DAFTAR PUSTAKA

A. De Caro, C. (2015). UV / VIS Spectrophotometry - Fundamental and Application. *Mettler-Toledo International*, *September 2015*, 4–14. http://lcwu.edu.pk/ocd/cfiles/Chemistry/MSc/Chem-C 410/Fundamentals_UV_VIS.pdf.

A. E. H. LOVE, M.A., F.RS. (1897). *Theoretical mechanics an introductory treatise on the principles of dynamics with applications and numerous examples*. Cambrudge University.

Abayzeed, S. A., Smith, R. J., Webb, K. F., Somekh, M. G., & See, C. W. (2017). Sensitive detection of voltage transients using differential intensity surface plasmon resonance system. *Optics Express*, *25*(25), 31552. https://doi.org/10.1364/oe.25.031552

Abdul, M., Khan, M., Kumar, S., Ahamed, M., & Alrokayan, S. A. (2011). Structural and thermal studies of silver nanoparticles and electrical transport study of their thin films. *Nanoscale Research Letters* 6, 434. http://www.nanoscalereslett.com/content/6/1/434.

Abdullah, N., Khazali, K. A. M., & Sauli, Z. (2017). A review on the Skyrme Hartree-Fock model and related topics. *AIP Conference Proceedings*, *1830*. https://doi.org/10.1063/1.4980925.

Achanta, V. G. (2020). Reviews in Physics Surface waves at metal-dielectric interfaces : Material science perspective. *Reviews in Physics*, *5*(2), 100041. https://doi.org/10.1016/j.revip.2020.100041

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

Alarcon, E. I. (2015). Silver Nanoparticle Applications. In *Springer International Publishing*.

Amirjani, A., & Haghshenas, D. F. (2018). Sensors and Actuators B : Chemical Ag nanostructures as the surface plasmon resonance (SPR) - based sensors : A mechanistic study with an emphasis on heavy metallic ions detection. *Sensors & Actuators: B. Chemical*, *273*(November), 1768–1779. https://doi.org/10.1016/j.snb.2018.07.089

Arifin, M., Matsumoto, T., Pradipto, A. M., Akiyama, T., Ito, T., & Nakamura, K. (2020). First principles calculation of optical properties of transition metals for surface plasmon resonance application. *E-Journal of Surface Science and Nanotechnology*, *18*, 133–138. https://doi.org/10.1380/ejssnt.2020.133

Ashrafi, T. M. S., & Mohanty, G. (2025). Surface Plasmon Resonance Sensors: A Critical Review of Recent Advances, Market Analysis, and Future Directions.

Plasmonics, *0123456789*. https://doi.org/10.1007/s11468-024-02740-4

Asmara, T. C., Santoso, I., & Rusydi, A. (2014). Self-consistent iteration procedure in analyzing reflectivity and spectroscopic ellipsometry data of multilayered materials and their interfaces. *Review of Scientific Instruments*, *85*(12), 1–16. https://doi.org/10.1063/1.4897487

B.D. Cullity, C. D. G. (2009). *Introduction to Magnetic Materials (second edition)*. Wiley.

Baaha E. A. Saleh, M. C. T. (2012). Fundamental of photonics. In *Introduction to Adaptive Lenses* (pp. 275–276). https://doi.org/10.1002/9781118270080.scard

Baev, A., Prasad, P. N., Alam, M. Z., & Boyd, R. W. (2020). Dynamically controlling local field enhancement at an epsilon-near-zero/dielectric interface via nonlinearities of an epsilon-near-zero medium. *Nanophotonics*, *9*(16), 4831–4837. https://doi.org/10.1515/nanoph-2020-0490

Baida, H., Billaud, P., Marhaba, S., Christofilos, D., Cottancin, E., Crut, A., Lermé, J., Maioli, P., Pellarin, M., Broyer, M., Del Fatti, N., Vallée, F., Sánchez-Iglesias, A., Pastoriza-Santos, I., & Liz-Marzán, L. M. (2009). Quantitative determination of the size dependence of surface plasmon resonance damping in single Ag@SiO_2 nanoparticles. *Nano Letters*, *9*(10), 3463–3469. https://doi.org/10.1021/nl901672b

Bellessa, J., Bonnand, C., Plenet, J. C., & Mugnier, J. (2004). Strong coupling between surface plasmons and excitons in an organic semiconductor. *Physical Review Letters*, *93*(3), 3–6. https://doi.org/10.1103/PhysRevLett.93.036404

Bennett, H. S. (1965). Faraday Effect in Solids. *Physical Review*, *137*(2). https://doi.org/10.1103/PhysRev.137.A448.

