

DAFTAR PUSTAKA

- An, K. H., Kim, W. S., Park, Y. S., Choi, Y. C., Lee, S. M., Chung, D. C., Bae, D. J., Lim, S. C., & Lee, Y. H. (2001). Supercapacitors Using Single-Walled Carbon Nanotube Electrodes. *Advanced Materials*, 13(7), 497–500. [https://doi.org/10.1002/1521-4095\(200104\)13:7<497::aid-adma497>3.3.co;2-8](https://doi.org/10.1002/1521-4095(200104)13:7<497::aid-adma497>3.3.co;2-8)
- Ariyanto, T. (2016). Methods for spatial control of pore size and microstructure in porous carbons Methoden zur ortsabhängigen Kontrolle der Porengröße und Mikrostruktur in porösen Kohlenstoffen. *Methods for Spatial Control of Pore Size and Microstructure in Porous Carbons Methoden Zur Ortsabhängigen Kontrolle Der Porengröße Und Mikrostruktur in Porösen Kohlenstoffen*.
- Astuti, W. (2018). Adsorpsi Menggunakan Material Berbasis Lignoselulosa. In *Unnes Press*. Unnes Press.
- Athab, Z. H., Halbus, A. F., & Greenway, G. M. (2021). A simple method for the synthesis of high surface area mesoporous carbon monolith via soft template technique. *Egyptian Journal of Chemistry*, 64(10), 5793–5801. <https://doi.org/10.21608/ejchem.2021.73326.3629>
- Ayala, P., Arenal, R., Rummeli, M., Rubio, A., & Pichler, T. (2010). The doping of carbon nanotubes with nitrogen and their potential applications. *Carbon*, 48(3), 575–586. <https://doi.org/10.1016/j.carbon.2009.10.009>
- Bard, A. J., & Faulkner, L. R. (2001). Double-Layer Structure and Adsorption. In *Electrochemical Methods - Fundamentals and Applications*.
- Beck, J. S., Vartuli, J. C., Roth, W. J., Leonowicz, M. E., Kresge, C. T., Schmitt, K. D., Chu, C. T. W., Olson, D. H., Sheppard, E. W., McCullen, S. B., Higgins, J. B., & Schlenker, J. L. (1992). A New Family of Mesoporous Molecular Sieves Prepared with Liquid Crystal Templates. *Journal of the American Chemical Society*, 114(27), 10834–10843. <https://doi.org/10.1021/ja00053a020>
- Bhadra, J., Alkareem, A., & Al-Thani, N. (2020). A review of advances in the preparation and application of polyaniline based thermoset blends and composites. *Journal of Polymer Research*, 27(5). <https://doi.org/10.1007/s10965-020-02052-1>
- Blomgren, G. E. (2017). The Development and Future of Lithium Ion Batteries. *Journal of The Electrochemical Society*, 164(1), A5019–A5025. <https://doi.org/10.1149/2.0251701jes>
- Boeva, Z. A., & Sergeyev, V. G. (2014). Polyaniline: Synthesis, properties, and

- application. *Polymer Science - Series C*, 56(1), 144–153.
<https://doi.org/10.1134/S1811238214010032>
- Chan, C., & Crozier, P. (2013). *Synthesis and electrochemical characterization of silicon clathrates as anode materials for lithium ion batteries*. November.
- Çolak, N., & Sükmen, B. (2000). Doping of chemically synthesized polyaniline. *Designed Monomers and Polymers*, 3(2), 181–189.
<https://doi.org/10.1163/156855500300142870>
- Colvin, E. W. (1981). The β -effect. *Silicon in Organic Synthesis*, 111(Vsg 83), 15–20.
<https://doi.org/10.1016/b978-0-408-10831-7.50009-3>
- Crabtree, G., Kócs, E., & Trahey, L. (2015). The energy-storage frontier: Lithium-ion batteries and beyond. *MRS Bulletin*, 40(12), 1067–1076.
