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DAFTAR PUSTAKA

Abbas, R., Luo, J., Qi, X., Naz, A., Khan, I.A., Liu, H., Yu, S. dan Wei, J. (2023) "Silver Nanoparticles: Synthesis, Properties, and Applications," *Silver Nanoparticles: Synthesis, Properties, and Applications*, 14(1425), hal. 1–264. Tersedia pada: https://doi.org/10.1201/9781003278955.

Abdel-Rahman, L.H., Al-Farhan, B.S., Abou El-ezz, D., Abd–El Sayed, M.A., Zikry, M.M. dan Abu-Dief, A.M. (2022) "Green Biogenic Synthesis of Silver Nanoparticles Using Aqueous Extract of *Moringa Oleifera*: Access to a Powerful Antimicrobial, Anticancer, Pesticidal and Catalytic Agents," *Journal of Inorganic and Organometallic Polymers and Materials*, 32(4), hal. 1422–1435. Tersedia pada: https://doi.org/10.1007/s10904-021-02186-9.

Adam, Y.S., Almawgani, A.H.M., Daher, M.G., Taya, S.A., Ahmed, N.M. dan Gumaih, H.S. (2024) "Novel Polymer-based Surface Plasmon Resonance Nanostructure for the Rapid Detection of Glucose and BSA Concentrations," *Plasmonics*, 20(7), hal. 4425–4438. Tersedia pada: https://doi.org/10.1007/s11468-024-02628-3.

Adrianto, N., Panre, A.M., Istiqomah, N.I., Riswan, M., Apriliani, F. dan Suharyadi, E. (2022) "Localized surface plasmon resonance properties of green synthesized silver nanoparticles," *Nano-Structures & Nano-Objects*, 31, hal. 100895. Tersedia pada: https://doi.org/10.1016/j.nanoso.2022.100895.

Afify, A.A., Abd El-Fattah, Z.M., Esmail, M.S.M. dan El-Bahnasawy, H.H. (2023) "Comparative Mössbauer and first principles calculations for selected iron oxides and ferrites nanoparticles," *Materials Today Communications*, 35, hal. 106193. Tersedia pada: https://doi.org/10.1016/j.mtcomm.2023.106193.

Aisida, S.O., Ugwu, K., Akpa, P.A., Nwanya, A.C., Nwankwo, U., Bashir, A.K.H., Madiba, I.G., Ahmed, I. dan Ezema, F.I. (2019) "Synthesis and characterization of iron oxide nanoparticles capped with *Moringa Oleifera*: The mechanisms of formation effects on the optical, structural, magnetic and morphological properties," *Materials Today: Proceedings*, 36, hal. 214–218. Tersedia pada: https://doi.org/10.1016/j.matpr.2020.03.167.

Akhtar, K., Khan, S.A., Khan, S.B. dan Asiri, A.M. (2018) "Scanning Electron Microscopy: Principle and Applications in Nanomaterials Characterization," in S.K. Sharma (ed.) *Handbook of Materials Characterization*. Cham: Springer International Publishing, hal. 113–145. Tersedia pada: https://doi.org/10.1007/978-3-319-92955-2_4.

Ameh, E.S. (2019) "A review of basic crystallography and x-ray diffraction applications," *The International Journal of Advanced Manufacturing Technology*, 105(7), hal. 3289–3302. Tersedia pada: https://doi.org/10.1007/s00170-019-04508-1.

KAJIAN MAGNETO-OPTIC SURFACE PLASMON RESONANCE GREEN-SYNTHESIZED NANOKOMPOSIT Fe3O4/Ag UNTUK DETEKSI BOVINE SERUM ALBUMIN
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Anggraeni, K., Riswan, M., Jayanti, P.D., Puspitarum, D.L., Ardiyanti, H., Swastika, P.E., Istiqomah, N.I., Arifin, M. dan Suharyadi, E. (2025) "Microstructure, magnetic, and surface plasmon resonance studies of green-synthesized ferrite nanoparticles for biosensor applications," *Journal of Magnetism and Magnetic Materials*, 614, hal. 172727. Tersedia pada: https://doi.org/10.1016/j.jmmm.2024.172727.

Anggraini, S., Yudhista, G.O., Eriyanto dan Azhara, D. (2025) "Penggunaan Albumin Oral, Albumin Injeksi Dan Kombinasi Keduanya Terhadap Kadar Albumin Darah Pada Pasien Hipoalbuminemia Di Instalasi Rawat Inap Rumah Sakit Paru DR. H. A. Rotinsulu," *Jurnal Ilmu Kedokteran dan Kesehatan*, 12(11), hal. 2544–2555. Tersedia pada: https://doi.org/https://doi.org/10.33024/jikk.v12i11.21568.

Armelles, G., Cebollada, A., García-Martín, A. dan González, M.U. (2013) "Magnetoplasmonics: Combining Magnetic and Plasmonic Functionalities," *Advanced Optical Materials*, 1(1), hal. 10–35. Tersedia pada: https://doi.org/10.1002/adom.201200011.

Bacsik, Z., Mink, J. dan Keresztury, G. (2004) "FTIR spectroscopy of the atmosphere. I. Principles and methods," *Applied Spectroscopy Reviews*, 39(3), hal. 295–363. Tersedia pada: https://doi.org/10.1081/ASR-200030192.

Bashkatov, A.N. dan Genina, E.A. (2003) "Water refractive index in dependence on temperature and wavelength: a simple approximation," in V. V. Tuchin (ed.) *Proceedings of SPIE - The International Society for Optical Engineering*, hal. 393–395. Tersedia pada: https://doi.org/10.1117/12.518857.

Belinskaia, D.A., Voronina, P.A., Shmurak, V.I., Jenkins, R.O. dan Goncharov, N. V (2021) "Serum albumin in health and disease: esterase, antioxidant, transporting and signaling properties," *International Journal of Molecular Sciencesolecular sciences*, 22(19), hal. 10318. Tersedia pada: https://doi.org/doi.org/10.3390/ijms221910318.

Beyene, H.D., Werkneh, A.A., Bezabh, H.K. dan Ambaye, T.G. (2017) "Synthesis paradigm and applications of silver nanoparticles (AgNPs), a review," *Sustainable Materials and Technologies*, 13, hal. 18–23. Tersedia pada: https://doi.org/10.1016/j.susmat.2017.08.001.

Bogireddy, N.K.R., Pal, U., Gomez, L.M. dan Agarwal, V. (2018) "Size controlled green synthesis of gold nanoparticles using Coffea arabica seed extract and their catalytic performance in 4-nitrophenol reduction," *RSC Advances*, 8(44), hal. 24819–24826. Tersedia pada: https://doi.org/10.1039/c8ra04332a.

Bunaciu, A.A., Udriştioiu, E. gabriela dan Aboul-Enein, H.Y. (2015) "X-Ray Diffraction: Instrumentation and Applications," *Critical Reviews in Analytical Chemistry*, 45(4), hal. 289–299. Tersedia pada: https://doi.org/10.1080/10408347.2014.949616.

