

## DAFTAR PUSTAKA

1. Sahithi, K.; Swetha, M.; Prabakaran, M.: Synthesis and Characterization of Nanoscale-Hydroxyapatite-coper for Antimicrobial Activity Toward Bone Tissue Engineering Applications. *J. Biomed Nanotechnol.* 2010, 6(4) 333-339.
2. Samani, S.; Hossainipour, S. M.; Tamizifar, M.: Invitro Antibacterial Evaluation of Sol-gel-Derived Zn-, Ag-, and (Zn+Ag)-doped Hydroxyapatite Coatings Against Methicillin-Resistan, *Staphylococcus aureus*, *J. Biomed. Mater. Res.* 2013, A 101(1) 222-230.
3. Nirmala, J. G.; Akila, S.; Narrendirakannan.: Vitis Vinifera peel polyphenols stabilized gold nanoparticles induce cytotoxicity and apoptotic cell death in A431 skin cancer cell lines. 2011, 6-8.
4. Ahmed, S.; Annu, A.; Ikram, S.; Yuda, S.: Biosynthesis of gold nanoparticles. A green approach. *Journal of Photochemistry & Photobiology, B: Biology* 161. 2016. 141–153.
5. Prima, J. M.; Arief, S.; Rahmayeni.: *Green Synthesis* Nanokomposit Perak-Hidroksiapatit Menggunakan Bioreduktor Ekstrak Daun Gambir (*Uncaria Gambir Roxb*) dan Uji Aktivitas Anti Bakteri. *Skripsi*. Fakultas Matematika dan Ilmu Pengetahuan Alam, Univesritas Andalas, Padang. 2017
6. Hosokawa, M.; Nogi, K.; Naito, M.; Yokoyama, T.: *Nanoparticle Technology Handbook*, 1st edition, Elsevier Linacre House, Jordan Hill, Oxford OX2 8DP, UK. 2007, 5-7.
7. SigmaAldrich, <http://www.sigmaaldrich.com/technicaldocuments/articles/materials-science/nanomaterials/gold-nanoparticles.html>, Diakses pada 10 Desember 2016, 01,14 WIB.
8. Siddiq, K. S.; Husen, A.: Recent advances in plant-mediated engineered gold nanoparticles and their application in biological system, *Journal of Trace Elements in Medicine and Biology.* 2017, (40): 10-23.
9. Mata, R.; Bhaskaran, A.; Sadras, S. R.: Green-synthesized gold nanoparticles from *Plumeria alba* flower extract to augment catalytic degradation of organic dyes and inhibit bacterial growth. *Particology.* 2016, (24): 78-86.
10. Paul, B.; Bhuyan, B.; Purkaystha, D. D.; Dhar, S. S.: Photocatalytic and antibacterial of gold and silver nanoparticles synthesized using biomass of *Parkiaa roxburghii* leaf. *Journal of Photochemistry & Photobiology. B: Biology.* 2016, (154): 1-7.
11. Vilas, V.; Philip, D.; Mathew, J.: Biosynthesis of Au and Au/Ag alloy nanoparticles using *Coleus aromaticus* essential oil and evaluation of their catalytic, antibacterial, and antiradical activities, *Journal of Molecular Liquids.* 2016, (221): 179-189.