<https://doi.org/10.1557/mrs.2015.259>
- Destyorini, F. (2010). PENGARUH SUHU KARBONISASI TERHADAP STRUKTUR DAN KONDUKTIVITAS LISTRIK ARANG SERABUT KELAPA. *Jurnal Himpunan Fisika Indonesia*, 10(242), 122–132.
<https://www.neliti.com/id/publications/78730/pengaruh-suhu-karbonisasi-terhadap-struktur-dan-konduktivitas-listrik-arang-sera#cite>
- Donohue, M. D., & Aranovich, G. L. (1998). Classification of Gibbs adsorption isotherms. *Advances in Colloid and Interface Science*, 76–77(July 1998), 137–152.
[https://doi.org/10.1016/S0001-8686\(98\)00044-X](https://doi.org/10.1016/S0001-8686(98)00044-X)
- Eftekhari, A., Li, L., & Yang, Y. (2017). Polyaniline supercapacitors. *Journal of Power Sources*, 347, 86–107. <https://doi.org/10.1016/j.jpowsour.2017.02.054>
- Fattori, V., Geri, A., Zottib, G., & Gallazzi, M. C. (1999). *Synthetic Metals 101* (1999) 182–183. 101, 182–183.
- Fernández, J. A., Arulepp, M., Leis, J., Stoeckli, F., & Centeno, T. A. (2008). EDLC performance of carbide-derived carbons in aprotic and acidic electrolytes. *Electrochimica Acta*, 53(24), 7111–7116.
<https://doi.org/10.1016/j.electacta.2008.05.028>
- Freed W. Billmeyer, J. (1984). Textbook of Polymer Science third edition. In *Kobunshi* (Vol. 12, Issue 3). <https://doi.org/10.1002/pol.1972.110100721>
- Gao, X. (2011). *Development of new electrode materials for lithium battery*.
- Goonetilleke, D., Pramudita, J. C., Choucair, M., Rawal, A., & Sharma, N. (2016). Sodium insertion/extraction from single-walled and multi-walled carbon nanotubes: The differences and similarities. *Journal of Power Sources*, 314, 102–108.

<https://doi.org/10.1016/j.jpowsour.2016.03.014>

- Grugeon, S., Laruelle, S., Herrera-Urbina, R., Dupont, L., Poizot, P., & Tarascon, J.-M. (2001). Particle Size Effects on the Electrochemical Performance of Copper Oxides toward Lithium. *Journal of The Electrochemical Society*, 148(4), A285. <https://doi.org/10.1149/1.1353566>
- Hammo, S. M. (2012). Effect of Acidic Dopants properties on the Electrical Conductivity of Poly aniline. *Tikrit Journal of Pure Science*, 17(2), 2012. <https://www.iasj.net/iasj?func=fulltext&aId=62093>
- Haq, O. ul, Choi, J. H., & Lee, Y. S. (2020). Synthesis of ion-exchange polyaniline-carbon composite electrodes for capacitive deionization. *Desalination*, 479(November 2019), 114308. <https://doi.org/10.1016/j.desal.2019.114308>
- He, H. W., Pan, D. Y., Zhou, H. H., & Wang, X. (2014). Effect of pore structure of activated carbon on its electrochemical performance in non-aqueous electrolyte. *Advanced Materials Research*, 1004–1005, 596–601. <https://doi.org/10.4028/www.scientific.net/AMR.1004-1005.596>
- Holze, R. (2013). Jung-Ki Park: Principles and applications of lithium secondary batteries. *Journal of Solid State Electrochemistry*, 17(8), 2375–2376. <https://doi.org/10.1007/s10008-013-2094-3>
- Jabeen, N., Xia, Q., Yang, M., & Xia, H. (2016). Unique Core-Shell Nanorod Arrays with Polyaniline Deposited into Mesoporous NiCo₂O₄ Support for High-Performance Supercapacitor Electrodes. *ACS Applied Materials and Interfaces*, 8(9), 6093–6100. <https://doi.org/10.1021/acsami.6b00207>
- Jang, J. (2006). Emissive Materials Nanomaterials. *Advances in Polymer Science*, 199(1), 189–259. <http://www.scopus.com/inward/record.url?eid=2-s2.0-33745930174&partnerID=tZOtx3y1>
- Jelmy, E. J., Ramakrishnan, S., Rangarajan, M., & Kothurkar, N. K. (2013). Effect of different carbon fillers and dopant acids on electrical properties of polyaniline nanocomposites. *Bulletin of Materials Science*, 36(1), 37–44. <https://doi.org/10.1007/s12034-013-0438-3>
- Jin, Y., Meng, Y., Fan, W., Lu, H., Liu, T., & Wu, S. (2019). Free-standing macro-porous nitrogen doped graphene film for high energy density supercapacitor. *Electrochimica Acta*, 318, 865–874. <https://doi.org/10.1016/j.electacta.2019.06.107>
- Kierzek, K., Frackowiak, E., Lota, G., Gryglewicz, G., & Machnikowski, J. (2004). Electrochemical capacitors based on highly porous carbons prepared by KOH

- activation. *Electrochimica Acta*, 49(4), 515–523.
