

DAFTAR PUSTAKA

- Arya, A., and Sharma, A. L., 2018, Structural, microstructural and electrochemical properties of dispersed type polymer nanocomposite films, *Polym. Compos.*, 40(S2), E1279–E1289.
- Borenstein, A., Hanna, O., Attias, R., Luski, S., Broussem T., and Aurbach, D., 2017, Carbon-based composite materials for supercapacitor electrodes: a review, *J. Mater. Chem. A*, 5, 12653-12672.
- Cao, Y., Mohamed, N. H., Ali, S. S., Azab, M. S., El-Khawaga, A. M., and El-Shaer, A., 2021, Green synthesis of bimetallic ZnO–CuO nanoparticles and their cytotoxicity properties, *Sci. Rep.*, 11(1), 23479.
- Dahlan, D., Leng, T. S., and Aziz, H., 2016, Dye Sensitized Solar Cells (DSSC) dengan Sensitiser Dye Alami Daun Pandan, Akar Kunyit dan Biji Beras Merah (*Black Rice*), *J. Ilmu Fis.*, 8(1), 1-8.
- El-Araby, A., Janati, W., Ullah, R., Ercisli, S., and Errachidi, F., 2024, Chitosan, chitosan derivatives, and chitosan-based nanocomposites: eco-friendly materials for advanced applications (a review), *Front. Chem.*, 11, 1327426.
- 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.*, 2(95), 197–206.
- El-Khawaga, A. M., Khafaga, D. S. R., Fahim, Y. A., and Fadl, A. M., 2025, Harnessing copper oxide nanoparticles for advanced photocatalytic, antimicrobial, and larvicidal applications, *Sci. Rep.*, 15(1), 40369.
- Farhana, N. K., Omar, F. S., Mohamad Saidi, N., Ling, G. Z., Bashir, S., Subramaniam, R., Kasi, R., Iqbal, J., Wageh, S., Algarni, H., and Al-Sehemi, A. G., 2022, Modification of DSSC Based on Polymer Composite Gel Electrolyte with Copper Oxide Nanochain by Shape Effect, *Polymers*, 14(16), 3426.
- Farhana, N. K., Goh, Z. L., Mohamad Saidi, N., Omar, F. S., Bashir, S., Ramesh, S., and Ramesh, K., 2024, Sonochemically tailored copper oxide as *nanofiller* in terpolymer composite gel electrolytes for dye-sensitized solar cells *Materials Today Communications*, 38, 107966.
- Green, M. A., Dunlop, E. D., Hohl-Ebinger, J., Yoshita, M., Kopidakis, N., and Ho-Baillie, A. W. Y., 2020, Solar cell efficiency tables, *Prog. Photovoltaics Res. Appl.*, 28(1), 3–15.
- Kannan, K., Radhika, D., Sadasivuni, K. K., Reddy, K. R., and Raghu, A. V., 2019, Nanostructured metal oxides and their applications in dye-sensitized solar cells, *J. Alloys Compd.*, 780, 244–266.
- Karthik, K., Jaya, N. V., Kanagaraj, M., and Arumugam, S., 2011, Temperature-dependent magnetic anomalies of CuO nanoparticles, *Solid State Commun.*, 151, 564–568.

- Khan, R., Vaseem, M., Jang, L. W., Yun, J. H., Hahn, Y. B., and Lee, I. H., 2014, Low temperature preparation of CuO nanospheres and urchin-shaped structures via hydrothermal route. *J. Alloys Compd.*, 609, 211–214.
- Khan, A., Khan, M., Khan, M. A., and Cho, M. H., 2020, Structural and optical properties of copper oxide (CuO) nanostructures and their applications: A review, *Materials Science in Semiconductor Processing*, 107, 104840.
- Kumar, H., and Rani, R., 2006, Antibacterial Study of Copper Oxide Nanoparticles Synthesized by Microemulsion, *J. Raman Spectrosc.*, 36, 562–574.
- Lee, H.F., Kai, J.J., Liu, P.C., Chang, W.C., Ouyang, F.Y., and Chan, H.T., 2012, A Comparative Study of Charge Transport In Quasi-Solid State Dye-Sensitized Solar Cells Using Polymer or Nanocomposite Gel Electrolytes, *J. Electroanal. Chem.*, 687, 45–50.
- Lin, F.S., Sakthivel, M., Fan, M.S., Lin, J.J., Jeng, R.J., and Ho, K.C., 2021, A Novel Multifunctional Polymer Ionic Liquid as An Additive In Iodide Electrolyte Combined with Silver Mirror Coating Counter Electrodes for Quasi-Solid-State Dye-Sensitized Solar Cells, *J. Mater. Chem. A*, 9, 4907–4921.
- Liu, X., Wang, W., Zhang, J., and Li, Y., 2017, Morphology-dependent properties of CuO nanostructures and their application in energy devices, *Electrochim. Acta*, 246, 842–850.
- Luna, I. Z., Hilary, L. N., Chowdhury, A. M. S., Gafur, M. A., Khan, N., and Khan, R. A., 2015, Preparation and characterization of copper oxide nanoparticles synthesized via chemical precipitation method, *OALib J.*, 2(3), 1–8.
- Markova, D. I., 2010, Infrared Spectroscopy Investigation of Metallic Nanoparticles Based on Copper, Cobalt, and Nickel Synthesized through Borohydride Reduction Method, *J. Univ. Chem. Technol. Metal.*, 45, 351–378.
- Navathe, G. J., Patil, D. S., Jadhav, P. R., Awale, D. V., Teli, A. M., Bhise, S. C., Kolekar, S. S., Karanjkar, M. M., Kim, J. H., and Patil, P. S., 2015, Rapid synthesis of nanostructured copper oxide for electrochemical supercapacitor based on novel [HPMIM][Cl] ionic liquid, *J. Electroanal. Chem.*, 738, 170–175.
- Ogawa, S., Yoshida, T., Kuwahara, S., and Watanabe, M., 2004, Gel polymer electrolytes based on iodide/triiodide redox couples for dye-sensitized solar cells, *Electrochimica Acta*, 49(28), 4581–4587.
- O'Regan, B., and Grätzel, M., 1991, A low-cost, high-efficiency solar cell based on dye-sensitized colloidal TiO₂ films, *Nature*, 353(6346), 737–740.
- Pathak, S. K., Abate, A., Ruckdeschel, P., Roose, B., Gödel, K. C., Vaynzof, Y., and Steiner, U., 2019, Perovskite-dye-sensitized solar cells: Mechanisms and materials, *J. Photochem. Photobiol. C.*, 39, 33–60.