Bhavsar, K., & Prabhu, R. (2019). Investigations on sensitivity enhancement of SPR biosensor using tunable wavelength and graphene layers. *IOP Conference Series: Materials Science and Engineering*, *499*(1). https://doi.org/10.1088/1757-899X/499/1/012008

Bindhu, M. R., & Umadevi, M. (2014). Surface plasmon resonance optical sensor and antibacterial activities of biosynthesized silver nanoparticles. *Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy*, *121*, 596–604. https://doi.org/10.1016/j.saa.2013.11.019

Bokuniaeva, A. O., & Vorokh, A. S. (2019). Estimation of particle size using the Debye equation and the Scherrer formula for polyphasic TiO_2 powder. *Journal of Physics: Conference Series*, *1410*(1). https://doi.org/10.1088/1742-6596/1410/1/012057

Bosshard, C., Spreiter, R., Degiorgi, L., & Günter, P. (2002). Infrared and Raman spectroscopy of the organic crystal DAST: Polarization dependence and contribution of molecular vibrations to the linear electro-optic effect. *Physical Review B - Condensed Matter and Materials Physics*, *66*(20), 1–9.

https://doi.org/10.1103/PhysRevB.66.205107

Callaway, C. S. W. and J. (1974). Band structure of nickel: Spin-orbit coupling, the Fermi surface, and the optical conductivity. *Physical Review B*, 9, 4897. https://doi.org/10.1103/PhysRevB.9.4897

Caron, A. (2016). Quantitative hardness measurement by instrumented AFM-indentation. *Journal of Visualized Experiments*, *2016*(117). https://doi.org/10.3791/54706

Cassim, S. M., Giustini, A. J., Baker, I., & Hoopes, P. J. (2011). Development of novel magnetic nanoparticles for hyperthermia cancer therapy. *Energy-Based Treatment of Tissue and Assessment VI*, *7901*, 790115. https://doi.org/10.1117/12.876514

Chatterjee, K., Sarkar, S., Jagajjanani Rao, K., & Paria, S. (2014). Core/shell nanoparticles in biomedical applications. *Advances in Colloid and Interface Science*, *209*(April 2017), 8–39. https://doi.org/10.1016/j.cis.2013.12.008

Chen, Q., Wang, Q., Wang, H., Ma, Q., & Chen, Q. (2018). Surface Plasmon Resonance Enhanced Faraday Rotation in Fe_3O_4/Ag Nanoparticles Doped Diamagnetic Glass. *Plasmonics*, *13*(1), 163–174. https://doi.org/10.1007/s11468-016-0496-7

Chiu, N.-F. (2022). The Current Status and Future Promise of SPR Biosensors. *Biosensors*, *12*(11), 933. https://doi.org/10.3390/bios12110933

Chlebus, R., Chylek, J., Ciprian, D., & Hlubina, P. (2018). Surface plasmon resonance based measurement of the dielectric function of a thin metal film. *Sensors (Switzerland)*, *18*(11), 8–19. https://doi.org/10.3390/s18113693

Choi, W. S., Seo, S. S. A., Kim, K. W., Noh, T. W., Kim, M. Y., & Shin, S. (2006). *Dielectric constants of Ir, Ru, Pt, and IrO_2: Contributions from bound charges*. 1–8. https://doi.org/10.1103/PhysRevB.74.205117

Chu, K. C., Chao, C. Y., Chen, Y. F., Wu, Y. C., & Chen, C. C. (2006). Electrically controlled surface plasmon resonance frequency of gold nanorods. *Applied Physics Letters*, *89*(10), 2012–2015. https://doi.org/10.1063/1.2335812

Cullity, B. D. (1956). Elements of X-Ray Diffraction Addison-Wesley Metallurgy Series. *Journal of Chemical Information and Modeling*, *53*, 1689–1699.