Butt, M.A. (2025) "Surface Plasmon Resonance-Based Biodetection Systems:

UNIVERSITAS GADJAH MADA
KAJIAN MAGNETO-OPTIC SURFACE PLASMON RESONANCE GREEN-SYNTHESIZED NANOKOMPOSIT Fe3O4/Ag UNTUK DETEKSI BOVINE SERUM ALBUMIN
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Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Principles, Progress and Applications—A Comprehensive Review," *Biosensors*, 15(1). Tersedia pada: https://doi.org/10.3390/bios15010035.

Cabral, M.J., Chen, Z. dan Liao, X. (2023) "Scanning transmission electron microscopy for advanced characterization of ferroic materials," *Microstructures*, 3(4). Tersedia pada: https://doi.org/10.20517/microstructures.2023.39.

Callister Jr, W.D. dan Rethwisch, D.G. (2020) *Materials science and engineering: an introduction*. Wiley Online Library. Tersedia pada: https://doi.org/10.1016/0261-3069(91)90101-9.

Capelli, D., Scognamiglio, V. dan Montanari, R. (2023) "Surface plasmon resonance technology: Recent advances, applications and experimental cases," *TrAC - Trends in Analytical Chemistry*, 163, hal. 117079. Tersedia pada: https://doi.org/10.1016/j.trac.2023.117079.

Carbonaro, M. dan Nucara, A. (2010) "Secondary structure of food proteins by Fourier transform spectroscopy in the mid-infrared region," *Amino Acids*, 38(3), hal. 679–690. Tersedia pada: https://doi.org/10.1007/s00726-009-0274-3.

De Caro, C.A., Toledo, M. dan Claudia, H. (2015) *UV/VIS Spectrophotometry-Fundamentals and Applications*. Mettler Toledo.

Chadha, U., Bhardwaj, P., Agarwal, Rushali, Rawat, P., Agarwal, Rishika, Gupta, I., Panjwani, M., Singh, S., Ahuja, C., Selvaraj, S.K., Banavoth, M., Sonar, P., Badoni, B. dan Chakravorty, A. (2022) "Recent progress and growth in biosensors technology: A critical review," *Journal of Industrial and Engineering Chemistry*. Korean Society of Industrial Engineering Chemistry, hal. 21–51. Tersedia pada: https://doi.org/10.1016/j.jiec.2022.02.010.

Chen, T., Zhou, S., Hu, Z., Fu, X., Liu, Z., Su, B., Wan, H., Du, X. dan Gao, Z. (2021) "A multifunctional superhydrophobic melamine sponge decorated with Fe_3O_4/Ag nanocomposites for high efficient oil-water separation and antibacterial application," *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 626(April), hal. 127041. Tersedia pada: https://doi.org/10.1016/j.colsurfa.2021.127041.

Choi, J., Cheng, F., Cleary, J.W., Sun, L., Dass, C.K., Hendrickson, J.R., Wang, C.Y., Gwo, S., Shih, C.K. dan Li, X. (2020) "Optical dielectric constants of single crystalline silver films in the long wavelength range," *Optical Materials Express*, 10(2), hal. 693. Tersedia pada: https://doi.org/10.1364/OME.385723.

Choudhary, S., Sangela, V., Saxena, P., Saharan, V., Pugazhendhi, A. dan Harish (2023) "Recent progress in algae-mediated silver nanoparticle synthesis," *International Nano Letters*, 13(3), hal. 193–207. Tersedia pada: https://doi.org/10.1007/s40089-022-00390-0.

Chuang, V.T.G. dan Otagiri, M. (2013) "Photoaffinity labeling of plasma proteins," *Molecules*, 18(11), hal. 13831–13859. Tersedia pada:

KAJIAN MAGNETO-OPTIC SURFACE PLASMON RESONANCE GREEN-SYNTHESIZED NANOKOMPOSIT Fe3O4/Ag UNTUK DETEKSI BOVINE SERUM ALBUMIN
Rafiqa Wulandani, Prof. Dr.Eng. Edi Suharyadi, S.Si., M.Eng.
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https://doi.org/10.3390/molecules181113831.

Constantin, E., Varasteanu, P., Mihalache, I., Craciun, G., Mitran, R.A., Popescu, M., Boldeiu, A. dan Simion, M. (2021) "SPR detection of protein enhanced by seedless synthesized gold nanorods," *Biophysical Chemistry*, 279(May), hal. 106691. Tersedia pada: https://doi.org/10.1016/j.bpc.2021.106691.

Crompton, T.R. (2004) "Analysis of Organosilicon Compounds," in *The Chemistry of Organic Silicon Compounds*. Chichester, UK: John Wiley & Sons, Ltd, hal. 393–444. Tersedia pada: https://doi.org/10.1002/0470025107.ch6.

Darmawan, M.Y., Istiqomah, N.I., Adrianto, N., Tumbelaka, R.M., Nugraheni, A.D. dan Suharyadi, E. (2023) "Green synthesis of Fe_3O_4/Ag composite nanoparticles using Moringa oleifera: Exploring microstructure, optical, and magnetic properties for magnetic hyperthermia applications," *Results in Chemistry*, 6, hal. 100999. Tersedia pada: https://doi.org/10.1016/j.rechem.2023.100999.

Dumelow, T., Camley, R., Abraha, K. dan Tilley, D. (1998) "Nonreciprocal phase behavior in reflection of electromagnetic waves from magnetic materials," *Physical Review B - Condensed Matter and Materials Physics*, 58(2), hal. 897–908. Tersedia pada: https://doi.org/10.1103/PhysRevB.58.897.

Dutta, A. (2017) "Chapter 4 - Fourier Transform Infrared Spectroscopy," in *Micro and Nano Technologies*. Elsevier, hal. 73–93. Tersedia pada: https://doi.org/10.1016/B978-0-323-46140-5.00004-2.

Eddin, F.B.K. dan Fen, Y.W. (2020) "The principle of nanomaterials based surface plasmon resonance biosensors and its potential for dopamine detection," *Molecules*. Tersedia pada: https://doi.org/10.3390/molecules25122769.

Eldeeb, B.A., El-Raheem, W.M.A. dan Elbeltagi, S. (2023) "Green synthesis of biocompatible Fe_3O_4 magnetic nanoparticles using Citrus Sinensis peels extract for their biological activities and magnetic-hyperthermia applications," *Scientific Reports*, 13(1), hal. 1–12. Tersedia pada: https://doi.org/10.1038/s41598-023-46287-6.

Epp, J. (2016) *X-Ray Diffraction (XRD) Techniques for Materials Characterization*, *Materials Characterization Using Nondestructive Evaluation (NDE) Methods*. Elsevier Ltd. Tersedia pada: https://doi.org/10.1016/B978-0-08-100040-3.00004-3.

Ferdous, S., Rahman, G.S., Rayhan, J., Hossain, M.Z., Rahman, M.H., Khan, A. dan Islam, M.S. (2024) "Green Synthesis of Silver Nanoparticles Using Moringa oleifera Leaf Extract: Antibacterial Efficacy and Sustainable Nanotechnology," *Biosensors and Nanotheranostics*, 3(1), hal. 1–7. Tersedia pada: https://doi.org/10.25163/biosensors.319971.