<https://doi.org/10.1016/j.electacta.2003.08.026>
- Kim, H., Choi, J., Sohn, H., & Kang, T. (1999). The Insertion Mechanism of Lithium into Mg₂Si Anode Material for Li-Ion Batteries. *Journal of The Electrochemical Society*, 146(12), 4401–4405. <https://doi.org/10.1149/1.1392650>
- Kim, J. W., Ryu, J. H., Lee, K. T., & Oh, S. M. (2005). Improvement of silicon powder negative electrodes by copper electroless deposition for lithium secondary batteries. *Journal of Power Sources*, 147(1–2), 227–233. <https://doi.org/10.1016/j.jpowsour.2004.12.041>
- Kong, D., Qin, C., Cao, L., Fang, Z., Lai, F., Lin, Z., Zhang, P., Li, W., & Lin, H. (2020). Synthesis of biomass-based porous carbon nanofibre/polyaniline composites for supercapacitor electrode materials. *International Journal of Electrochemical Science*, 15(1), 265–279. <https://doi.org/10.20964/2020.01.02>
- Lai, C., Zhang, H. Z., Li, G. R., & Gao, X. P. (2011). Mesoporous polyaniline/TiO₂ microspheres with core-shell structure as anode materials for lithium ion battery. *Journal of Power Sources*, 196(10), 4735–4740. <https://doi.org/10.1016/j.jpowsour.2011.01.077>
- Lebedeva, M. V., Ayupov, A. B., Yeletsky, P. M., & Parmon, V. N. (2018). Rice husk derived activated carbon/polyaniline composites as active materials for supercapacitors. *International Journal of Electrochemical Science*, 13(4), 3674–3690. <https://doi.org/10.20964/2018.04.34>
- Lebedeva, Marina V., & Gribov, E. N. (2020). Electrochemical behavior and structure evolution of polyaniline/carbon composites in ionic liquid electrolyte. *Journal of Solid State Electrochemistry*, 24(3), 739–751. <https://doi.org/10.1007/s10008-020-04516-2>
- Lee, J., Kim, J., & Hyeon, T. (2006). Recent progress in the synthesis of porous carbon materials. *Advanced Materials*, 18(16), 2073–2094. <https://doi.org/10.1002/adma.200501576>
- Li, F., Xie, L., Sun, G., Kong, Q., Su, F., Cao, Y., Wei, J., Ahmad, A., Guo, X., & Chen, C. M. (2019). Resorcinol-formaldehyde based carbon aerogel: Preparation, structure and applications in energy storage devices. *Microporous and Mesoporous Materials*, 279, 293–315. <https://doi.org/10.1016/j.micromeso.2018.12.007>
- Li, H., Shi, L., Lu, W., Huang, X., & Chen, L. (2001). Studies on Capacity Loss and Capacity Fading of Nanosized SnSb Alloy Anode for Li-Ion Batteries. *Journal of*

- Li, L., Wu, Z., Yuan, S., & Zhang, X. B. (2014). Advances and challenges for flexible energy storage and conversion devices and systems. *Energy and Environmental Science*, 7(7), 2101–2122. <https://doi.org/10.1039/c4ee00318g>
- Liang, C., Li, Z., & Dai, S. (2008). Mesoporous carbon materials: Synthesis and modification. *Angewandte Chemie - International Edition*, 47(20), 3696–3717. <https://doi.org/10.1002/anie.200702046>
