

DAFTAR PUSTAKA

1. Kolahalam LA, Kasi Viswanath I V., Diwakar BS, Govindh B, Reddy V, Murthy YLN. Review on nanomaterials: Synthesis and applications. *Mater Today Proc.* 2019;18:2182-2190.
2. Mochammad Zakki Fahmi AW. *KIMIA NANO: Konsep, Sejarah Dan Aplikasi Bagi Indonesia.* Airlangga University Press; 2021.
3. Khan MM, Adil SF, Al-Mayouf A. Metal oxides as photocatalysts. *J Saudi Chem Soc.* 2015;19(5):462-464.
4. Chakrabarti S, Dutta BK. Photocatalytic degradation of model textile dyes in wastewater using ZnO as semiconductor catalyst. *J Hazard Mater.* 2004;112(3):269-278.
5. Raizada P, Sudhaik A, Singh P. Photocatalytic water decontamination using graphene and ZnO coupled photocatalysts: A review. *Mater Sci Energy Technol.* 2019;2(3):509-525.
6. Shi LE, Li ZH, Zheng W, Zhao YF, Jin YF, Tang ZX. Synthesis, antibacterial activity, antibacterial mechanism and food applications of ZnO nanoparticles: A review. *Food Addit Contam - Part A Chem Anal Control Expo Risk Assess.* 2014;31(2):173-186.
7. Özgür Ü, Alivov YI, Liu C, et al. A comprehensive review of ZnO materials and devices. *J Appl Phys.* 2005;98(4):1-103.
8. Diantariani NP, Widihati IAG. FOTODEGRADASI FENOL MENGGUNAKAN KOMPOSIT Ag/ZnO YANG DISINTESIS DENGAN METODE KOPRESIPITASI. *J Kim.* Published online 2017:129.
9. Heidary M, Bostanabad SZ. The Anti-Mycobacterial Activity Of Ag , ZnO , And Ag-ZnO Nanoparticles Against MDR- And XDR- Mycobacterium tuberculosis. Published online 2019:3425-3435.
10. Shamsuzzaman, Mashrai A, Khanam H, Aljawfi RN. Biological synthesis of ZnO nanoparticles using *C. albicans* and studying their catalytic performance in the synthesis of steroidal pyrazolines. *Arab J Chem.* 2017;10:S1530-S1536.
11. Vidyasagar CC, Arthoba Naik Y. Surfactant (PEG 400) effects on crystallinity of ZnO nanoparticles. *Arab J Chem.* 2016;9(4):507-510.
12. Rilda Y, Safitri R, Agustien A, Nazir N, Syafiuddin A, Nur H. Enhancement of Antibacterial Capability of Cotton Textiles Coated with TiO₂-SiO₂/Chitosan Using Hydrophobization. *J Chinese Chem Soc.* 2017;64(11):1347-1353.
13. Li R, Xiao F, Amirkhanian S, You Z, Huang J. Developments of nano materials and technologies on asphalt materials – A review. *Constr Build Mater.* 2017;143:633-648.
14. Rastogi A, Zivcak M, Sytar O, et al. Impact of metal and metal oxide nanoparticles on plant: A critical review. *Front Chem.* 2017;5(October):1-16.
15. Hoshiyama N, H. A. Dabwan A, Katsumata H, Suzuki T, Furukawa M, Kaneco S. Enhanced Photocatalytic Degradation of Bisphenol A in Aqueous Solution by Ag-Doping ZnO. *Open J Inorg Non-metallic Mater.* 2016;06(03):13-17.
16. Robinson PR, Hsu CS. Introduction to petroleum technology. *Springer Handbooks.* 2017;PartF1:1-83.
17. Buşile M, Muşat V, Textor T, Mahltig B. Synthesis and characterization of antimicrobial textile finishing based on Ag:ZnO nanoparticles/chitosan biocomposites. *RSC Adv.* 2015;5(28):21562-21571.

