

DAFTAR PUSTAKA

1. Gong J, Sumathy K, Qiao Q, Zhou Z. Review on dye-sensitized solar cells (DSSCs): Advanced techniques and research trends. *Renew Sustain Energy Reviews*. 2017.
2. Li Y, Liu J, Liu D, Li X, Xu Y. D-A- π -A based organic dyes for efficient DSSCs: A theoretical study on the role of π -spacer. *Computational Materials Science*. 2019.
3. Imelda I. Penggunaan Zat Warna Organik Untuk Meningkatkan Performa Peralatan Solar Cell Menggunakan Metoda Density Functional Theory (Dft). *Lantanida Journal*. 2017.
4. Caetano R, Lemos MA, Lemos F, Freire F. Modeling and control of an exothermal reaction. *Chemical Engineering Journal*. 2014.
5. Pramanik A, Sarkar S, Pal S, Sarkar P. Pentacene-fullerene bulk-heterojunction solar cell: A computational study. *Physics Letters Section A General At Solid State Physics*.
6. Zhou H, Ji JM, Kang SH, et al. Molecular design and synthesis of D- π -A structured porphyrin dyes with various acceptor units for dye-sensitized solar cells. *Journal Materials Chemistry C*. 2019.
7. Qian X, Wang X, Shao L, Li H, Yan R, Hou L. Molecular engineering of D-D- π -A type organic dyes incorporating indoloquinoxaline and phenothiazine for highly efficient dye-sensitized solar cells. *Journal Power Sources*. 2016.
8. Surawatanawong P, Wójcik AK, Kiatisevi S. Density functional study of mono-branched and di-branched di-anchoring triphenylamine cyanoacrylic dyes for dye-sensitized solar cells. *Journal Photochemistry and Photobiology A Chemistry*. 2013.
9. Sun ZZ, Li QS, Zhang M, Li ZS. Exploring the regeneration process of ruthenium(II) dyes by cobalt mediator in dye-sensitized solar cells from first-principle calculations. *Journal Power Sources*. 2015.
10. Fahyuan HD, Samsidar, Farid F, Heriyanti, Napitupulu S, Pakpahan S. Disain Prototipe Sel Surya Dssc (Dye Sensitized Solar Cell) Lapisan Grafit/Tio 2 Berbasis Dye Alami. *Journal Online Physics*. 2015.
11. Kumara MSW, Prajitno G. Studi Awal Fabrikasi Dye Sensitized Solar Cell (Dssc) Dengan Menggunakan Ekstraksi Daun Bayam (Amaranthus Hybridus L .) Dssc. *Jurnal Fisika Institut Teknologi Sepuluh November Surabaya*. 2012.
12. Asmara AP. Penentuan Metode Komputasi Untuk Analisis Hubungan Kuantitatif Struktur Dan Aktivitas Senyawa Turunan Triazolopiperazin Amida. *Journal Islam Science Technology*. 2015..
13. Pranowo HD. *Pengantar Kimia Komputasi*. Yogyakarta; 2016.
14. Pamungkas EB. Pengaruh Enkapsulasi Fe Dan Cu Pada BNNT Terhadap Parameter NMR Menggunakan DFT. *Indonesian Journal Chemical Science*. 2013.
15. Kabanda MM, Ebenso EE. Density functional theory and quantitative structure-activity relationship studies of some quinoxaline derivatives as potential

