

DAFTAR PUSTAKA

- Amao Y., Yamada Y., dan Aoki K., 2004, Preparation and properties of dye-sensitized solar cells using chlorophyll derivative immobilized TiO₂ film electrode, *J. Photochem. Photobiol. A*, 164, 47-51.
- Barbee, J., dan Kuznetsov, A. E., 2011, Revealing substituent effects on the electronic structure and planarity of Ni(II)-porphyrins, *Comput. Theo. Chem.*, 981, 73-85.
- Checcoli, P., Conte, G., Salvatori, S., Paolesse, R., Bolognesi, A., Berliocchi, M., Lugli, P., 2003, Tetra-phenyl porphyrin based thin film transistors, *Synthetic Metals*, 138(1-2), 261-266.
- Ditchfield, R., Hehre, W. J., dan Pople J. A., 1971, Self-Consistent MolecularOrbital Method IX. An Extended Gaussian Type Basis for MolecularOrbital Studies of Organic Compounds, *J. Chem. Phys.*, 54, 724-729.
- Enderlein, R., dan Horing, N. J. M., 1997, *Fundamentals of Semiconductors Physics and Device*, World Scientific, Singapura.
- Fischer, M. S., Templeton, D. H., Zalkin, A., dan Calvin, M., 1970, Structure and Chemistry Porphyrin. The Crystal and Molecular Structure of Monohydrated Dipyridinated Magnesium Phthalocyanin Complex, *J. Am. Chem. Soc.*, 93, 2622-2628.
- Gervaldo, M., Fungo, F., Durantini, E.N., Silber, J.J., Sereno, L., and Otero, L., 2005, Carboxyphenyl Metalloporphyrins as Photosensitizers of Semiconductor Film Electrodes: A Study of the Effect of Different Central Metals, *J. Phys. Chem. N.*, 109, 20953-20962.
- Hehre, W. J., Stewart, R. F., dan Pople, J. A., Self-Consistent Molecular-Orbital Method I. Use of Gaussian Expansion of Slater Type Atomic Orbitals, *J. Chem. Phys.*, 51, 2657-2665.
- Hohenberg, P., dan Kohn, W., 1964, Inhomogeneous Electron Gas, *Pys. Rev.*, 136, B864-B873.
- Horvath, O., Huszank, R., Valicsek, Z., dan Lendvay, G., 2006, Photophysics and photochemistry of kinetically labile, water-soluble porphyrin complexes, *Coor. Chem. Rev.*, 250, 1792-1803.
- Janghour, M., and Adineh, M., 2017, Color Optimization of Red Organic Light Emitting Diodes (OLEDs) through Dihydroxyphenyl-Substituted Zinc Porphyrins Emitters, *J. Photochem. Photobiol. A*, 341, 31-38.