- Liu, D., Shen, J., Li, Y. J., Liu, N. P., & Liu, B. (2012). Pore structures of carbon aerogels and their effects on electrochemical supercapacitor performance. *Wuli Huaxue Xuebao/ Acta Physico - Chimica Sinica*, 28(4), 843–849. <https://doi.org/10.3866/PKU.WHXB201202172>
- Liu, H. J., Cui, W. J., Jin, L. H., Wang, C. X., & Xia, Y. Y. (2009). Preparation of three-dimensional ordered mesoporous carbon sphere arrays by a two-step templating route and their application for supercapacitors. *Journal of Materials Chemistry*, 19(22), 3661–3667. <https://doi.org/10.1039/b819820a>
- liu, H., Shi, L., Han, P., Ullah, S., Yu, J., Yang, B., Li, C., Zhu, C., & Xu, J. (2018). Hierarchically porous carbon derived from waste acrylic fibers for super-high capacity lithium ion battery anodes. *Chemical Engineering Journal*, 346(January), 143–150. <https://doi.org/10.1016/j.cej.2018.04.048>
- Liu, J., Zhou, M., Fan, L. Z., Li, P., & Qu, X. (2010). Porous polyaniline exhibits highly enhanced electrochemical capacitance performance. *Electrochimica Acta*, 55(20), 5819–5822. <https://doi.org/10.1016/j.electacta.2010.05.030>
- Lozito, G. M., Lucaferri, V., Fulginei, F. R., & Salvini, A. (2020). Improvement of an equivalent circuit model for li-ion batteries operating at variable discharge conditions. *Electronics (Switzerland)*, 9(1). <https://doi.org/10.3390/electronics9010078>
- Lu, L., Han, X., Li, J., Hua, J., & Ouyang, M. (2013). A review on the key issues for lithium-ion battery management in electric vehicles. *Journal of Power Sources*, 226, 272–288. <https://doi.org/10.1016/j.jpowsour.2012.10.060>
- Luo, Y., Guo, R., Li, T., Li, F., Liu, Z., Zheng, M., Wang, B., Yang, Z., Luo, H., & Wan, Y. (2019). Application of Polyaniline for Li-Ion Batteries, Lithium–Sulfur Batteries, and Supercapacitors. *ChemSusChem*, 12(8), 1591–1611. <https://doi.org/10.1002/cssc.201802186>
- Lynd, L. R., Weimer, P. J., Zyl, W. H. Van, & Isak, S. (2002). Microbial Cellulose

- Utilization: Fundamentals and Biotechnology Microbial Cellulose Utilization: Fundamentals and Biotechnology Downloaded from <http://mmbr.asm.org/> on February 6, 2013 by INDIAN INSTITUTE OF TECHNOLOGY MADRAS. *Microbiology and Molecular Biology Reviews*, 66(3), 506–577. <https://doi.org/10.1128/MMBR.66.3.506>
- Ma, G., Huang, K., Zhuang, Q., & Ju, Z. (2016). Superior cycle stability of nitrogen-doped graphene nanosheets for Na-ion batteries. *Materials Letters*, 174, 221–225. <https://doi.org/10.1016/j.matlet.2016.03.111>
- MacDiarmid, A. G., Manohar, S. K., Masters, J. G., Sun, Y., Weiss, H., & Epstein, A. J. (1991). Polyaniline: Synthesis and properties of pernigraniline base. *Synthetic Metals*, 41(1–2), 621–626. [https://doi.org/10.1016/0379-6779\(91\)91145-Z](https://doi.org/10.1016/0379-6779(91)91145-Z)