- corrosion inhibitors for copper in acidic medium. *International Journal Electrochemical Science*. 2012.
16. Imelda I. OPTIMALISASI STRUKTUR π -KONJUGASI PADA ZAT WARNA ORGANIK TIPE D- π -A. *Journal Research Education Chemistry*. 2020.
 17. Liang M, Chen J. Arylamine organic dyes for dye-sensitized solar cells. *Chemical Society Reviews*. 2013.
 18. He LJ, Chen J, Bai FQ, Jia R, Wang J, Zhang HX. Fine-tuning π -spacer for high efficiency performance DSSC: A theoretical exploration with D- π -A based organic dye. *Dye Pigment*. 2017.
 19. Imelda I. REKAYASA STRUKTUR AKSEPTOR PADA ZAT WARNA ORGANIK TIPE D- π -A DENGAN KERANGKA TIOFEN. *Journal Research Education Chemistry*. 2020.
 20. Wang C, Li J, Cai S, et al. Performance improvement of dye-sensitizing solar cell by semi-rigid triarylamine-based donors. *Dye Pigment*. 2012.
 21. Nadtochenko V, Denisov N, Gorenberg A, et al. Correlations for photocatalytic activity and spectral features of the absorption band edge of TiO₂ modified by thiourea. *Applied Catalysis Environmental*. 2009.
 22. Marinado T, Nonomura K, Nissfolk J, et al. How the nature of triphenylamine-polyene dyes in dye-sensitized solar cells affects the open-circuit voltage and electron lifetimes. *Langmuir*. 2010.
 23. Wang H, Liu Q, Liu D, Su R, Liu J, Li Y. Computational prediction of electronic and photovoltaic properties of anthracene-based organic dyes for dye-sensitized solar cells. *International Journal Photoenergy*. 2018.
 24. Imelda, Emriadi, Aziz H, Santoni A, Utami N. The modification of cyanidin based dyes to improve the performance of dye-sensitized solar cells (DSSCs). *Rasayan Journal Chemistry*. 2020.
 25. *IUPAC Compendium of Chemical Terminology*.; 2009.
 26. Li Y, Liu J, Liu D, Li X, Xu Y. D-A- π -A based organic dyes for efficient DSSCs: A theoretical study on the role of π -spacer. *Computational Materials Science*. 2019.
 27. Kroon R, Lenes M, Hummelen JC, Blom PWM, De Boer B. Small bandgap polymers for organic solar cells (polymer material development in the last 5 years). *Polymer Reviews*. 2008.
 28. Imelda, Emriadi, Aziz H, Santoni A, Ramadhan RG, Fitria RA. Theoretical Investigation of Aniline-Based Dyes to Improve The Efficiency of Solar Cells. *Int Journal Applied Chemistry*. 2020.
 29. Dutta R, Ahmed S, Kalita DJ. Theoretical design of new triphenylamine based dyes for the fabrication of DSSCs: A DFT/TD-DFT study. *Materials Today Communications*. 2020.
 30. Pratiwi D. Performance improvement of dye-sensitized solar cells (DSSC) by using dyes mixture from chlorophyll and anthocyanin, *Journal of Physics: Conference Series*.2017.

31. P. Senthilkumar a, C. Nithya b PMA. Quantum chemical investigations on the effect of dodecyloxy chromophore in 4-amino stilbene sensitizer for DSSCs. 2013.
32. Liu B, Li X, Liu M, et al. Photovoltaic performance of solid-state DSSCs sensitized with organic isophorone dyes: Effect of dye-loaded amount and dipole moment. *Dye Pigment*. 2012.
33. Hagfeldt A, Grätzel M. Molecular photovoltaics. *Accounts of Chemical Research*. 2000.
34. Nazeeruddin MK, Kay A, Rodicio I, et al. Conversion of Light to Electricity by cis-X₂Bis (2,2'-bipyridyl-4,4'-dicarboxylate) ruthenium (II) Charge-Transfer Sensitizers (X = Cl⁻, Br⁻, I⁻, CN⁻, and SCN⁻) on Nanocrystalline TiO₂ Electrodes. *Journal Americans Chemical Society*. 1993.
35. Estrella LL, Lee SH, Kim DH. New semi-rigid triphenylamine donor moiety for D- π -A sensitizer: Theoretical and experimental investigations for DSSCs. *Dye Pigment*. 2019.
36. I.N. Obotowo, I.B. Obot UJE. Organic sensitizers for dye-sensitized solar cell (DSSC): Properties from computation, progress and future perspectives; *Journal of Molecular Structure*. 2016.
37. Mohanty R, Jena S. MNDO study of some imidazole based biheterocycles: A rationalisation of central C - C bond length. *Indian Journal Chemistry -Section A*. 1994.
38. Park KH, Kim TY, Han S, et al. Light harvesting over a wide range of wavelength using natural dyes of gardenia and cochineal for dye-sensitized solar cells. *Spectrochimica Acta - Part A Molecular and Biomolecular Spectroscopy*. 2014.
39. Sanusi K, Fatomi NO, Borisade AO, Yilmaz Y, Ceylan Ü, Fashina A. An approximate procedure for profiling dye molecules with potentials as sensitizers in solar cell application: A DFT/TD-DFT approach. *Chemical Physics Letters*. 2019.
40. Dr. Firdaus MS. Modul Kimia Organik Fisik II. 2009.
41. Pamungkas G, Sanjaya IGM. Kajian Teoritis Untuk Menentukan Celah Energi Porfirin Terkonjugasi Logam Kalsium Menggunakan Teori Fungsional Kerapatan (DFT). *Unesa Journal Chemistry*. 2013.
42. Jamil M, Zhao H, Higgins JB, Tansu N. Influence of growth temperature and V/III ratio on the optical characteristics of narrow band gap (0.77 eV) InN grown on GaN/sapphire using pulsed MOVPE. *Journal of Crystal Growth*. 2008.