Fox, M. (2010) *Optical properties of solids*. Oxford university press. Tersedia pada: https://doi.org/10.1119/1.1691372.

Franco, M.K.K.D., Araújo, D.R. de, Paula, E. de, Cavalcanti, L. dan Yokaichiya,

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KAJIAN MAGNETO-OPTIC SURFACE PLASMON RESONANCE GREEN-SYNTHESIZED NANOKOMPOSIT Fe3O4/Ag UNTUK DETEKSI BOVINE SERUM ALBUMIN
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Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

F. (2017) "X-Ray Scattering Techniques Applied in the Development of Drug Delivery Systems," *X-ray Scattering* [Preprint]. Tersedia pada: https://doi.org/10.5772/65326.

Fujiwara, H. (2007) *Spectroscopic Ellipsometry: Principles and Applications*, *Spectroscopic Ellipsometry: Principles and Applications*. Tersedia pada: https://doi.org/10.1002/9780470060193.

Ganapathe, L.S., Mohamed, M.A., Mohamad Yunus, R. dan Berhanuddin, D.D. (2020) "Magnetite (Fe_3O_4) Nanoparticles in Biomedical Application: From Synthesis to Surface Functionalisation," *Magnetochemistry*. Tersedia pada: https://doi.org/10.3390/magnetochemistry6040068.

Garcia, S., Mabarroh, N., Darmawan, M.Y., Wibowo, N.A., Ardiyanti, H., Tumbelaka, R.M., Istiqomah, N.I. dan Suharyadi, E. (2023) "Two spin-valve GMR thin films on half wheatstone bridge circuit for detecting green-synthesized Fe_3O_4@Ag nanoparticles-labeled biomolecule," *Materialia*, 32, hal. 101930. Tersedia pada: https://doi.org/10.1016/j.mtla.2023.101930.

Ghaseminezhad, S.M. dan Shojaosadati, S.A. (2016) "Evaluation of the antibacterial activity of Ag/Fe_3O_4 nanocomposites synthesized using starch," *Carbohydrate Polymers*, 144, hal. 454–463. Tersedia pada: https://doi.org/10.1016/j.carbpol.2016.03.007.

Güzel, R. dan Erdal, G. (2018) "Synthesis of Silver Nanoparticles," in. Rijeka: IntechOpen, hal. Ch. 1. Tersedia pada: https://doi.org/10.5772/intechopen.75363.

Ho, V.M.H., Vo, T.K., Nguyen, T.H.A., Dinh, Q.K. dan Nguyen, V.C. (2023) "Dual role of flower-like Fe_3O_4/Ag microstructure in electrocatalytic detection and catalytic reduction of 4-nitrophenol," *Materials Science in Semiconductor Processing*, 160(November 2022), hal. 107441. Tersedia pada: https://doi.org/10.1016/j.mssp.2023.107441.

Holder, C.F. dan Schaak, R.E. (2019) "Tutorial on Powder X-ray Diffraction for Characterizing Nanoscale Materials," *ACS Nano*, 13(7), hal. 7359–7365. Tersedia pada: https://doi.org/10.1021/acsnano.9b05157.

Homola, J. (2006) "Electromagnetic Theory of Surface Plasmons BT - Surface Plasmon Resonance Based Sensors," in. Berlin, Heidelberg: Springer Berlin Heidelberg, hal. 3–44. Tersedia pada: https://doi.org/10.1007/5346_013.

Jadoun, S., Arif, R., Jangid, N.K. dan Meena, R.K. (2021) "Green synthesis of nanoparticles using plant extracts: a review," *Environmental Chemistry Letters*, 19(1), hal. 355–374. Tersedia pada: https://doi.org/10.1007/s10311-020-01074-x.

Jafari, A., Farjami Shayesteh, S., Salouti, M. dan Boustani, K. (2015) "Dependence of structural phase transition and lattice strain of Fe_3O_4 nanoparticles on calcination temperature," *Indian Journal of Physics*, 89(6), hal. 551–560. Tersedia pada: https://doi.org/10.1007/s12648-014-0627-y.

KAJIAN MAGNETO-OPTIC SURFACE PLASMON RESONANCE GREEN-SYNTHESIZED NANOKOMPOSIT Fe3O4/Ag UNTUK DETEKSI BOVINE SERUM ALBUMIN
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Jahanban-Esfahlan, A., Ostadrahimi, A., Jahanban-Esfahlan, R., Roufegarinejad, L., Tabibiazar, M. dan Amarowicz, R. (2019) "Recent developments in the detection of bovine serum albumin," *International Journal of Biological Macromolecules*, 138, hal. 602–617. Tersedia pada: https://doi.org/10.1016/j.ijbiomac.2019.07.096.

Jain, S. dan Mehata, M.S. (2017) "Medicinal Plant Leaf Extract and Pure Flavonoid Mediated Green Synthesis of Silver Nanoparticles and their Enhanced Antibacterial Property," *Scientific Reports*, 7(1), hal. 15867. Tersedia pada: https://doi.org/10.1038/s41598-017-15724-8.

Jayanti, P.D., Zurnansyah, Kusumah, H.P., Mahardhika, L.J., Riswan, M., Wahyuni, S., Adrianto, N., Cuana, R., Istiqomah, N.I., Ali, H., Ali, D., Chotimah dan Suharyadi, E. (2024) "Localized surface plasmon resonance properties of green synthesized Ag/rGO composite nanoparticles utilizing Amaranthus viridis extract for biosensor applications," *Journal of Science: Advanced Materials and Devices*, 9(3), hal. 100747. Tersedia pada: https://doi.org/10.1016/j.jsamd.2024.100747.

Kang, H., Buchman, J.T., Rodriguez, R.S., Ring, H.L., He, J., Bantz, K.C. dan Haynes, C.L. (2019) "Stabilization of Silver and Gold Nanoparticles: Preservation and Improvement of Plasmonic Functionalities," *Chemical Reviews*, 119(1), hal. 664–699. Tersedia pada: https://doi.org/10.1021/acs.chemrev.8b00341.

Karvelas, E.G., Lampropoulos, N.K., Benos, L.T., Karakasidis, T. dan Sarris, I.E. (2021) "On the magnetic aggregation of Fe_3O_4 nanoparticles," *Computer methods and programs in biomedicine*, 198, hal. 105778. Tersedia pada: https://doi.org/10.1016/j.cmpb.2020.105778.

Kausaite-Minkstimiene, A., Popov, A. dan Ramanaviciene, A. (2022) "Surface Plasmon Resonance Immunosensor with Antibody-Functionalized Magnetoplasmonic Nanoparticles for Ultrasensitive Quantification of the CD5 Biomarker," *ACS Applied Materials and Interfaces*, 14(18), hal. 20720–20728. Tersedia pada: https://doi.org/10.1021/acsami.2c02936.