- Maitra, J., & Shukla, V. K. (2014). Cross-linking in Hydrogels - A Review. *American Journal of Polymer Science*, 4(2), 25–31. <https://doi.org/10.5923/j.ajps.20140402.01>
- McEnaney, B. (1999). Carbon Materials for Advanced Technologies. In T. D. Burchell (Ed.), *Pergamon*. Elsevier. <https://doi.org/10.1016/b978-0-08-042683-9.50018-2>
- Md Zaini, M. S., & Hassan, S. S. A. S. (2018). Comparative Effects of Activation by CO₂, Steam and Their Sequential Combinations on the Pore Structure of Carbon Material Produced from ZnCl₂-Treated Oil Palm Kernel Shell. *Recent Innovations in Chemical Engineering (Formerly Recent Patents on Chemical Engineering)*, 11(April). <https://doi.org/10.2174/2405520411666180427112212>
- Meng, Q., Cai, K., Chen, Y., & Chen, L. (2017). Research progress on conducting polymer based supercapacitor electrode materials. *Nano Energy*, 36, 268–285. <https://doi.org/10.1016/j.nanoen.2017.04.040>
- Meng, Y., Gu, D., Zhang, F., Shi, Y., Cheng, L., Feng, D., Wu, Z., Chen, Z., Wan, Y., Stein, A., & Zhao, D. (2006). A family of highly ordered mesoporous polymer resin and carbon structures from organic-organic self-assembly. *Chemistry of Materials*, 18(18), 4447–4464. <https://doi.org/10.1021/cm060921u>
- Mitome, T., Hirota, Y., Uchida, Y., & Nishiyama, N. (2016a). Porous structure and pore size control of mesoporous carbons using a combination of a soft-templating method and a solvent evaporation technique. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 494, 180–185. <https://doi.org/10.1016/j.colsurfa.2016.01.009>
- Mitome, T., Hirota, Y., Uchida, Y., & Nishiyama, N. (2016b). Porous structure and pore size control of mesoporous carbons using a combination of a soft-templating method

- and a solvent evaporation technique. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 494, 180–185. <https://doi.org/10.1016/j.colsurfa.2016.01.009>
- Mizushima, K., Jones, P. C., Wiseman, P. J., & Goodenough, J. B. (1981). *LixCoO₂* (2. Solid State Ionics, 3–4, 171–174. <https://www.sciencedirect.com/science/article/pii/0167273881900771>
- Moriguchi, I., Ozono, A., Mikuriya, K., Teraoka, Y., Kagawa, S., & Kodama, M. (1999). Micelle-templated mesophases of phenol-formaldehyde polymer. In *Chemistry Letters* (Issue 11, pp. 1171–1172). <https://doi.org/10.1246/cl.1999.1171>
- Noked, M., Okashy, S., Zimrin, T., & Aurbach, D. (2012). Composite carbon nanotube/carbon electrodes for electrical double-layer super capacitors. *Angewandte Chemie - International Edition*, 51(7), 1568–1571. <https://doi.org/10.1002/anie.201104334>
- Nurlaili, E. (2009). *Analisis Sifat Konduktivitas Listrik Selulosa Mikrobial dari Limbah Tahu (whey) dengan Doping Kalium (K)*. 5.
