A. and Bucheli, T.D. 2018 Activated Carbon, Biochar and Charcoal: Linkages and Synergies across Pyrogenic Carbon's ABCs, *Water (Switzerland)*. MDPI AG.

He, X., Geng, Y., Qiu, J., Zheng, M., Long, S. and Zhang, X. 2010 Effect of Activation Time on the Properties of Activated Carbons Prepared by Microwave-Assisted Activation for Electric Double Layer Capacitors, *Carbon N Y*, 48(5), pp. 1662–1669.

He, X., Ling, P., Yu, M., Wang, X., Zhang, X. and Zheng, M. 2013 Rice Husk-Derived Porous Carbons with High Capacitance by ZnCl2 Activation for Supercapacitors, *Electrochim Acta*, 105, pp. 635–641.

Heidarinejad, Z., Dehghani, M.H., Heidari, M., Javedan, G., Ali, I. and Sillanpää, M. 2020 Methods for Preparation and Activation of Activated Carbon: A Review, *Environ Chem Lett*. Springer, pp. 393–415.

Hossain, S.K.S., Mathur, L. and Roy, P.K. 2018 Rice Husk/Rice Husk Ash as an Alternative Source of Silica in Ceramics: A Review, *Journal of Asian Ceramic Societies*. Taylor and Francis Ltd., pp. 299–313.

Hou, J., Jiang, K., Tahir, M., Wu, X., Idrees, F., Shen, M. and Cao, C. 2017 Tunable Porous Structure of Carbon Nanosheets Derived from Puffed Rice for High Energy Density Supercapacitors, *J Power Sources*, 371, pp. 148–155.

Hsia, B., 2013, Materials Synthesis and Characterization for Micro-supercapacitor Applications, *Phd thesis*, Chemical and Biomolecular Engineering, University of California, Berkeley

Hu, Q., Shi, X., Sun, K., Cui, S., Hamouda, H.A., Zhang, W., Peng, H. and Ma, G. 2022 A Super-Stretchable and Thermally Stable Hydrogel Electrolyte for High Performance Supercapacitor with Wide Operation Temperature, *J Alloys Compd*, 909.

Isahak, W.N.R.W., Hisham, M.W.M. and Yarmo, M.A. 2013 Highly Porous Carbon Materials from Biomass by Chemical and Carbonization Method: A Comparison Study, *J Chem* [Preprint].

Jing, X., Wang, L., Qu, K., Li, R., Kang, W., Li, H. and Xiong, S. 2021 KOH Chemical-Activated Porous Carbon Sponges for Monolithic Supercapacitor Electrodes, *ACS Appl Energy Mater*, 4(7), pp. 6768–6776.

Jisha, M.R., Hwang, Y.J., Shin, J.S., Nahm, K.S., Prem Kumar, T., Karthikeyan, K., Dhanikaivelu, N., Kalpana, D., Renganathan, N.G. and Stephan, A.M. 2009 Electrochemical Characterization of Supercapacitors Based on Carbons Derived from Coffee Shells, *Mater Chem Phys*, 115(1), pp. 33–39.

Kalderis, D., Bethanis, S., Paraskeva, P. and Diamadopoulos, E. 2008 Production of Activated Carbon from Bagasse and Rice Husk by a Single-Stage Chemical Activation Method at Low Retention Times, *Bioresour Technol*, 99(15), pp. 6809–6816.

Khan, J.H., Marpaung, F., Young, C., Lin, J., Islam, M.T., Alsheri, S.M., Ahamad, T., Alhokbany, N., Ariga, K., Shrestha, L.K., Yamauchi, Y., Wu, K.C.W., Hossain, M.S.A. and Kim, J. 2019 Jute-Derived Microporous/Mesoporous Carbon with Ultra-High Surface Area Using a Chemical Activation Process, *Microporous and Mesoporous Materials*, 274, pp. 251–256.

Kumar, D.P., Ramesh, D., Subramanian, P., Karthikeyan, S. and Surendrakumar, A. 2022 Activated Carbon Production from Coconut Leaflets through Chemical Activation: Process Optimization Using Taguchi Approach, *Bioresour Technol Rep*, 19.

Leal da Silva, E., Torres, M., Portugau, P. and Cuña, A. 2021 High Surface Activated Carbon Obtained from Uruguayan Rice Husk Wastes for Supercapacitor Electrode Applications: Correlation between Physicochemical and Electrochemical Properties, *J Energy Storage*, 44.