12. Yan, J. K.; Liu, J. L.; Sun, Y. J.; Tang, S.; Mo, Z. Y.; Liu, Y. S.: Green synthesis of biocompatible carboxylic curdlan-capped gold nanoparticles and its interaction with protein. *Carbohydrate Polymers*. 2015, (117): 71-77.
13. Ganeshkumar, M.; Sathishkumar, M.; Ponrasu, T.; Dinesh, M. G.; Suguna, L.: Spontaneous ultra fast synthesis of gold nanoparticles using *Punica granatum* for cancer targeted drug delivery, *Colloids and Surfaces B: Biointerfaces*. 2013, (106): 208-216.
14. Ghodake, G.; Kim, D. Y.; Jo, J. H.; Jang, J.; Lee, D. S.: One-step green synthesis of gold nanoparticles using casein hydrolytic peptides and their anti-cancer assessment using the DU145 cell line. *Journal of Industrial and Engineering Chemistry*. 2016, (33): 185-189.
15. JECFA (Joint FAO/WHO Expert Committee on Food additives) Summary of Evaluation Performed by the Joint FAO/WHO Expert Committee on Food Additives, INS, 2001, 175, <http://apps.who.int/food-additives-contaminants-jecfa-database/chemical.aspx?chemID=1287>, Diakses pada 11 Desember, 10.35 WIB.
16. Corner, E. E.; Mwamuka, J.; Gole, A.; Murphy, C. J.; Wyatt, M. D.: Gold nanoparticles are taken up by human cell but do not cause acute cytotoxicity, *Small*. 2005, (1): 325-327.
17. Ahmed, S.; Annu, Ikram, S.; Yudha, S.: Biosynthesis of gold nanoparticles: A green approach. *Journal of Photochemistry & Photobiology, B: Biology*. 2016, (161): 141-153.
18. Murugan, K.; Benelli, G.; Panneerselvam, C.; Subramaniam, J.; Jeyalalitha, T.; Dinesh, D.; Nicoletti, M.; Hwang, J. S.; Suresh, U.; Madhiyazhagan, P.: *Cymbopogon citratus*-synthesized gold nanoparticles boost the predation efficiency of copepod *Mesocyclops aspericornis* against malaria and dengue mosquitoes, *Exp. Parasitol.* 2015, (153): 129-138.
19. Krishnaraj, C.; Muthukumar, P.; Ramachandran, R.; Balakumaran, M. D.; Kalaichelvan, P. T.: *Acalypha indica* Linn: Biogenic synthesis of silver and gold nanoparticles and their cytotoxic effects against MDA-MB-231, human breast cancer cells, *Biotechnol. Rep.* 2014, (4): 42-49.
20. Krishnaswamy, K.; Vali, H.; Orsat, V.: Value-adding to grape waste: green synthesis of gold nanoparticles. *J. Food Eng.* 2014, (142): 210-220.
21. Basavegowda, N.; Idhayadhulla, A.; Lee, Y. R.: Phyto-synthesis of gold nanoparticles using fruit extract of *Hovenia dulcis* and their biological activities, *Ind. Crop. Prod.* 2014, (52): 745-751.
22. Magdalena, N. V.; Kusnadi, J.: Antibakteri dari ekstrak kasar daun gambir (*Uncaria gambir* var *cubadak*) metode microwave-assisted