- Palaniappan, S., & John, A. (2008). Polyaniline materials by emulsion polymerization pathway. *Progress in Polymer Science (Oxford)*, 33(7), 732–758. <https://doi.org/10.1016/j.progpolymsci.2008.02.002>
- Pean, C., Daffos, B., Rotenberg, B., Levitz, P., Haefele, M., Taberna, P. L., Simon, P., & Salanne, M. (2015). Confinement, Desolvation, and Electrosorption Effects on the Diffusion of Ions in Nanoporous Carbon Electrodes. *Journal of the American Chemical Society*, 137(39), 12627–12632. <https://doi.org/10.1021/jacs.5b07416>
- Pimphor, K., & Roddecha, S. (2021). The optimization and comparison of the electrochemical performances for the polyaniline and melamine doping onto activated porous carbon material derived from pineapple leaf fiber as anode material for lithium-ion batteries. *Materials Today: Proceedings*. <https://doi.org/10.1016/j.matpr.2021.04.259>
- Prasetyo, I., Rochmadi, Ariyanto, T., & Yunanto, R. (2013). Simple method to produce nanoporous carbon for various applications by pyrolysis of specially synthesized phenolic resin. *Indonesian Journal of Chemistry*, 13(2), 95–100. <https://doi.org/10.22146/ijc.21290>
- Qiao, S. Y., & Fan, L. Z. (2012). Ordered Macroporous Carbon/Polyaniline Nanocomposites as Electrode Materials for Supercapacitors. *Materials Science Forum*, 722, 25–30. <https://doi.org/10.4028/www.scientific.net/msf.722.25>
- Rae, E., & Kaffashi, B. (2018). Biodegradable polypropylene/thermoplastic starch

- nanocomposites incorporating halloysite nanotubes. *Journal of Applied Polymer Science*, 135(4), 1–12. <https://doi.org/10.1002/app.45740>
- Ramos, A., Cameán, I., Cuesta, N., Antuña, C., & García, A. B. (2016). Expanded graphitic materials prepared from micro- and nanometric precursors as anodes for sodium-ion batteries. *Electrochimica Acta*, 187, 496–507. <https://doi.org/10.1016/j.electacta.2015.11.078>
- Rawal, S., Mandal, U. K., Kumar, A., Kumar, Y., & Joshi, B. (2021). Enhanced electrochemical performance of hierarchical porous carbon/polyaniline composite for supercapacitor applications. *Nano Express*, 2(1), 010013. <https://doi.org/10.1088/2632-959x/abdd88>
- Reddy, M. V., Subba Rao, G. V., & Chowdari, B. V. R. (2013). Metal oxides and oxysalts as anode materials for Li ion batteries. *Chemical Reviews*, 113(7), 5364–5457. <https://doi.org/10.1021/cr3001884>
- Scrosati, B., & Garche, J. (2010). Lithium batteries: Status, prospects and future. *Journal of Power Sources*, 195(9), 2419–2430. <https://doi.org/10.1016/j.jpowsour.2009.11.048>
- SHIMADZU. (n.d.). *Rechargeable Lithium-ion Battery Evaluation*.
- Singh, P., & Pal, K. (2020). Activated carbon-Polyaniline composite active material slurry electrode for high capacitance, improved rheological performance electrochemical flow capacitor. *Electrochimica Acta*, 354, 136719. <https://doi.org/10.1016/j.electacta.2020.136719>
- Stejskal, J., & Gilbert, R. G. (2002). Polyaniline. Preparation of a conducting polymer (IUPAC technical report). *Pure and Applied Chemistry*, 74(5), 857–867. <https://doi.org/10.1351/pac200274050857>
- Stejskal, Jaroslav, Hlavatá, D., Holler, P., Trchová, M., Prokeš, J., & Sapurina, I. (2004). Polyaniline prepared in the presence of various acids: A conductivity study. *Polymer International*, 53(3), 294–300. <https://doi.org/10.1002/pi.1406>