- Kikuchi, R., 1954, Gaussian Function in Molecular Integrals, *J. Chem. Phys.*, 22, 148.
- Klingshirn, C, 2005, *Semiconductor Optics 2nd Edition*, Springer, New York
- Kohn, W., dan Sham, L. J., 1965, Self Consistent Equation Including Exchange and Correlation Effects, *Phys. Rev.*, 140, A1133-A1138.
- Krishnan, R., Binkley, J. S., Seeger, R., dan Pople J. A., Self-Consistent Molecular-Orbital Method XX. A Basis Set for Correlated Wave Function, *J. Chem. Phys.*, 72, 650-654.
- Lewars, E. G. 2011. *Computational Chemistry*, Springer, New York.
- Li, D., Zhang, H., dan Wang, Y., 2013, Four-coordinate organoboron compounds for organic light-emitting diodes (OLEDs), *Chem. Soc. Rev.* 42, 8416-8433.
- Milgrom, L. R., 1997, *An Introduction to The Chemistry of Porphyrin and Related Compounds*. Oxford University Press, New York.
- Mitchell, B. S., 2004, *An Introduction to Material Engineering and Science: For Chemicals and Material Engineers*, Wiley Interscience, New Jersey.
- Montes, V. A., Pérez-Bolívar, C., Agarwal, N., Shinar, J., & Anzenbacher, P. (2006). Molecular-Wire Behavior of OLED Materials: Exciton Dynamics in Multichromophoric Alq3-Oligofluorene-Pt(II)porphyrin Triads. *J. Am. Chem. Soc.*, 128(38), 12436–12438.
- Mulya, F., Santoso, G. A., Aziz, H.A., Pranowo, H.D. 2016, Design a Better Metalloporphyrin Semiconductor: A Theoretical Studies on the Effect of Substituents and Central Ions, *Am. J. Phys.*, 1755.
- Paul-Roth, C. O., Drouet S., Merhi, A., Williams, J. A. G., Gildea., L., F., Pearson, C., Petty, M. C., Synthesis of platinum complexes of fluoroenylsubstituted prophyrin used as phosphorescent dyes for solution processed organic light-emitting devices, *Tetrahedron*, 69, 9625-9632.
- Pople, J. A. dan Gordon, M., 1967, Molecular Orbital Theory of The Electronic Structure of Organic Compounds. I. Substituent Effects and Dipole Moment, *J. Am. Chem. Soc.* 89(17), 4253-4251.
- Pranowo, H. D. dan Hetadi, A., K., R., 2011, *Pengantar Kimia Komputasi*. Lubuk Agung, Bandung.
- Pranowo H. D., Mulya, F., Aziz, H.A., Santoso., G.A., 2018, Study of Substituen Effect on Properties of Platinum(II) Porphyrin Semiconductor Using Density Functional Theory. *Indones J. Chem.* 18(4), 742-748

- Sessler, J. N. dan Weghorn., S.J., 1997, *Expanded, Contracted, and Isomeric Porphyrins*, Elviesier Science Inc, New York.
- Shalabi, A. S., Assem. M. A., soliman, K. A., El Mahdy., A. M., dan Taha, H. O., 2014, Performance of metalloporphyrin malonic acid as dye-sensitized solar cells assessed by density functional theory, *Mat. Sci. Semicon, Proc.*, 26, 119-129.
- Slater, J. C., 1930, Atomic Shielding Constant, *Phys. Rev.*, 36, 57-64.
- Suyamto, 2008, *Fisika Bahan Listrik*, Pustaka Pelajar, Yogyakarta.
- Tai, C. K., Chuang, W. H., Wang, B. C., 2013, Substituted group and side chain effects for the porphyrin and Zinc(II)-porphyrin derivatives: A DFT and TD-DFT study, *J. Lumin.*, 142, 8-16.
- Wang, F., dan Landau, D. P., 2001, Efficient Multiple-range Random Walk Algorithm to Calculate the Density of States, *Phys. Rev. Lett.*, 86, 2050-2053.
- Wang, J., Liu, H., Li, H., dan Zou, C., 2010, Mesoporous TiO₂-xAy (A = N, S) as a visible-light-response photocatalyst, *Sol. State Sci.*, 12, 490-497
- Wang, X. F., Xiang, J., Wang, P., Koyama., Y., Yanagida., S., Wada Y., Hamada K., Sasaki S., Tamiaki H., 2005., Dye-sensitized solar cells using chlorophyll *a* derivative as the sensitizer and carotenoid having diferent conjugation length as redox spacers, *Chem. Phys. Lett.*, 408, 409-414. Yacobi, 2004).
- Yacobi, B. G., 2004, *Semiconductor Materials: An Introduction to Basic Principles*, Kluwer Academic Publishers, New York.
- Yamashita, Y. 2009, Organic semiconductors for organic field-effect transistors, *Sci. Technol. Ad. Mater.*, 10, 1-9.
- Zhang, M.J., Guo, Y.R., Fang, G.Z., Pan, Q.J., 2013, DFT/TD-DFT Studies on Structural and Spectroscopic Properties of Metalloporphyrin Complexes: A design of Ruthenium Porphyrin Photosensitizer, *Comput. Theor. Chem.*, 1019, 94–100.
- Zheng, W., 2008, UV-Visible, Fluoresence and EPR Properties of Porphyrins and Metalloporphyrins, *J. Dyes & Pigments.*, 77, 153-157.
- Zhou Y., Liang X., Dai Z., 2016, Porphyrin-loaded for Cancer Theranostitcs, *Nanoscale*, 8(25), 12394-12405.