- extraction terhadap bakteri patogen. *Jurnal Pangan dan Agroindustri*. 2015, (3): 124135.
23. Sabarni,: Teknik pembuatan gambir (*Uncaria gambir Roxb*) secara tradisional. *Journal of Islamic Science and Technology*. 2015, (1): 105-112.
  24. Lucida, H.; Bakhtiar, A.; Putri, W. A.: Formulasi sediaan antiseptik mulut dari katekin gambir. *Jurnal Sains Tek. Far.* 2007, 12(1).
  25. Velury, R.; Weir, T. L.; Bais, H. P.; Stermitz, F. R.; Vivanco, J. M.: Phytotoxic and antimicrobial activities of catechin derivative. *J.Agric. Food. Chem.* 2004, (52): 1077-1082.
  26. Zielinska, A.; Skwarek, E.; Zaleska, A.; Gazda, M.; dan Hupka, J.: Preparation of silver nanoparticles with controlled particle size. *Procedia Chemistry*. 2009, (1):1560-1566.
  27. Mntungwa, N.; Pullabhotla, V. S. R.; Revaprasadu, N.: Facile synthesis of cysteine and triethanolamine capped CdTe nanoparticles. *Colloids and Surfaces B: Biointerfaces*. 2013, (101): 450–456.
  28. Majumdar, R.; Bag, B. G.; Maity, N.: Acacia nilotica (Babool) leaf extract mediated size controlled rapid synthesis of gold nanoparticles and study of its catalytic activity, *Int. Nano Lett.* 2013, (3): 53.
  29. Rao, K. J.; Paria, S.: Green synthesis of gold nanoparticles using aqueous Aegle marmelos leaf extract and their application for thiamine detection, *RSC Adv.* 2014 (4): 28645-28652.
  30. Joseph, S.; Mathew, B.: Microwave assisted facile green synthesis of silver and gold nanocatalysts using the leaf extract of Aerva lanata, *Spectrochim. Acta Part A: Mol. Biomol. Spectrosc.* 2015 (136): 1371-1379.
  31. Chandran, S. P.; Chaudhary, M.; Pasricha, R.; Ahmad, A.; Sastry, M.: Synthesis of gold nanotriangles and silver nanoparticles using Aloe vera plant extract, *Biotechnol. Prog.* 2006, (22): 577-583.
  32. Ghule, K.; Ghule, A. V.; Liu, J. Y.; Ling, Y. C.: Microscale size triangular gold prisms synthesized using Bengal gram beans (*Cicer arietinum L.*) extract and H<sub>2</sub>AuCl<sub>4</sub>.3H<sub>2</sub>O: a green biogenic approach. *J. Nanosci. Nanotechnol.* 2006, (6): 3746-3751.
  33. Krishnamurthy, S.; Sathishkumar, M.; Lee, S. Y.; Bae, M. A.; Yun, Y. S.: Biosynthesis of Au nanoparticles using cumin seed powder extract. *J. Nanosci. Nanotechnol.* 2011, (11): 811-1814.
  34. Shankar, S. S.; Rai, A.; Ankamwar, B.; Singh, A.; Ahmad, A.; Sastry, M.: Biological synthesis of triangular gold nanoprisms, *Nat. Mater.* 2004, (3): 482-488.



35. Pasca, R. D.; Mocanu, A.; Cobzac, S. C.; Petean, I.; Horovitz, O.; TomoaiaCotisel, M.: Biogenic syntheses of gold nanoparticles using plant extracts, *Part. Sci. Technol.* 2014, (32): 131-137.
36. Shankar, S. S.; Ahmad, A.; Pasricha, R.; Sastry, M.: Bioreduction of chloroaurate ions by geranium leaves and its endophytic fungus yields gold nanoparticles of different sHAes, *J. Mater. Chem.* 2003, (13): 1822-1826.
37. Mishra, A. N.; Bhadauria, S.; Gaur, M. S.; Pasricha, R.; Kushwah, B. S.: Synthesis of gold nanoparticles by leaves of zero-calorie sweetener herb (*Stevia rebaudiana*) and their nanoscopic characterization by spectroscopy and microscopy, *Int. J. Green Nanotechnol. Phys. Chem.* 2010, (1): 118124.
38. Gopinath, K.; Gowri, S.; Karthika, V.; Arumugam, A.: Green synthesis of gold nanoparticles from fruit extract of *Terminalia arjuna* for the enhanced seed germination activity of *Gloriosa superb*, *J. Nanostruct. Chem.* 2014, (4): 115.
39. Majumdar, R.; Bag, B. G.: *Terminalia arjuna* bark extract mediated size controlled synthesis of polysHAed gold nanoparticles and its application in catalysis, *Int. J. Res. Chem. Environ.* 2012, (2): 338-344.
40. Molaei, R.; Farhadi, K.; Forough, M.; Pourhossein, A.: Biosynthetic route for the preparation of nonregular gold nanoparticles using aqueous extracted of nettle (*Urtica dioica* L.), *Plant Synth. React. Inorg. Met. Org. Nano-Met. Chem.* 2015, (45): 1489-1494.
41. Ismail, E. H.; Khalil, M. M. H.; Al-Seif, F. A.; El-Magdoub, F.: Biosynthesis of gold nanoparticles using extract of grape (*Vitis vinifera*) leaves and seeds, *Prog. Nanotechnol. Nanomater.* 2014, (3): 1-12.
42. Kumar, K. P.; Paul, W.; Sharma, C. P.: Green synthesis of gold nanoparticles with *Zingiber officinale* extract: characterization and blood compatibility, *Process Biochem.* 2011, (46): 2007-2013.
43. Poortavasoly, H.; Montazer, M.; Harifi, T.: Aminolysis of polyethylene terephthalate surface along with in situ synthesis and stabilizing ZnO nanoparticles using triethanolamine optimized with response surface methodology. *Materials Science and Engineering C.* 2016, (58): 495-503.
44. Dlamini, N. N.; Pullabhotla, V. S. R.; Revaprasadu, N.: Synthesis of triethanolamine (TEA) capped CdSe nanoparticles. *Materials Letters.* 2011, (65): 1283-1286.
45. Chudasama, B.; Vala, A. K.; Andhariya, N.; Mehta, R. V.; Upadhyay. R. V.: Highly bacterial resistant silver nanoparticles: Synthesis and antibacterial activities. *Journal Nanopart Res.* 2010, (12): 1677-1685.