- Stejskal, Jaroslav, Omastová, M., Fedorova, S., Prokeš, J., & Trchová, M. (2003). Polyaniline and polypyrrole prepared in the presence of surfactants: A comparative conductivity study. *Polymer*, 44(5), 1353–1358. [https://doi.org/10.1016/S0032-3861\(02\)00906-0](https://doi.org/10.1016/S0032-3861(02)00906-0)
- Susilowati, Munandar, S., & Edahwati, L. (2013). Pemanfaatan Lignin dari Limbah Kulit Buah Kakao Menjadi Perekat. *Jurnal Teknik Kimia*, 8(1), 22–26. <https://doi.org/https://doi.org/10.33536/jcpe.v2i2.164>

- Tanaka, S., Nishiyama, N., Egashira, Y., & Ueyama, K. (2005). Synthesis of ordered mesoporous carbons with channel structure from an organic-organic nanocomposite. *Chemical Communications*, 16, 2125–2127. <https://doi.org/10.1039/b501259g>
- Tarascon, J. M., & Armand, M. (2001). Issues and challenges facing rechargeable lithium batteries. *Nature*, 414(6861), 359–367. <https://doi.org/10.1038/35104644>
- Ternero, F., Rosa, L. G., Urban, P., Montes, J. M., & Cuevas, F. G. (2021). Influence of the total porosity on the properties of sintered materials—a review. *Metals*, 11(5). <https://doi.org/10.3390/met11050730>
- Vix-Guterl, C., Frackowiak, E., Jurewicz, K., Friebe, M., Parmentier, J., & Béguin, F. (2005). Electrochemical energy storage in ordered porous carbon materials. *Carbon*, 43(6), 1293–1302. <https://doi.org/10.1016/j.carbon.2004.12.028>
- Wang, Di, Wang, X., Yang, X., Yu, R., Ge, L., & Shu, H. (2015). Polyaniline modification and performance enhancement of lithium-rich cathode material based on layered-spinel hybrid structure. *Journal of Power Sources*, 293, 89–94. <https://doi.org/10.1016/j.jpowsour.2015.05.058>
- Wang, Donghai, Choi, D., Li, J., Yang, Z., Nie, Z., Kou, R., Hu, D., Wang, C., Saraf, L. V, Zhang, J., Aksay, I. A., & Liu, J. (2009). *Self-Assembled TiO₂ – Graphene Hybrid Insertion*. 3(4), 907–914.
- Wang, G., Wang, B., Park, J., Wang, Y., Sun, B., & Yao, J. (2009). Highly efficient and large-scale synthesis of graphene by electrolytic exfoliation. *Carbon*, 47(14), 3242–3246. <https://doi.org/10.1016/j.carbon.2009.07.040>
- Wang, X., Liu, D., Deng, J., Duan, X., Guo, J., & Liu, P. (2015). Improving cyclic stability of polyaniline by thermal crosslinking as electrode material for supercapacitors. *RSC Advances*, 5(96), 78545–78552. <https://doi.org/10.1039/c5ra17327b>
- Weydanz, W. J., Wohlfahrt-Mehrens, M., & Huggins, R. A. (1999). A room temperature study of the binary lithium-silicon and the ternary lithium-chromium-silicon system for use in rechargeable lithium batteries. *Journal of Power Sources*, 81–82, 237–242. [https://doi.org/10.1016/S0378-7753\(99\)00139-1](https://doi.org/10.1016/S0378-7753(99)00139-1)
- Winter, M., Besenhard, J. O., Spahr, M. E., & Novák, P. (1998). Insertion electrode materials for rechargeable lithium batteries. *Advanced Materials*, 10(10), 725–763. [https://doi.org/10.1002/\(SICI\)1521-4095\(199807\)10:10<725::AID-ADMA725>3.0.CO;2-Z](https://doi.org/10.1002/(SICI)1521-4095(199807)10:10<725::AID-ADMA725>3.0.CO;2-Z)
- Xiang, X., Huang, Z., Liu, E., Shen, H., Tian, Y., Xie, H., Wu, Y., & Wu, Z. (2011).