18. Omanovi E, Badnjevi A, Kazlagi A, Hajlovac M. Nanocomposites : a brief review. Published online 2019.
19. Prof, Singh BP, Drexler KE. Top-Down and Bottom-Up Approaches for Synthesis of Nanomaterials. Published online 2004:6.
20. Abid N, Khan AM, Shujait S, et al. Synthesis of nanomaterials using various top-down and bottom-up approaches, influencing factors, advantages, and disadvantages: A review. *Adv Colloid Interface Sci.* 2022;300(December 2021):102597.
21. Kristian H. Sugiyarto dan Retno D. Suyanti. *Kimia Anorganik Logam*. Graha Ilmu; 2010.
22. Wang X. Preparation , synthesis and application of Sol-gel method University Tutor : Pr . Olivia GIANI Internship Tutor : Mme . WANG Zhen. 2020;(October).
23. Bokov D, Turki Jalil A, Chupradit S, et al. Nanomaterial by Sol-Gel Method: Synthesis and Application. *Adv Mater Sci Eng.* 2021;2021.
24. Liza YM, Yasin RC, Maidani SS, Zainul R. Gelation Sol-Gel Proses Densification Ageing Drying. *Pendidik FMIPA Univ Negeri Padang*. Published online 2018.
25. Yang G, Park SJ. Conventional and microwave hydrothermal synthesis and application of functional materials: A review. *Materials (Basel)*. 2019;12(7).
26. Gan YX, Jayatissa AH, Yu Z, Chen X, Li M. Hydrothermal Synthesis of Nanomaterials. *J Nanomater.* 2020;2020.
27. Trisnayanti NP. Metode sintesis nanopartikel. *Univ Indones.* 2020;(3):1-4.
28. Rahman A, Kumar S, Nawaz T. *Biosynthesis of Nanomaterials Using Algae*. Elsevier Inc.; 2019.
29. Singh P, Kim YJ, Zhang D, Yang DC. Biological Synthesis of Nanoparticles from Plants and Microorganisms. *Trends Biotechnol.* 2016;34(7):588-599.
30. Mohd Yusof H, Mohamad R, Zaidan UH, Abdul Rahman NA. Microbial synthesis of zinc oxide nanoparticles and their potential application as an antimicrobial agent and a feed supplement in animal industry: A review. *J Anim Sci Biotechnol.* 2019;10(1).
31. Liu Y, Zhang Q, Xu M, et al. Novel and efficient synthesis of Ag-ZnO nanoparticles for the sunlight-induced photocatalytic degradation. *Appl Surf Sci.* 2019;476(December 2018):632-640.
32. Hosseini SM, Sarsari IA, Kameli P, Salamati H. Effect of Ag doping on structural, optical, and photocatalytic properties of ZnO nanoparticles. *J Alloys Compd.* 2015;640(August):408-415.
33. Chamjangali MA, Boroumand S. Synthesis of flower-like Ag-ZnO nanostructure and its application in the photodegradation of methyl orange. *J Braz Chem Soc.* 2013;24(8):1329-1338.
34. Georgekutty R, Seery MK, Pillai SC. A highly efficient Ag-ZnO photocatalyst: Synthesis, properties, and mechanism. *J Phys Chem C.* 2008;112(35):13563-13570.
35. Prasetya1 YA, * KN, Hisbiyah2 A. AKTIVITAS ANTIBAKTERI DAN ANTIBIOFILM NANOKOMPOSIT SENG OKSIDA-PERAK (ZnO-Ag) DENGAN MINYAK CENGKEH TERHADAP *Pseudomonas aeruginosa*. *Bioteknologi BIOSAINS Indones.* 2021;8(September):196-207.
36. Rilda Y, Damara D, Syukri S, et al. *Pseudomonas aeruginosa* antibacterial textile cotton fiber construction based on ZnO–TiO₂ nanorods template. *Heliyon.* 2020;6(4).
37. Nur Hidayat. *Mikroorganisme Dan Pemanfaatannya*. Universitas Brawijaya Press;