46. Musfiroh, E.; Syarief, S. H.: Uji aktivitas peredaman radikal bebas nanopartikel emas dengan berbagai konsentrasi sebagai material antiaging dalam kosmetik, *UNESA J. Chem.* 2012, (1): 18-25.
47. Chen, J.; Wen, Z. S.; Zhong, Z.; Wang, J.; Wu, Q. Zhang.: Synthesis Of Hydroxyapatite Nanorods From Abalone Shells Via Hydrothermal Solid-State Conversion. *Materials and Design.* 2015 87, 445–449.
48. Nathanael, A. J.; Mangalaraj, D.; Chen, P. C.; Ponpandian, N.: Mechanical And Photocatalytic Properties Of Hydroxyapatite/Titania Nanocomposites Prepared By Combined High Gravity And Hydrothermal Process. *Composites Science And Technology.* 2010, 70, 419–426.
49. Ciobanu, G.; Bargan, A. M.; Luca, C.: New Cerium(IV)-Substituted Hydroxyapatite Nanoparticles: Preparation and Characterization. *Ceramics International.* 2015, 1.(1).
50. Gutowska, I.; Machoy, Z.; Machalinski, B.: The Role Of Bivalent Metals In Hydroxyapatite Structures As Revealed By Molecular Modeling With The Hyperchem Software, Inc. *J Biomed Mater Res.* 2005, 75A, 788–793.
51. Afrizal.; Gunawarman.: Analisa struktur mikro material substitusi hidroksiapatit cangkang kerang darah dan resin akrilik bahan pembuat gigi untuk aplikasi gigi tiruan. *Surya teknika.* 2016, 3.
52. Rohmawati, N.; Hartatiek.; Nasikhudin, M.; Diantoro.: Pengaruh Komposisi Pada Sintesis Komposit Hidroksiapatit Dari Tulang Sotong-Kitosan Terhadap Sifat Kristal Dan Mikrostrukturnya, Program Studi Fisika FMIPA Universitas Negeri Malang.
53. Safni.; Desmiati.; Suyani, H.: Degradasi Senyawa Dikofol Dalam Pestisida Kelthane 200 Ec Secara Fotolisis Dengan Penambahan TiO<sub>2</sub> Anatase. *Jurnal Riset Kimia.* 2009, 2 (2).
54. Mitsionisa, A.; Vaimakisa, T. C.; Trapalis, N.; Todorova, D.; Bahnemann, R.; Dillert.: Hydroxyapatite/Titanium Dioxide Nanocomposites For Controlled Photocatalytic NO Oxidation. *Applied Catalysis B: Environmental.* 2011, 106, 398– 404.
55. Jadalannagari, S.; More, S. M.; Kowshik, S. R.: Low Temperature Synthesis Of Hydroxyapatite Nano-Rods By A Modified Sol–Gel Technique. *Materials Science and Engineering C.* 2011, 31, 534–1538.
56. alamurugan, A. M.; Faure, J. J.; Benhayoune.; Wortham, H. L.; Sockalingum, G.; Banchet.; Bouthors, B. S.; Laurent, M.D.; Balossier, G.: Synthesis And Structural Analysis Of Sol Gel Derived Stoichiometric Monophasic Hydroxyapatite. *Ceramics Silikat.* 2006, 27-31.