Kędzierska, M., Potemski, P., Drabczyk, A., Kudłacik-Kramarczyk, S., Głąb, M., Grabowska, B., Mierzwiński, D. dan Tyliszczak, B. (2021) "The Synthesis Methodology of PEGylated Fe_3O_4@Ag Nanoparticles Supported by Their Physicochemical Evaluation," *Molecules*, 26(6), hal. 1744. Tersedia pada: https://doi.org/10.3390/molecules26061744.

Khaghani, Z., Hosseini Farzad, M. dan Asgari, A. (2022) "Enhanced magneto-optical effect in three layer based magnetoplasmonic structures," *Optical and Quantum Electronics*, 54(10), hal. 1–20. Tersedia pada: https://doi.org/10.1007/s11082-022-04012-z.

Khan, J., Naseem, I., Bibi, S., Ahmad, S., Altaf, F., Hafeez, M., Almoneef, M.M. dan Ahmad, K. (2023) "Green Synthesis of Silver Nanoparticles (Ag-NPs) Using Debregeasia Salicifolia for Biological Applications," *Materials*, 16(1). Tersedia pada: https://doi.org/10.3390/ma16010129.

UNIVERSITAS GADJAH MADA
KAJIAN MAGNETO-OPTIC SURFACE PLASMON RESONANCE GREEN-SYNTHESIZED NANOKOMPOSIT Fe3O4/Ag UNTUK DETEKSI BOVINE SERUM ALBUMIN
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Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Khurana, K. dan Jaggi, N. (2021) "Localized Surface Plasmonic Properties of Au and Ag Nanoparticles for Sensors: a Review," *Plasmonics*, 16(4), hal. 981–999. Tersedia pada: https://doi.org/10.1007/s11468-021-01381-1.

Krishnan Sundarrajan, S. dan Pottail, L. (2021) "Green synthesis of bimetallic Ag@Au nanoparticles with aqueous fruit latex extract of Artocarpus heterophyllus and their synergistic medicinal efficacies," *Applied Nanoscience (Switzerland)*, 11(3), hal. 971–981. Tersedia pada: https://doi.org/10.1007/s13204-020-01657-8.

Kumar, P., Sarkar, N., Singh, A. dan Kaushik, M. (2022) "Nanopaper Biosensors at Point of Care," *Bioconjugate Chemistry*. American Chemical Society, hal. 1114–1130. Tersedia pada: https://doi.org/10.1021/acs.bioconjchem.2c00213.

Kumar, R., Singh, S., Bouandas, H. dan Alam, J. (2025) "Detection of COVID-19 Using Surface Plasmon Resonance Sensor for Sensitivity Enhancement: Theoretical Analysis," *Plasmonics* [Preprint], (0123456789). Tersedia pada: https://doi.org/10.1007/s11468-025-02762-6.

Kumari, M., Gupta, V., Kumar, N. dan Arun, R.K. (2024) "Microfluidics-Based Nanobiosensors for Healthcare Monitoring," *Molecular Biotechnology*. Springer, hal. 378–401. Tersedia pada: https://doi.org/10.1007/s12033-023-00760-9.

Laksono, F.D., Supardianningsih, Arifin, M. dan Abraha, K. (2018) "Development of low cost and accurate homemade sensor system based on Surface Plasmon Resonance (SPR)," *Journal of Physics: Conference Series*, 1011(1), hal. 012043. Tersedia pada: https://doi.org/10.1088/1742-6596/1011/1/012043.

Li, J., Liu, Y., Li, X. dan Liu, J. (2024) "Magneto-optical properties and sensing performance of one-dimensional all-metal magnetic nanogratings," *Optics Communications*, 558(January), hal. 130289. Tersedia pada: https://doi.org/10.1016/j.optcom.2024.130289.

Li, L., Lei, F., Zong, X., Li, P. dan Liu, Y. (2023) "Enhancement of transverse magneto-optical Kerr effect based on surface plasmon and its application in sensing," *Results in Physics*, 51, hal. 106640. Tersedia pada: https://doi.org/10.1016/j.rinp.2023.106640.

Liu, X., Li, L., Liu, Y.-Q., Shi, X.-B., Li, W.-J., Yang, Y. dan Mao, L.-G. (2014) "Ultrasensitive detection of deltamethrin by immune magnetic nanoparticles separation coupled with surface plasmon resonance sensor," *Biosensors and Bioelectronics*, 59, hal. 328–334. Tersedia pada: https://doi.org/10.1016/j.bios.2014.03.020.

Lone, I.H., Aslam, J., Radwan, N.R.E., Bashal, A.H., Ajlouni, A.F.A. dan Akhter, A. (2019) "Multiferroic ABO_3 Transition Metal Oxides: a Rare Interaction of Ferroelectricity and Magnetism," *Nanoscale Research Letters*. Springer New York LLC. Tersedia pada: https://doi.org/10.1186/s11671-019-2961-7.

Mahmudin, L., Wulandani, R., Riswan, M., Kurnia Sari, E., Dwi Jayanti, P.,

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KAJIAN MAGNETO-OPTIC SURFACE PLASMON RESONANCE GREEN-SYNTHESIZED NANOKOMPOSIT Fe3O4/Ag UNTUK DETEKSI BOVINE SERUM ALBUMIN
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Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Syahrul Ulum, M., Arifin, M. dan Suharyadi, E. (2024) "Silver nanoparticles-based localized surface plasmon resonance biosensor for Escherichia coli detection," *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*, 311, hal. 123985. Tersedia pada: https://doi.org/10.1016/j.saa.2024.123985.

Maier, S.A. (2007) *Plasmonics : fundamentals and applications*. New York: Springer. Tersedia pada: https://doi.org/10.1007/0-387-37825-1.

Manimegalai, S., Rajeswari, V.D., Parameswari, R., Nicoletti, M., Alarifi, S. dan Govindarajan, M. (2022) "Green synthesis, characterization and biological activity of *Solanum trilobatum*-mediated silver nanoparticles," *Saudi Journal of Biological Sciences*, 29(4), hal. 2131–2137. Tersedia pada: https://doi.org/10.1016/j.sjbs.2021.11.048.

Manouchehri, F., Izadmanesh, Y., Aghaee, E. dan Ghasemi, J.B. (2016) "Experimental, computational and chemometrics studies of BSA-vitamin B6 interaction by UV–Vis, FT-IR, fluorescence spectroscopy, molecular dynamics simulation and hard-soft modeling methods," *Bioorganic Chemistry*, 68, hal. 124–136. Tersedia pada: https://doi.org/10.1016/j.bioorg.2016.07.014.

Mascolo, M.C., Pei, Y. dan Ring, T.A. (2013) "Room Temperature Co-Precipitation Synthesis of Magnetite Nanoparticles in a Large ph Window with Different Bases," *Materials*, 6(12), hal. 5549–5567. Tersedia pada: https://doi.org/10.3390/ma6125549.

Meira, D.I., Barbosa, A.I., Borges, J., Reis, R.L., Correlo, V.M. dan Vaz, F. (2025) "Label-free localized surface plasmon resonance (LSPR) biosensor, based on Au-Ag NPs embedded in TiO_2 matrix, for detection of Ochratoxin-A (OTA) in wine," *Talanta*, 284, hal. 127238. Tersedia pada: https://doi.org/10.1016/j.talanta.2024.127238.