- Lithium storage performance of carbon nanotubes prepared from polyaniline for lithium-ion batteries. *Electrochimica Acta*, 56(25), 9350–9356. <https://doi.org/10.1016/j.electacta.2011.08.014>
- Xu, H., Zhang, J., Chen, Y., Lu, H., & Zhuang, J. (2014). Electrochemical polymerization of polyaniline doped with Cu²⁺ as the electrode material for electrochemical supercapacitors. *RSC Advances*, 4(11), 5547–5552. <https://doi.org/10.1039/c3ra45794j>
- Xu, Y., Ye, J., Zhou, D., & Su, L. (2020). Research progress on applications of calcium derived from marine organisms. *Scientific Reports*, 10(1), 1–8. <https://doi.org/10.1038/s41598-020-75575-8>
- Yan, J., Wang, Q., Wei, T., & Fan, Z. (2014). Recent advances in design and fabrication of electrochemical supercapacitors with high energy densities. *Advanced Energy Materials*, 4(4). <https://doi.org/10.1002/aenm.201300816>
- Yang, K. L., Yiacoumi, S., & Tsouris, C. (2003). Electrosorption capacitance of nanostructured carbon aerogel obtained by cyclic voltammetry. *Journal of Electroanalytical Chemistry*, 540(2003), 159–167. [https://doi.org/10.1016/S0022-0728\(02\)01308-6](https://doi.org/10.1016/S0022-0728(02)01308-6)
- Yang, L., Li, Q., Wang, Y., Chen, Y., Guo, X., Wu, Z., Chen, G., Zhong, B., Xiang, W., & Zhong, Y. (2020). A review of cathode materials in lithium-sulfur batteries. *Ionics*, 26(11), 5299–5318. <https://doi.org/10.1007/s11581-020-03767-3>
- Yang, Y., Chiang, K., & Burke, N. (2011). Porous carbon-supported catalysts for energy and environmental applications: A short review. *Catalysis Today*, 178(1), 197–205. <https://doi.org/10.1016/j.cattod.2011.08.028>
- Yazami, R., & Touzain, P. (1983). A reversible graphite-lithium negative electrode for electrochemical generators. *Journal of Power Sources*, 9(3), 365–371. [https://doi.org/10.1016/0378-7753\(83\)87040-2](https://doi.org/10.1016/0378-7753(83)87040-2)
- Ye, D. (2019). *Florida State University Libraries The Study of Prelithiation Strategy for Graphite / Span Li-Ion Battery*.
- Yellappa, M., Annie Modestra, J., Rami Reddy, Y. V., & Venkata Mohan, S. (2021). Functionalized conductive activated carbon-polyaniline composite anode for augmented energy recovery in microbial fuel cells. In *Bioresource Technology* (Vol. 320). Elsevier Ltd. <https://doi.org/10.1016/j.biortech.2020.124340>
- Yuningsih, L. M., Mulyadi, D., & Jaka, A. K. (2016). *Dan Tempurung Terhadap Nilai Konduktifitas*. 6(2), 531–536.

- Zhang, S. S., Jow, T. R., Amine, K., & Henriksen, G. L. (2002). LiPF₆-EC-EMC electrolyte for Li-ion battery. *Journal of Power Sources*, 107(1), 18–23. [https://doi.org/10.1016/S0378-7753\(01\)00968-5](https://doi.org/10.1016/S0378-7753(01)00968-5)
- Zhang, Y., Zhang, J. M., Hua, Q., Zhao, Y., Yin, H., Yuan, J., Dai, Z., Zheng, L., & Tang, J. (2019). Synergistically reinforced capacitive performance from a hierarchically structured composite of polyaniline and cellulose-derived highly porous carbons. *Materials Letters*, 244, 62–65. <https://doi.org/10.1016/j.matlet.2019.02.045>
- Zhou, J., Chen, Y., Li, H., Dugnani, R., Du, Q., UrRehman, H., Kang, H., & Liu, H. (2018). Facile synthesis of three-dimensional lightweight nitrogen-doped graphene aerogel with excellent electromagnetic wave absorption properties. *Journal of Materials Science*, 53(6), 4067–4077. <https://doi.org/10.1007/s10853-017-1838-3>
- Zhou, N., Wang, N., Wu, Z., & Li, L. (2018). Probing active sites on metal-free, nitrogen-doped carbons for oxygen electroreduction: A review. *Catalysts*, 8(11). <https://doi.org/10.3390/catal8110509>