57. Hartini, E.: Modifikasi Zeolit Alam Dengan ZnO Untuk Degradasi Fotokatalisis Zat Warna, Tesis Jurusan Kimia, FMIPA Universitas Indonesia. Depok. 2011.
58. Anonim.: Nanokomposit material superkuat dan ringan. [www.wikipedia.org/nanokomposit](http://www.wikipedia.org/nanokomposit). 2009 diakses pada 31 Mei 2018.
59. Sobhana, S. L.; Sundaraeelan, J.: Gelatin-chitosan composite capped gold nanoparticles: a matrix for the growth of hydroxyapatite. J Nanopart Res Springer. 2009. Volume 11 333-340.
60. Nirmala, R.: Synthesis and characterization of bovine femur bone hydroxyapatite containing silver nanoparticle for the biomedical application J. Nanopart Res. 2011. Volume 13 1917-1927.
61. Silverstein, R. M.; Webster, F. X.; Kiemle, D. J.; Spectrometric Identification of Organic Compounds Seventh Edition, John Wiley and Sons, Inc. New York. 2005, 78-79.
62. Abdullah, M.; Khairurrijal.: Karakterisasi nanomaterial. Jurnal Nanosains dan Nanoteknologi. 2009, 1(2):1-8.
63. Paul, B.; Bhuyan, B.; Purkaystha, D. D.; Dey, M.; Dhar, S. S.: Green synthesis of gold nanoparticles using Pogestemon benghalensis (B) O. Ktz. leaf extract and studies of their photocatalytic activity in degradation of methylene blue. Materials Letters. 2015, (148): 37-40.
64. Nadeem, M.; Abbasi, B. H.; Younas, M.; Ahmad, W.; Khan, T.: A Review Of The Green Synthesis and Anti Microbial Aplication Of Gold Nanoparticle. Green Chemistry Letters And Reviews. 2017, No.4, Vol (10), 216-277.
65. Nursyamsi.; Zakir, M.; Dali, S.: Pemanfaatan fraksi etil asetat daun ketapang (*Terminalia Catappa*) sebagai bioreduktor dalam sintesis nanopartikel emas dan analisis sifat antibakterinya. Skripsi. Universitas Hasanuddin. 2015.
66. Maier. S. A. Plasmonics : Fundamentals and application. UK: Springer 2007.
67. Husain, S.; Arifin, M.; Suharyadi, E.; Abraha, K.: Pengamatan fenomena SPR pada sistem lapisan tipis perak-nanopartikel magnetik Fe<sub>3</sub>O<sub>4</sub> untuk aplikasi biosensor. UGM. 2012, 125.
68. Jeffrey, B. H.: Nano and Microsensors for Chemical and Biological Terrorism Surveillance. Department of Chemistry, University of Massachusetts, USA. 2008.
69. Kantharia, N.; Naik.; Apte, S.; Kheur, M.; Kheur, S; Kale, B.: Nano-hydroxyapatite and its contemporary applications. Journal of Dental Research and Scientific Development. 2014, 1:15-19.
70. Fatimah, E. N.; Hidajati, N.: Sintesis dan Karakterisasi Nanopartikel Emas Sebagai Material Pendukung Aktivitas Tabir Surya Turunan

Sinamat. Prosiding Seminar Nasional Kimia Unesa. 2012,ISBN:978-979-028-550-7.

71. Li, Q.; Mahendra, S.; Lyon, D. Y.; Brunet, L.; Liga, M. V.; Li, P. J. J.; Alvarez.: Antimicrobial Nanomaterials for Water Disinfection and Microbial Control: Potential Applications and Implications. *Water Res.* 2008, 42(1): 4591–4602.