- 2018.
38. Drasar BS. Medical microbiology—a guide to microbial infections, pathogenesis, immunity, laboratory diagnosis and control. *Trans R Soc Trop Med Hyg.* 2003;97(1):125.
 39. Hong L, Wang Z, Wei X, Shi J, Li C. Antibodies against polyethylene glycol in human blood: A literature review. *J Pharmacol Toxicol Methods.* 2020;102:106678.
 40. Majumdar R, Alexander KS, Riga AT. Physical characterization of polyethylene glycols by thermal analytical technique and the effect of humidity and molecular weight. *Pharmazie.* 2010;65(5):342-346.
 41. Zheng W, Ding R, Yan X, He G. PEG induced tunable morphology and band gap of ZnO. *Mater Lett.* 2017;201(April):85-88.
 42. Rilda Y, Rinaldi R, Syukri S, et al. Biosynthesis of Zinc Oxide (ZnO) Using the Biomass of *Aspergillus niger* to Impart Cotton Fabric with Antimicrobial Properties. *ChemistrySelect.* 2022;7(6).
 43. Duan J, Huang X, Wang E. PEG-assisted synthesis of ZnO nanotubes. *Mater Lett.* 2006;60(15):1918-1921.
 44. Kadam AN, Bhopate DP, Kondalkar V V., et al. Facile synthesis of Ag-ZnO core-shell nanostructures with enhanced photocatalytic activity. *J Ind Eng Chem.* 2018;61(May):78-86.
 45. Mustofa K, Aini N, Khalifah SN. Synthesis and Characterization Titanium Dioxide (TiO₂) Doped Vanadium(V) Using Solid State Method. *Alchemy.* 2015;4(1).
 46. Rajendran R, Mani A. Photocatalytic, antibacterial and anticancer activity of silver-doped zinc oxide nanoparticles. *J Saudi Chem Soc.* 2020;24(12):1010-1024.
 47. Sadhukhan P, Kundu M, Rana S, Kumar R, Das J, Sil PC. Microwave induced synthesis of ZnO nanorods and their efficacy as a drug carrier with profound anticancer and antibacterial properties. *Toxicol Reports.* 2019;6(December 2018):176-185.
 48. Ahmad KS, Jaffri SB. Phytosynthetic Ag doped ZnO nanoparticles: Semiconducting green remediators: Photocatalytic and antimicrobial potential of green nanoparticles. *Open Chem.* 2018;16(1):556-570.
 49. Nandiyanto ABD, Oktiani R, Ragadhita R. How to read and interpret ftir spectroscopy of organic material. *Indones J Sci Technol.* 2019;4(1):97-118.
 50. Saravanadevi K, Kavitha M, Karpagavinayagam P, Saminathan K, Vedhi C. Biosynthesis of ZnO and Ag doped ZnO nanoparticles from *Vitis vinifera* leaf for antibacterial, photocatalytic application. *Mater Today Proc.* 2019;48:352-356.
 51. Noukelag SK, Razanamahandry LC, Ntwampe SKO, Arendse CJ, Maaza M. Industrial dye removal using bio-synthesized Ag-doped ZnO nanoparticles. *Environ Nanotechnology, Monit Manag.* 2021;16(March):100463.
 52. Ji P, Lu D, Zhang S, Zhang W, Wang C, Wang H. Modification of Poly(Ethylene 2,5-Furandicarboxylate) with Poly(Ethylene glycol) for Biodegradable Copolyesters with Good Mechanical Properties and Spinnability. Published online 2019.
 53. Talam S, Karumuri SR, Gunnam N. Synthesis, Characterization, and Spectroscopic Properties of ZnO Nanoparticles. *ISRN Nanotechnol.* 2012;2012:1-6.
 54. Hasnidawani JN, Azlina HN, Norita H, Bonnia NN, Ratim S, Ali ES. Synthesis of ZnO Nanostructures Using Sol-Gel Method. *Procedia Chem.* 2016;19:211-216.
 55. Tshabalala MA, Dejene BF, Swart HC. Synthesis and characterization of ZnO nanoparticles using polyethylene glycol (PEG). *Phys B Condens Matter.*

- 2012;407(10):1668-1671.
56. Chakrabarty B, Ghoshal AK, Purkait MK. Effect of molecular weight of PEG on membrane morphology and transport properties. *J Memb Sci*. 2008;309(1-2):209-221.
 57. Science E. Synthesis of ZnO-TiO₂ / Chitosan Nanorods By Using Precipitation Methods and Studying Their Structures and Optics Properties at Different Precursor Molar Compositions Synthesis of ZnO-TiO₂ / Chitosan Nanorods by Using Precipitation Methods and Studying . Published online 2019.
 58. Sudha M, Senthilkumar S, Hariharan R, Suganthi A, Rajarajan M. Synthesis, characterization and study of photocatalytic activity of surface modified ZnO nanoparticles by PEG capping. *J Sol-Gel Sci Technol*. 2013;65(3):301-310.
 59. Motazedi R, Rahaiee S, Zare M. Efficient biogenesis of ZnO nanoparticles using extracellular extract of *Saccharomyces cerevisiae*: Evaluation of photocatalytic, cytotoxic and other biological activities. *Bioorg Chem*. 2020;101(May):103998.
 60. Kavithaa K, Paulpandi M, Ponraj T, Murugan K, Sumathi S. Induction of intrinsic apoptotic pathway in human breast cancer (MCF-7) cells through facile biosynthesized zinc oxide nanorods. *Karbala Int J Mod Sci*. 2016;2(1):46-55.
 61. Srihar A, Kannan JC, Senthil TS. Preparation and Characterization of Ag doped ZnO nanoparticles and its Antibacterial Applications Academic Discipline and Sub-Disciplines Nano technology TYPE (METHOD / APPROACH)..
 62. Navale GR, Thripuranthaka M, Late, Dattatray J Shinde SS. Antimicrobial Activity of ZnO Nanoparticles against Pathogenic Bacteria and Fungi. *JSM Nanotechnol Nanomedicine*. 2015;3(1):1033.
 63. Tam KH, Djurišić AB, Chan CMN, et al. Antibacterial activity of ZnO nanorods prepared by a hydrothermal method. *Thin Solid Films*. 2008;516(18):6167-6174.