Lee, J.H., Ahn, H.J., Cho, D., Youn, J. il, Kim, Y.J. and Oh, H.J. 2015 Effect of Surface Modification of Carbon Felts on Capacitive Deionization for Desalination, *Carbon Letters*, 16(2), pp. 93–100.

Lei, E., Li, W., Ma, C., Xu, Z. and Liu, S. 2018a CO 2 -Activated Porous Self-Templated N-Doped Carbon Aerogel Derived from Banana for High-Performance Supercapacitors, *Appl Surf Sci*, 457, pp. 477–486.

Lei, E., Li, W., Ma, C., Xu, Z. and Liu, S. 2018b CO 2 -Activated Porous Self-Templated N-Doped Carbon Aerogel Derived from Banana for High-Performance Supercapacitors, *Appl Surf Sci*, 457, pp. 477–486.

Li, X., Han, C., Chen, X. and Shi, C. 2010 Preparation and Performance of Straw Based Activated Carbon for Supercapacitor in Non-Aqueous Electrolytes, *Microporous and Mesoporous Materials*, 131(1–3), pp. 303–309.

Liu, D., Hao, Z., Zhao, X., Su, R., Feng, W., Li, S. and Jia, B. 2019 Effect of Physical and Mechanical Activation on the Physicochemical Structure of Coal-Based Activated Carbons for SO2 Adsorption, *Processes*, 7(10).

Liu, H.Y., Wang, K.P. and Teng, H. 2005 A Simplified Preparation of Mesoporous Carbon and the Examination of the Carbon Accessibility for Electric Double Layer Formation, *Carbon N Y*, 43(3), pp. 559–566.

Liu, P.S., Chen, G.F., Kitagawa, S. and Bedard, R. 2013 *Characterization Methods 10.4 Concluding Remarks Volume Editors' Introduction*.

Ma, J., Li, Y., Grundish, N.S., Goodenough, J.B., Chen, Y., Guo, L., Peng, Z., Qi, X., Yang, F., Qie, L., Wang, C.A., Huang, B., Huang, Z., Chen, L., Su, D., Wang, G., Peng, X., Chen, Z., Yang, J., *et al.* 2021 The 2021 Battery Technology Roadmap, *J Phys D Appl Phys*, 54(18).

Maher, M., Hassan, S., Shoueir, K., Yousif, B. and Abo-Elsoud, M.E.A. 2021 Activated Carbon Electrode with Promising Specific Capacitance Based on Potassium Bromide Redox Additive Electrolyte for Supercapacitor Application, *Journal of Materials Research and Technology*, 11, pp. 1232–1244.

Memetova, A., Tyagi, I., Singh, L., Karri, R.R., Suhas, Tyagi, K., Kumar, V., Memetov, N., Zelenin, A., Tkachev, A., Bogoslovskiy, V., Shigabaeva, G., Galunin, E., Mubarak, N.M. and Agarwal, S. 2022 Nanoporous Carbon Materials as a Sustainable Alternative for the Remediation of Toxic Impurities and Environmental Contaminants: A Review, *Science of the Total Environment*. Elsevier B.V.

Mensah-Darkwa, K., Zequine, C., Kahol, P.K. and Gupta, R.K. 2019 Supercapacitor Energy Storage Device Using Biowastes: A Sustainable Approach to Green Energy, *Sustainability (Switzerland)*. MDPI.

Miller, E.E., Hua, Y. and Tezel, F.H. 2018 Materials for Energy Storage: Review of Electrode Materials and Methods of Increasing Capacitance for Supercapacitors, *J Energy Storage*. Elsevier Ltd, pp. 30–40.

Muniandy, L., Adam, F., Mohamed, A.R. and Ng, E.P. 2014 The Synthesis and Characterization of High Purity Mixed Microporous/Mesoporous Activated Carbon from Rice Husk Using Chemical Activation with NaOH and KOH, *Microporous and Mesoporous Materials*, 197, pp. 316–323.

Naderi, M. 2015 Surface Area: Brunauer-Emmett-Teller (BET), in *Progress in Filtration and Separation*. Elsevier Ltd, pp. 585–608.