Milano, V., Riswan, M., Jayanti, P.D., Istiqomah, N.I., Zurnansyah, Rini, N.P., Anggraeni, K., Asri, N.S., Angel, J., Sharma, A., Ali, D., Chotimah dan Suharyadi, E. (2025) "Highly sensitive surface plasmon resonance-based sensor using green synthesized Fe_3O_4/rGO interface layer utilizing plant leaf extracts for alcohol compound detection," *Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy*, 339(April), hal. 126266. Tersedia pada: https://doi.org/10.1016/j.saa.2025.126266.

Mohammadzadeh-Asl, S., Aghanejad, A., de la Guardia, M., Dolatabadi, J.E.N. dan Keshtkar, A. (2021) "Surface plasmon resonance signal enhancement based on erlotinib loaded magnetic nanoparticles for evaluation of its interaction with human lung cancer cells," *Optics & Laser Technology*, 133, hal. 106521. Tersedia pada: https://doi.org/10.1016/j.optlastec.2020.106521.

Monazam, E.R., Breault, R.W. dan Siriwardane, R. (2014) "Kinetics of magnetite (Fe_3O_4) oxidation to hematite (Fe_2O_3) in air for chemical looping combustion," *Industrial and Engineering Chemistry Research*, 53(34), hal. 13320–13328. Tersedia pada: https://doi.org/10.1021/ie501536s.

UNIVERSITAS
GADJAH MADA
KAJIAN MAGNETO-OPTIC SURFACE PLASMON RESONANCE GREEN-SYNTHESIZED NANOKOMPOSIT Fe3O4/Ag UNTUK DETEKSI BOVINE SERUM ALBUMIN
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Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Mourdikoudis, S., Pallares, R.M. dan Thanh, N.T.K. (2018) "Characterization techniques for nanoparticles: Comparison and complementarity upon studying nanoparticle properties," *Nanoscale*, 10(27), hal. 12871–12934. Tersedia pada: https://doi.org/10.1039/c8nr02278j.

Murphy, M., Ting, K., Zhang, X., Soo, C. dan Zheng, Z. (2015) "Current Development of Silver Nanoparticle Preparation, Investigation, and Application in the Field of Medicine," *Journal of Nanomaterials*. Diedit oleh X. Li, 2015, hal. 696918. Tersedia pada: https://doi.org/10.1155/2015/696918.

Naskar, A., Lee, S., Ko, D., Kim, S. dan Kim, K. (2021) "Bovine Serum Albumin-Immobilized Black Phosphorus-Based γ-Fe_2O_3 Nanocomposites: A Promising Biocompatible Nanoplatform," *Biomedicines*, 9(8), hal. 858. Tersedia pada: https://doi.org/10.3390/biomedicines9080858.

Nguyen, M.D., Tran, H.V., Xu, S. dan Lee, T.R. (2021) "Fe_3O_4 nanoparticles: Structures, synthesis, magnetic properties, surface functionalization, and emerging applications," *Applied Sciences (Switzerland)*, 11(23). Tersedia pada: https://doi.org/10.3390/app112311301.

Nguyen, N.T., Tran, D.L., Nguyen, D.C., Nguyen, T.L., Ba, T.C., Nguyen, B.H., Ba, T.D., Pham, N.H., Nguyen, D.T., Tran, T.H. dan Pham, G.D. (2015) "Facile synthesis of multifunctional Ag/Fe_3O_4-CS nanocomposites for antibacterial and hyperthermic applications," *Current Applied Physics*, 15(11), hal. 1482–1487. Tersedia pada: https://doi.org/10.1016/j.cap.2015.08.016.

Omidfar, K., Ahmadi, A., Syedmoradi, L., Khoshfetrat, S.M. dan Larijani, B. (2020) "Point-of-care biosensors in medicine: a brief overview of our achievements in this field based on the conducted research in EMRI (endocrinology and metabolism research Institute of Tehran University of medical sciences) over the past fourteen years," *Journal of Diabetes & Metabolic Disorders*, 23(2), hal. 1455–1459. Tersedia pada: https://doi.org/10.1007/s40200-020-00668-0/Published.

Padmavathy, N., Chakraborty, I., Kumar, A., Roy, A., Bose, S. dan Chatterjee, K. (2022) "Fe_3O_4@Ag and Ag@Fe_3O_4 Core–Shell Nanoparticles for Radiofrequency Shielding and Bactericidal Activity," *ACS Applied Nano Materials*, 5(1), hal. 237–248. Tersedia pada: https://doi.org/10.1021/acsanm.1c02722.

Panre, A.M., Yahya, I.M., Juharni, J. dan Suharyadi, E. (2021) "Magneto-optic surface plasmon resonance properties of core-shell Fe_3O_4@Ag nanoparticles," *Advances in Natural Sciences: Nanoscience and Nanotechnology*, 12(4), hal. 045011. Tersedia pada: https://doi.org/10.1088/2043-6262/ac4996.

Paul, A., Basak, M., Ahmed, M.M., Singha, D. dan Bandyopadhyay, D. (2024) "Decoration of Nanoenabled Optoplasmonic Sensors on Flexible Micropatterned Surfaces," *IEEE Sensors Journal*, 24(17), hal. 27152–27159.

KAJIAN MAGNETO-OPTIC SURFACE PLASMON RESONANCE GREEN-SYNTHESIZED NANOKOMPOSIT Fe3O4/Ag UNTUK DETEKSI BOVINE SERUM ALBUMIN
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Tersedia pada: https://doi.org/10.1109/JSEN.2024.3429528.

Piro, N.S., Hamad, S.M., Mohammed, A.S. dan Barzinjy, A.A. (2023) "Green Synthesis Magnetite (FeO) Nanoparticles From *Rhus coriaria* Extract: A Characteristic Comparison With a Conventional Chemical Method," *IEEE Transactions on Nanobioscience*, 22(2), hal. 308–317. Tersedia pada: https://doi.org/10.1109/TNB.2022.3187344.

Prasad, C., Sreenivasulu, K., Gangadhara, S. dan Venkateswarlu, P. (2017) "Bio inspired green synthesis of Ni/Fe_3O_4 magnetic nanoparticles using *Moringa oleifera* leaves extract: A magnetically recoverable catalyst for organic dye degradation in aqueous solution," *Journal of Alloys and Compounds*, 700, hal. 252–258. Tersedia pada: https://doi.org/10.1016/j.jallcom.2016.12.363.

Prasad, T. dan Elumalai, E.K. (2011) "Biofabrication of Ag nanoparticles using *Moringa oleifera* leaf extract and their antimicrobial activity," *Asian Pacific Journal of Tropical Biomedicine*, 1(6), hal. 439–442. Tersedia pada: https://doi.org/https://doi.org/10.1016/S2221-1691(11)60096-8.

Prasdiantika, R. dan Susanto, S. (2017) "Preparasi Dan Penentuan Jenis Oksida Besi Pada Material Magnetik Pasir Besi Lansilowo," *Jurnal Teknosains*, 6(1), hal. 7. Tersedia pada: https://doi.org/10.22146/teknosains.11385.