- Pullanjiot, N. and Swaminathan, S., 2019, Enhanced Electrochemical Properties of Metal Oxide Interspersed Polymer Gel Electrolyte for QSDSSC Application,. *Solar Energy*, 186, 37-45.
- Reddy, K. R., Karthik, K. V., Prasad, S. B. B., Soni, S. K., Jeong, H. M., and Raghu, A. V. 2019, Polymeric gel electrolytes for dye-sensitized solar cells: A review, *J. Power Sources*, 435, 226799.
- Rouquerol, J., Llewellyn, P., and Rouquerol, F., 2014, Is the BET equation applicable to microporous adsorbents, *Stud. Surf. Sci. Catal.*, 160, 49–56.
- Shafa, A. V. A., Suci, A. A. E., Kartini, I., and Hatmanto, A. D., 2025, Enhanced electrochemical properties of ZnO nanoparticles-incorporated chitosan-based electrolyte as candidates for redox mediator in dye sensitized solar cells, *Pure Appl. Chem.*, 1-13.
- Sharma, K., Sharma, V., and Sharma, S. S., 2018, Dye-Sensitized Solar Cells: Fundamentals and Current Status, *Nanoscale Res. Lett.*, 381(13), 1–46.
- Shih, C.-M., Wu, Y.-L., Wang, Y.-C., Kumar, S. R., Tung, Y.-L., Yang, C.-C., and Lue, S. J., 2018, Ionic transport and interfacial interaction of iodide/iodine redox mechanism in agarose electrolyte containing colloidal titanium dioxide nanoparticles, *J. Photochem. Photobiol. A Chem.*, 356, 565–572.
- Solikah, S., Hidayat, A., Suyanta, S., and Hatmanto, A. D., 2024, Crystalline phase dependence of the electrochemical properties of chitosan/polyaniline/TiO₂-KI/I₂ quasi solid polymer electrolyte, *Mater. Sci. Eng. B*, 307, 117531.
- Su'ait, M. S., Ahmad, A., Hamzah, H., and Rahman, M. Y. A., 2015, A review on polymer electrolytes for DSSC applications. *Sol. Energy*, 115, 452-470.
- Subodro, R., and Sunaryo, S., 2013, Ekstraksi Pewarna Bahan Antosianin Kulit Terong Ungu Sebagai Pewarna Alami pada Sel Surya Dye Sensitized Solar Cell (DSSC), *Maj. Online Politeknosains*, 11(2), 74-83.
- Sundari, C. D. D., Rahayu, R. F., and Windayani, N., 2018, Sintesis dan Karakterisasi Nanostruktur Tembaga Oksida dengan Metode Hidrotermal, *Al-Kimiya*, 5(1), 48-51.
- Sutar, P., and Sutar, B., 2012, Kinetics of deacetylation of chitin to chitosan in alkaline medium, *Carbohydr. Polym.*, 87(1), 995–1001.
- Thommes, M., Kaneko, K., Neimark, A. V., Olivier, J. P., Rodriguez-Reinoso, F., Rouquerol, J., and Sing, K. S. W., 2015, Physisorption of gases (IUPAC Technical Report), *Pure Appl. Chem.*, 87(9–10), 1051–1069.
- Vallejo, W., Lerma, M., and Díaz-Urbe, C., 2025, Dye Sensitized Solar Cells: Meta-Analysis of Effect Sensitizer-Type on Photovoltaic Efficiency, *Heliyon*, 11(1), e40369.
- Xiao, H. M., Zhu, L. P., Liu, X. M., and Fu, S. Y., 2007, Anomalous ferromagnetic behavior of CuO nanorods synthesized via hydrothermal method, *Solid State Commun.*, 141, 431–435.

- Ye, M., Wen, X., Wang, M., Iocozzia, J., Zhang, N., Lin, C., and Lin, Z., 2015, Recent advances in dye-sensitized solar cells, *Mater. Today*, 18(3), 155–162.
- Yusof, N. A., Arof, A. K., and Thomas, S., 2021, Polymer electrolytes with inorganic *fillers* for electrochemical devices, *Electrochim. Acta*, 368, 137570.
- Zhang, Y., Zhao, J., Du, X., Xue, S., Han, E., and Tang, Z., 2020, Synthesis and characterization of CuO nanostructures for gas sensors, *Nanomaterials*, 10(7), 1232.
- Zhu, X., Zhang, Y., Wang, H., and Li, J., 2021, Metal oxide nanoparticle incorporated polymer electrolytes for dye-sensitized solar cells, *Nanomaterials*, 11(6), 1495.
- Zulkifili, A. N. B., Kento, T., Daiki, M., and Fujiki, A., 2015, The basic research on the dye-sensitized solar cells (DSSC), *J. Clean Energy Technol.*, 3(5), 382-387.