Ozpinar, P., Dogan, C., Demiral, H., Morali, U., Erol, S., Samdan, C., Yildiz, D. and Demiral, I. 2022 Activated Carbons Prepared from Hazelnut Shell Waste by Phosphoric Acid Activation for Supercapacitor Electrode Applications and Comprehensive Electrochemical Analysis, *Renew Energy*, 189, pp. 535–548.

Pandolfo, A.G. and Hollenkamp, A.F. 2006 Carbon Properties and Their Role in Supercapacitors, *J Power Sources*, pp. 11–27.

Porada, S., Zhao, R., van der Wal, A., Presser, V. and Biesheuvel, P.M. 2013 Review on the Science and Technology of Water Desalination by Capacitive Deionization, *Prog Mater Sci*. Elsevier Ltd, pp. 1388–1442.

Pujotomo, I. 2017 *POTENSI PEMANFAATAN BIOMASSA SEKAM PADI UNTUK PEMBANGKIT LISTRIK MELALUI TEKNOLOGI GASIFIKASI*.

Qiao, Z.A. and Huo, Q.S. 2017 Synthetic Chemistry of the Inorganic Ordered Porous Materials, in *Modern Inorganic Synthetic Chemistry: Second Edition*. Elsevier Inc., pp. 389–428.

Raut, E.R., Bedmohata, M.A. and Chaudhari, A.R. 2022 Comparative Study of Preparation and Characterization of Activated Carbon Obtained from Sugarcane Bagasse and Rice Husk by Using H3PO4 and ZnCl2, *Mater Today Proc* [Preprint].

Raza, W., Ali, F., Raza, N., Luo, Y., Kim, K.H., Yang, J., Kumar, S., Mehmood, A. and Kwon, E.E. 2018 Recent Advancements in Supercapacitor Technology, *Nano Energy*. Elsevier Ltd, pp. 441–473.

Sarkar, A., Singh, A.K., Sarkar, D., Khan, G.G. and Mandal, K. 2015 Three-Dimensional Nanoarchitecture of BiFeO3 Anchored TiO2 Nanotube Arrays for Electrochemical Energy Storage and Solar Energy Conversion, *ACS Sustain Chem Eng*, 3(9), pp. 2254–2263.

Sayğili, H. and Güzel, F. 2016 High Surface Area Mesoporous Activated Carbon from Tomato Processing Solid Waste by Zinc Chloride Activation: Process Optimization, Characterization and Dyes Adsorption, *J Clean Prod*, 113, pp. 995–1004.

Seredych, M., Hulicova-Jurcakova, D., Lu, G.Q. and Bandosz, T.J. 2008 Surface Functional Groups of Carbons and the Effects of Their Chemical Character, Density and Accessibility to Ions on Electrochemical Performance, *Carbon N Y*, 46(11), pp. 1475–1488.

Shiratori, N., Lee, K.J., Miyawaki, J., Hong, S.H., Mochida, I., An, B., Yokogawa, K., Jang, J. and Yoon, S.H. 2009 Pore Structure Analysis of Activated Carbon Fiber by Microdomain-Based Model, *Langmuir*, 25(13), pp. 7631–7637.

Sinha, P., Datar, A., Jeong, C., Deng, X., Chung, Y.G. and Lin, L.C. 2019 Surface Area Determination of Porous Materials Using the Brunauer-Emmett-Teller (BET) Method: Limitations and Improvements, *Journal of Physical Chemistry C*, 123(33), pp. 20195–20209.

Srinivasan, R., Elaiyappillai, E., Pandian, H.P., Vengudusamy, R., Johnson, P.M., Chen, S.M. and Karvembu, R. 2019 Sustainable Porous Activated Carbon from Polyalthia Longifolia Seeds as Electrode Material for Supercapacitor Application, *Journal of Electroanalytical Chemistry*, 849.

Sun, K., Leng, C.Y., Jiang, J.C., Bu, Q., Lin, G.F., Lu, X.C. and Zhu, G.Z. 2017 Microporous Activated Carbons from Coconut Shells Produced by Self-Activation Using the Pyrolysis Gases Produced from Them, That Have an Excellent Electric Double Layer Performance, *Xinxing Tan Cailiao/New Carbon Materials*, 32(5), pp. 451–459.