Qin, W., Nagase, T., Umakoshi, Y. dan Szpunar, J.A. (2008) "Relationship between microstrain and lattice parameter change in nanocrystalline materials," *Philosophical Magazine Letters*, 88(3), hal. 169–179. Tersedia pada: https://doi.org/10.1080/09500830701840155.

Ramesh, M., Janani, R., Deepa, C. dan Rajeshkumar, L. (2023) "Nanotechnology-Enabled Biosensors: A Review of Fundamentals, Design Principles, Materials, and Applications," *Biosensors*. MDPI. Tersedia pada: https://doi.org/10.3390/bios13010040.

Ravindran, A., Singh, A., Raichur, A.M., Chandrasekaran, N. dan Mukherjee, A. (2010) "Studies on interaction of colloidal Ag nanoparticles with Bovine Serum Albumin (BSA)," *Colloids and Surfaces B: Biointerfaces*, 76(1), hal. 32–37. Tersedia pada: https://doi.org/10.1016/j.colsurfb.2009.10.005.

Reddy, N., Li, H., Hou, T., Bethu, M., Ren, Z. dan Zhang, Z. (2021) "Phytosynthesis of Silver Nanoparticles Using *Perilla frutescens* Leaf Extract: Characterization and Evaluation of Antibacterial, Antioxidant, and Anticancer Activities," *International Journal of Nanomedicine*, Volume 16, hal. 15–29. Tersedia pada: https://doi.org/10.2147/IJN.S265003.

Rezaeian, A. dan Hosseini Farzad, M. (2024) "Magneto-optical heterostructures with second resonance of transverse magneto-optical Kerr effect," *Scientific Reports*, 14(1), hal. 3493. Tersedia pada: https://doi.org/10.1038/s41598-024-54039-3.

Riswan, M., Adrianto, N., Yahya, I.M., Istiqomah, N.I., Panre, A.M., Wahyuni, S., Arifin, M., Santoso, I. dan Suharyadi, E. (2023) "Effect of electric field on localized surface plasmon resonance properties of Fe_3O_4/Ag composite

UNIVERSITAS
GADJAH MADA
KAJIAN MAGNETO-OPTIC SURFACE PLASMON RESONANCE GREEN-SYNTHESIZED NANOKOMPOSIT Fe3O4/Ag UNTUK DETEKSI BOVINE SERUM ALBUMIN
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nanoparticles," *Optik*, 293, hal. 171404. Tersedia pada: https://doi.org/10.1016/j.ijleo.2023.171404.

Riswan, M., Widianto, E., Maulina, H., Arifin, M., Santoso, I. dan Suharyadi, E. (2025) "Enhanced optical properties and localized surface plasmon resonance of magnetite/silver nanocomposites under electric field and wavelength variation," *Emergent Materials* [Preprint]. Tersedia pada: https://doi.org/10.1007/s42247-025-01085-w.

Rizal, C. dan Belotelov, V. (2019) "Sensitivity comparison of surface plasmon resonance (SPR) and magneto-optic SPR biosensors," *The European Physical Journal Plus*, 134(9), hal. 435. Tersedia pada: https://doi.org/10.1140/epjp/i2019-12819-3.

Rizal, C., Belotelov, V., Ignatyeva, D., Zvezdin, A.K. dan Pisana, S. (2019) "Surface Plasmon Resonance (SPR) to Magneto-Optic SPR," *Condensed Matter*, 4(2), hal. 50. Tersedia pada: https://doi.org/10.3390/condmat4020050.

Rizal, C., Pisana, S. dan Hrvoic, I. (2018) "Improved Magneto-Optic Surface Plasmon Resonance Biosensors," *Photonics*, 5(3), hal. 15. Tersedia pada: https://doi.org/10.3390/photonics5030015.

Rostamnezhad, F. dan Hossein Fatemi, M. (2022) "Comprehensive investigation of binding of some polycyclic aromatic hydrocarbons with bovine serum albumin: Spectroscopic and molecular docking studies," *Bioorganic Chemistry*, 120, hal. 105656. Tersedia pada: https://doi.org/10.1016/j.bioorg.2022.105656.

Roy, S.D., Das, K.C. dan Dhar, S.S. (2021) "Conventional to green synthesis of magnetic iron oxide nanoparticles; its application as catalyst, photocatalyst and toxicity: A short review," *Inorganic Chemistry Communications*, 134(November), hal. 109050. Tersedia pada: https://doi.org/10.1016/j.inoche.2021.109050.

Rubio, A.S. (2015) *Modified Au-based nanomaterials studied by surface plasmon resonance spectroscopy*. Switzerland: Springer. Tersedia pada: https://doi.org/10.1007/978-3-319-19402-8.

Ruíz-Baltazar, Á. de J. (2020) "Green synthesis assisted by sonochemical activation of Fe_3O_4-Ag nano-alloys: Structural characterization and studies of sorption of cationic dyes," *Inorganic Chemistry Communications*, 120(July). Tersedia pada: https://doi.org/10.1016/j.inoche.2020.108148.

S., S. dan Pesala, B. (2020) "Efficiency Enhancement of Betanin–Chlorophyll Cosensitized Natural Pigment Solar Cells Using Plasmonic Effect of Silver Nanoparticles," *IEEE Journal of Photovoltaics*, 10(1), hal. 124–134. Tersedia pada: https://doi.org/10.1109/JPHOTOV.2019.2953399.

Sadat, M.E., Bud'ko, S.L., Ewing, R.C., Xu, H., Pauletti, G.M., Mast, D.B. dan Shi, D. (2023) "Effect of Dipole Interactions on Blocking Temperature and Relaxation Dynamics of Superparamagnetic Iron-Oxide (Fe_3O_4)

UNIVERSITAS
GADJAH MADA
KAJIAN MAGNETO-OPTIC SURFACE PLASMON RESONANCE GREEN-SYNTHESIZED NANOKOMPOSIT Fe3O4/Ag UNTUK DETEKSI BOVINE SERUM ALBUMIN
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Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Nanoparticle Systems," *Materials*, 16(2), hal. 496. Tersedia pada: https://doi.org/10.3390/ma16020496.

Sajjad, S., Leghari, S.A.K., Ryma, N. dan Farooqi, S.A. (2018) "Green Synthesis of Metal-Based Nanoparticles and Their Applications," in *Green Metal Nanoparticles*. Wiley, hal. 23–77. Tersedia pada: https://doi.org/10.1002/9781119418900.ch2.

Sajjadi, M., Nasrollahzadeh, M. dan Mohammad Sajadi, S. (2017) "Green synthesis of Ag/Fe_3O_4 nanocomposite using *Euphorbia peplus* Linn leaf extract and evaluation of its catalytic activity," *Journal of Colloid and Interface Science*, 497, hal. 1–13. Tersedia pada: https://doi.org/10.1016/j.jcis.2017.02.037.