Degtyareva, V. F., & Afonikova, N. S. (2017). Simple metal and binary alloy phases based on the fcc structure: Electronic origin of distortions, superlattices and vacancies. *Crystals*, *7*(2). https://doi.org/10.3390/cryst7020034

Dizaji, A. N., Yilmaz, M., & Piskin, E. (2015). Silver or gold deposition onto magnetite nanoparticles by using plant extracts as reducing and stabilizing agents. *Artificial Cells, Nanomedicine, and Biotechnology*, *2*, 1–7. https://doi.org/10.3109/21691401.2015.1019672.

Dresselhaus, M. S. (1969). Optical Properties of Solids. *Physica Status Solidi (B)*, *34*(2), 815–824. https://doi.org/10.1002/pssb.19690340244

Du, J., & Jing, C. (2011). Preparation of Fe_3O_4@Ag SERS substrate and its application in environmental Cr(VI) analysis. *Journal of Colloid and Interface Science*, *358*(1), 54–61. https://doi.org/10.1016/j.jcis.2011.02.044

Du, J., & Jing, C. (2011). Preparation of Thiol Modified Fe_3O_4@Ag Magnetic SERS Probe for PAHs Detection and Identification. *The Journal of Physical Chemistry C*, *1*, 17829–17835. https://doi.org/10.1021/jp203181c.

Ebert, H. (1996). Magneto-optical effects in transition metal systems. Rep. Prog. Phys. 59 1665. 10.1088/0034-4885/59/12/003.

Fekete, S., Veuthey, J. L., Beck, A., & Guillarme, D. (2016). Hydrophobic interaction chromatography for the characterization of monoclonal antibodies and related products. *Journal of Pharmaceutical and Biomedical Analysis*, *130*, 3–18. https://doi.org/10.1016/j.jpba.2016.04.004

Fox, M. (2003). Optical properties of Solids. *Oxford University Press* (334).

Fu, E., Ramsey, S. A., & Yager, P. (2007). Dependence of the signal amplification potential of colloidal gold nanoparticles on resonance wavelength in surface plasmon resonance-based detection. *Analytica Chimica Acta*, *599*(1), 118–123. https://doi.org/10.1016/j.aca.2007.07.056

Fujiwara, H. (2007). Spectroscopic Ellipsometry: Principles and Applications. *Spectroscopic Ellipsometry: Principles and Applications*, 1–369. https://doi.org/10.1002/9780470060193

Fujiwara, H., & Collins, R. W. (2018). Spectroscopic Ellipsometry for Photovoltaics Volume 2: Applications and Optical Data of Solar Cell Materials. In *Springer Series in Optical Sciences* (Vol. 214). http://www.springer.com/series/624

Gandomi, Y. A., Aaron, D. S., Houser, J. R., Daugherty, M. C., Clement, J. T., Pezeshki, A. M., Ertugrul, T. Y., Moseley, D. P., & Mench, M. M. (2018). Critical Review—Experimental Diagnostics and Material Characterization Techniques Used on Redox Flow Batteries. *Journal of The Electrochemical Society*, *165*(5), A970–A1010. https://doi.org/10.1149/2.0601805jes

Gawali, S. L., Shelar, S. B., Gupta, J., Barick, K. C., & Hassan, P. A. (2021). Immobilization of protein on Fe3O4 nanoparticles for magnetic hyperthermia application. *International Journal of Biological Macromolecules*, *166*, 851–860. https://doi.org/10.1016/j.ijbiomac.2020.10.241

Gawande, M. B., Goswami, A., Asefa, T., Guo, H., Biradar, A. V., Peng, D. L., Zboril, R., & Varma, R. S. (2015). Core-shell nanoparticles: synthesis and applications in catalysis and electrocatalysis. *Chemical Society Reviews*, *44*(21), 7540–7590. https://doi.org/10.1039/c5cs00343a

Ghazanfari, M., Johar, F., & Yazdani, A. (2014). Synthesis and characterization of

Fe_3O_4@Ag core-shell : structural, morphological, and magnetic properties. *Journal of Ultrafine Grained and Nanostructured Materials*. *47*(2), 97–103. http://dx.doi.org/10.7508/jufgnsm.2014.02.006.