Susanti, R.F., Wiratmadja, R.G.R., Kristianto, H., Arie, A.A. and Nugroho, A. 2022 Synthesis of High Surface Area Activated Carbon Derived from Cocoa Pods Husk by Hydrothermal Carbonization and Chemical Activation Using Zinc Chloride as Activating Agent, *Mater Today Proc*, 63, pp. S55–S60.

Teo, E.Y.L., Muniandy, L., Ng, E.P., Adam, F., Mohamed, A.R., Jose, R. and Chong, K.F. 2016 High Surface Area Activated Carbon from Rice Husk as a

High Performance Supercapacitor Electrode, *Electrochim Acta*, 192, pp. 110–119.

Theerthagiri, J., Karuppasamy, K., Durai, G., Rana, A. ul H.S., Arunachalam, P., Sangeetha, K., Kuppusami, P. and Kim, H.S. 2018 Recent Advances in Metal Chalcogenides (MX; X = S, Se) Nanostructures for Electrochemical Supercapacitor Applications: A Brief Review, *Nanomaterials*. MDPI AG.

Thommes, M., Kaneko, K., Neimark, A. v., Olivier, J.P., Rodriguez-Reinoso, F., Rouquerol, J. and Sing, K.S.W. 2015 Physisorption of Gases, with Special Reference to the Evaluation of Surface Area and Pore Size Distribution (IUPAC Technical Report), *Pure and Applied Chemistry*, 87(9–10), pp. 1051–1069.

le Van, K. and Luong Thi, T.T. 2014 Activated Carbon Derived from Rice Husk by NaOH Activation and Its Application in Supercapacitor, *Progress in Natural Science: Materials International*, 24(3), pp. 191–198.

Vernon-Parry, K.D. 2000 *Scanning Electron Microscopy: an introduction*.

Wang, G., Zhang, L. and Zhang, J. 2012a A Review of Electrode Materials for Electrochemical Supercapacitors, *Chem Soc Rev*, 41(2), pp. 797–828.

Wang, G., Zhang, L. and Zhang, J. 2012b A Review of Electrode Materials for Electrochemical Supercapacitors, *Chem Soc Rev*, 41(2), pp. 797–828.

Wang, H. and Pilon, L. 2012 Physical Interpretation of Cyclic Voltammetry for Measuring Electric Double Layer Capacitances, *Electrochim Acta*, 64, pp. 130–139.

Wang, Y., Zhang, L., Hou, H., Xu, W., Duan, G., He, S., Liu, K. and Jiang, S. 2021 Recent Progress in Carbon-Based Materials for Supercapacitor Electrodes: A Review, *J Mater Sci*. Springer, pp. 173–200.

Xu, B., Wu, F., Chen, S., Zhou, Z., Cao, G. and Yang, Y. 2009 High-Capacitance Carbon Electrode Prepared by PVDC Carbonization for Aqueous EDLCs, *Electrochim Acta*, 54(8), pp. 2185–2189.

Zhang, L. and Zhao, X.S. 2009 Carbon-Based Materials as Supercapacitor Electrodes, *Chem Soc Rev*, 38(9), pp. 2520–2531.

Zhang, L.L., Gu, Y. and Zhao, X.S. 2013 Advanced Porous Carbon Electrodes for Electrochemical Capacitors, *J Mater Chem A Mater*, 1(33), pp. 9395–9408.

Zhang, S.S., Xu, K. and Jow, T.R. 2002 *A new approach toward improved low temperature performance of Li-ion battery*.

Zhang, Z.J., Dong, C., Ding, X.Y. and Xia, Y.K. 2015 A Generalized ZnCl2 Activation Method to Produce Nitrogen-Containing Nanoporous Carbon

Materials for Supercapacitor Applications, *J Alloys Compd*, 636, pp. 275–281.

Zhou, M., Pu, F., Wang, Z. and Guan, S. 2014 Nitrogen-Doped Porous Carbons through KOH Activation with Superior Performance in Supercapacitors, *Carbon N Y*, 68, pp. 185–194.

Zhou, W., Apkarian, R.P., Lin Wang, Z. and Joy, D. 2006 *Fundamentals of Scanning Electron Microscopy*.

Zuliani, J.E., Caguiat, J.N., Kirk, D.W. and Jia, C.Q. 2015 Considerations for Consistent Characterization of Electrochemical Double-Layer Capacitor Performance, *J Power Sources*, 290, pp. 136–143.