Samarentsis, A.G., Pantazis, A.K., Tsortos, A., Friedt, J.-M. dan Gizeli, E. (2020) "Hybrid Sensor Device for Simultaneous Surface Plasmon Resonance and Surface Acoustic Wave Measurements," *Sensors*, 20(21), hal. 6177. Tersedia pada: https://doi.org/10.3390/s20216177.

Sarani, M., Hamidian, K., Barani, M., Adeli-Sardou, M. dan Khonakdar, H.A. (2023) "α-Fe_2O_3@Ag and Fe_3O_4@Ag Core-Shell Nanoparticles: Green Synthesis, Magnetic Properties and Cytotoxic Performance," *ChemistryOpen*, 12(6), hal. 1–10. Tersedia pada: https://doi.org/10.1002/open.202200250.

Sari, E.K., Tumbelaka, R.M., Ardiyanti, H., Istiqomah, N.I., Chotimah dan Suharyadi, E. (2023) "Green synthesis of magnetically separable and reusable Fe_3O_4/Cdots nanocomposites photocatalyst utilizing *Moringa oleifera* extract and watermelon peel for rapid dye degradation," *Carbon Resources Conversion*, 6(4), hal. 274–286. Tersedia pada: https://doi.org/10.1016/j.crcon.2023.04.003.

Sato, K. dan Ishibashi, T. (2022) "Fundamentals of Magneto-Optical Spectroscopy," *Frontiers in Physics*, 10. Tersedia pada: https://doi.org/10.3389/fphy.2022.946515.

Sayed, F.A., Elsayed, H.A., Al-Dossari, M., Eissa, M.F., Mehaney, A. dan Aly, A.H. (2023) "Angular surface plasmon resonance-based sensor with a silver nanocomposite layer for effective water pollution detection," *Scientific Reports*, 13(1), hal. 21793. Tersedia pada: https://doi.org/10.1038/s41598-023-48837-4.

Shahid, M., Dumat, C., Khalid, S., Schreck, E., Xiong, T. dan Niazi, N.K. (2017) "Foliar heavy metal uptake, toxicity and detoxification in plants: A comparison of foliar and root metal uptake," *Journal of Hazardous Materials*, 325, hal. 36–58. Tersedia pada: https://doi.org/10.1016/j.jhazmat.2016.11.063.

Singh, R.S. dan Sarswat, P.K. (2023) "From fundamentals to applications: The development of magnetoplasmonics for next-generation technologies," *Materials Today Electronics*, 4, hal. 100033. Tersedia pada: https://doi.org/10.1016/j.mtelec.2023.100033.

KAJIAN MAGNETO-OPTIC SURFACE PLASMON RESONANCE GREEN-SYNTHESIZED NANOKOMPOSIT Fe3O4/Ag UNTUK DETEKSI BOVINE SERUM ALBUMIN
Rafiqa Wulandani, Prof. Dr.Eng. Edi Suharyadi, S.Si., M.Eng.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Sombut, P., Meier, M., Eder, M., Gamba, O., Schmid, M., Diebold, U., Franchini, C. dan Parkinson, G.S. (2025) "The surface phase diagram of Fe_3O_4(001) revisited," *RSC Applied Interfaces*, 4(001), hal. 673–683. Tersedia pada: https://doi.org/10.1039/d5lf00022j.

Suharyadi, E., Muzakki, A., Istiqomah, N.I., Puspitarum, D.L., Purnama, B. dan Djuhana, D. (2022) "Reusability of Photocatalytic $CoFe_2O_4$@ZnO Core–Shell Nanoparticles for Dye Degradation," *ECS Journal of Solid State Science and Technology*, 11(2), hal. 023004. Tersedia pada: https://doi.org/10.1149/2162-8777/ac4c7c.

Swastika, P.E., Ardiyanti, H., Zurnansyah, Darmawan, M.Y., Mahardika, L.J., Istiqomah, N.I., Wibowo, N.A. dan Suharyadi, E. (2025) "Enhanced detection of bovine serum albumin using single- and double-chip configuration of tunneling magnetoresistance–based biosensor with green-synthesized magnetite/Ag nanotag," *Microchimica Acta*, 192(3), hal. 143. Tersedia pada: https://doi.org/10.1007/s00604-025-07005-3.

Szymaszek, P., Fiedor, P., Chachaj-Brekiesz, A., Tyszka-Czochara, M., Świergosz, T. dan Ortyl, J. (2022) "Molecular interactions of bovine serum albumin (BSA) with pyridine derivatives as candidates for non-covalent protein probes: a spectroscopic investigation," *Journal of Molecular Liquids*, 347, hal. 118262. Tersedia pada: https://doi.org/10.1016/j.molliq.2021.118262.

Tabrani, R.A. ma. H., Antarnusa, G. dan Firdaus, F. (2025) "Facile synthesis of Fe_3O_4 via co-precipitation method: The role of *Moringa oleifera* in substituting chemical reducing agents," *Next Materials*, 8(July). Tersedia pada: https://doi.org/10.1016/j.nxmate.2025.100927.

Tang, C.Y. dan Yang, Z. (2017) "Transmission electron microscopy (TEM)," in *Membrane characterization*. Elsevier, hal. 145–159. Tersedia pada: https://doi.org/10.1016/B978-0-444-63776-5.00008-5.

Thangamani, N. dan Bhuvaneshwari, N. (2022) "Synthesis, characterization of Ag nanoparticles using the green approach towards degradation of environmental pollutant," *Journal of Materials Science: Materials in Electronics*, 33(12), hal. 9155–9162. Tersedia pada: https://doi.org/10.1007/s10854-021-07188-4.

Türkmen, D., Bakhshpour, M., Göktürk, I., Aşir, S., Yilmaz, F. dan Denizli, A. (2021) "Selective dopamine detection by SPR sensor signal amplification using gold nanoparticles," *New Journal of Chemistry*, 45(39), hal. 18296–18306. Tersedia pada: https://doi.org/10.1039/d1nj01938d.

Uba, L., Uba, S. dan Antonov, V.N. (2017) "Magneto-optical Kerr spectroscopy of noble metals," *Physical Review B*, 96(23), hal. 235132. Tersedia pada: https://doi.org/10.1103/PhysRevB.96.235132.

Valiev, U. V (2022) "On the relationship of the magneto-optical Kerr effect and galvanomagnetic Hall effect in the noble metals," *Optical Materials: X*, 15, hal. 100173. Tersedia pada: https://doi.org/https://doi.org/10.1016/j.omx.2022.100173.

KAJIAN MAGNETO-OPTIC SURFACE PLASMON RESONANCE GREEN-SYNTHESIZED NANOKOMPOSIT Fe3O4/Ag UNTUK DETEKSI BOVINE SERUM ALBUMIN
Rafiqa Wulandani, Prof. Dr.Eng. Edi Suharyadi, S.Si., M.Eng.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Wahyuni, S., Riswan, M., Adrianto, N., Dharmawan, M.Y., Tumbelaka, R.M., Cuana, R., Istiqomah, N.I., Jiananda, A., Garcia, S. dan Suharyadi, E. (2023) "Localized surface plasmon resonance properties dependence of green-synthesized Fe_3O_4/Ag composite nanoparticles on Ag concentration and an electric field for biosensor application," *Photonics and Nanostructures - Fundamentals and Applications*, 57(October), hal. 101191. Tersedia pada: https://doi.org/10.1016/j.photonics.2023.101191.

Wang, J., Song, D., Zhang, Hua, Zhang, J., Jin, Y., Zhang, Hanqi, Zhou, H. dan Sun, Y. (2013) "Studies of Fe_3O_4/Ag/Au composites for immunoassay based on surface plasmon resonance biosensor," *Colloids and Surfaces B: Biointerfaces*, 102, hal. 165–170. Tersedia pada: https://doi.org/10.1016/j.colsurfb.2012.08.040.

Wang, K., Zhou, C., Hong, Y. dan Zhang, X. (2012) "A review of protein adsorption on bioceramics," *Interface Focus*, 2(3), hal. 259–277. Tersedia pada: https://doi.org/10.1098/rsfs.2012.0012.

Wang, W., Mai, Z., Chen, Y., Wang, J., Li, L., Su, Q., Li, X. dan Hong, X. (2017) "A label-free fiber optic SPR biosensor for specific detection of C-reactive protein," *Scientific Reports*, 7(1). Tersedia pada: https://doi.org/10.1038/s41598-017-17276-3.

Wibowo, N.A., Juharni, J., Sabarman, H. dan Suharyadi, E. (2021) "A Spin-Valve GMR Based Sensor with Magnetite@silver Core-Shell Nanoparticles as a Tag for Bovine Serum Albumin Detection," *ECS Journal of Solid State Science and Technology*, 10(10), hal. 107002. Tersedia pada: https://doi.org/10.1149/2162-8777/ac2d4e.

Win, T.T., Khan, S., Bo, B., Zada, S. dan Fu, P. (2021) "Green synthesis and characterization of Fe_3O_4 nanoparticles using *Chlorella*-K01 extract for potential enhancement of plant growth stimulating and antifungal activity," *Scientific Reports*, 11(1), hal. 21996. Tersedia pada: https://doi.org/10.1038/s41598-021-01538-2.

Winsett, J., Moilanen, A., Paudel, K., Kamali, S., Ding, K., Cribb, W., Seifu, D. dan Neupane, S. (2019) "Quantitative determination of magnetite and maghemite in iron oxide nanoparticles using Mössbauer spectroscopy," *SN Applied Sciences*, 1(12), hal. 1636. Tersedia pada: https://doi.org/10.1007/s42452-019-1699-2.

Xu, J.-F., Yang, Y.-S., Jiang, A.-Q. dan Zhu, H.-L. (2022) "Detection Methods and Research Progress of Human Serum Albumin," *Critical Reviews in Analytical Chemistry*, 52(1), hal. 72–92. Tersedia pada: https://doi.org/10.1080/10408347.2020.1789835.

Yamamoto, S. dan Matsuda, I. (2017) "Measurement of the Resonant Magneto-Optical Kerr Effect Using a Free Electron Laser," *Applied Sciences*, 7(7), hal. 662. Tersedia pada: https://doi.org/10.3390/app7070662.

Yamaura, M., Camilo, R.., Sampaio, L.., Macêdo, M.., Nakamura, M. dan Toma,

KAJIAN MAGNETO-OPTIC SURFACE PLASMON RESONANCE GREEN-SYNTHESIZED NANOKOMPOSIT Fe3O4/Ag UNTUK DETEKSI BOVINE SERUM ALBUMIN
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Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

H.. (2004) "Preparation and characterization of (3-aminopropyl)triethoxysilane-coated magnetite nanoparticles," *Journal of Magnetism and Magnetic Materials*, 279(2–3), hal. 210–217. Tersedia pada: https://doi.org/10.1016/j.jmmm.2004.01.094.

Yeneayehu, K., Senbeta, T. dan Mesfin, B. (2021) "Enhancement of the optical response of Fe_3O_4@Ag core-shell nanoparticles," *Physica E: Low-dimensional Systems and Nanostructures*, 134, hal. 114822. Tersedia pada: https://doi.org/10.1016/j.physe.2021.114822.

Yesudasu, V., Pradhan, H.S. dan Pandya, R.J. (2021) "Recent progress in surface plasmon resonance based sensors: A comprehensive review," *Heliyon*, 7(3), hal. e06321. Tersedia pada: https://doi.org/10.1016/j.heliyon.2021.e06321.

Yew, Y.P., Shameli, K., Miyake, M., Ahmad Khairudin, N.B.B., Mohamad, S.E.B., Naiki, T. dan Lee, K.X. (2020) "Green biosynthesis of superparamagnetic magnetite Fe3O4 nanoparticles and biomedical applications in targeted anticancer drug delivery system: A review," *Arabian Journal of Chemistry*, 13(1), hal. 2287–2308. Tersedia pada: https://doi.org/10.1016/j.arabjc.2018.04.013.

Yildiz, A., Vatansever Bayramol, D., Atav, R., Ağirgan, A.Ö., Aydin Kurç, M., Ergünay, U., Mayer, C. dan Hadimani, R.L. (2020) "Synthesis and characterization of Fe_3O_4@Cs@Ag nanocomposite and its use in the production of magnetic and antibacterial nanofibrous membranes," *Applied Surface Science*, 521, hal. 146332. Tersedia pada: https://doi.org/10.1016/j.apsusc.2020.146332.

Yusefi, M., Shameli, K., Yee, O.S., Teow, S.Y., Hedayatnasab, Z., Jahangirian, H., Webster, T.J. dan Kuča, K. (2021) "Green synthesis of Fe_3O_4 nanoparticles stabilized by a *Garcinia mangostana* fruit peel extract for hyperthermia and anticancer activities," *International Journal of Nanomedicine*, 16, hal. 2515–2532. Tersedia pada: https://doi.org/10.2147/IJN.S284134.

Zhan, S., Li, C., Tian, H., Ma, C., Liu, H., Luo, J. dan Li, M. (2019) "Synthesis, Characterization and Dye Removal Behavior of Core–Shell–Shell Fe_3O_4/Ag/Polyoxometalates Ternary Nanocomposites," *Nanomaterials*, 9(9), hal. 1255. Tersedia pada: https://doi.org/10.3390/nano9091255.

Zhang, J., Huang, H., Song, G., Huang, K., Luo, Y., Liu, Q., He, X. dan Cheng, N. (2022) "Intelligent biosensing strategies for rapid detection in food safety: A review," *Biosensors and Bioelectronics*, 202. Tersedia pada: https://doi.org/10.1016/j.bios.2022.114003.

Zhao, H., Brown, P.H. dan Schuck, P. (2011) "On the Distribution of Protein Refractive Index Increments," *Biophysical Journal*, 100(9), hal. 2309–2317. Tersedia pada: https://doi.org/10.1016/j.bpj.2011.03.004.

Zhu, F.-Y., Wang, Q.-Q., Zhang, X.-S., Hu, W., Zhao, X. dan Zhang, H.-X. (2014) "3D nanostructure reconstruction based on the SEM imaging principle, and applications," *Nanotechnology*, 25(18), hal. 185705. Tersedia pada:

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