Greffet, J. J. (2012). Introduction to surface plasmon theory. In *Springer Series in Optical Sciences* (Vol. 167). https://doi.org/10.1007/978-3-642-28079-5_4

Griffiths, D. J., & Inglefield, C. (2005). Introduction to Electrodynamics . In *American Journal of Physics* (Vol. 73, Issue 6). https://doi.org/10.1119/1.4766311

Guo, S., Dong, S., & Wang, E. (2009). A general route to construct diverse multifunctional Fe_3O_4 metal hybrid nanostructures. *Chemistry - A European Journal*, *15*(10), 2416–2424. https://doi.org/10.1002/chem.200801942

Guo, X. (2014). Fe_3O_4@Au nanoparticles enhanced surface plasmon resonance for ultrasensitive immunoassay. *Sensors and Actuators, B: Chemical*, *205*, 276–280. https://doi.org/10.1016/j.snb.2014.08.055

Gupta, S., Paliwal, A., Gupta, V., & Tomar, M. (2017). *Surface plasmon resonance based electro optic measurement of SBN thin films*. *June*, 27. https://doi.org/10.1117/12.2273155

Gupta, S., Paliwal, A., Gupta, V., & Tomar, M. (2021). High figure of merit observed in SBN thin film based EO modulator employing WCSPR technique. *Optics and Laser Technology*, *137*(November 2020), 106816. https://doi.org/10.1016/j.optlastec.2020.106816

Gutiérrez-villarreal, J. M., Pineda-león, H. A., Valenzuela, M. F. S., Sosa-tinoco, I., & Castillo, S. J. (2023). Comparison of the Real Part of Dielectric Constants with Different Materials to Decrease the Emittance and a Virtual Dielectric Constant to Reproduce Reflectance. *Photonics*, 10, 994. https://doi.org/10.3390/photonics10090994.

Gutiérrez, Y., Espinoza, S., Zahradník, M., Khakurel, K., Resl, J., Cobet, C., Hingerl, K., Duwe, M., Thiesen, P., & Losurdo, M. (2022). Characterizing optical phase-change materials with spectroscopic ellipsometry and polarimetry. *Thin Solid Films*, *763*(August). https://doi.org/10.1016/j.tsf.2022.139580

Haes, A. J., Haynes, C. L., Mcfarland, A. D., & Schatz, G. C. (2005). Plasmonic Materials for Surface-Enhanced Sensing and Spectroscopy. *Materials Research Bulletin*, *30*(May), 368–375. http://dx.doi.org/10.1557/mrs2005.100.

Haes, A. J., Zou, S., Zhao, J., Schatz, G. C., & Van Duyne, R. P. (2006). Localized surface plasmon resonance spectroscopy near molecular resonances. *Journal of the American Chemical Society*, *128*(33), 10905–10914. https://doi.org/10.1021/ja063575q

Haider, T. (2017). A Review of Magneto-Optic Effects and Its Application.

International Journal of Electromagnetics and Applications, *7*(1), 17–24. https://doi.org/10.5923/j.ijea.20170701.03

Hansen, W. N. (1968). Electric Fields Produced by the Propagation of Plane Coherent Electromagnetic Radiation in a Stratified Medium. *Journal of the Optical Society of America*, *58*(3), 380. https://doi.org/10.1364/josa.58.000380

Hasan, M., Lyon, K., Trombley, L., Smith, C., & Zakhidov, A. (2019). Thickness measurement of multilayer film stack in perovskite solar cell using spectroscopic ellipsometry. *AIP Advances*, *9*(12). https://doi.org/10.1063/1.5125686

Hentschel, T. W., Kononov, A., Baczewski, A. D., & Hansen, S. B. (2025). Statistical inference of collision frequencies from x-ray Thomson scattering spectra. *Physics of Plasmas*, *32*(1). https://doi.org/10.1063/5.0235628

Herawati, A. (2023). Dielectric Function Model for Data Analysis of Thin Film Materials Using Spectroscopic Ellipsometer. *Yayasan Sahabat Alam Rafflesia.*

Herawati, A., Khasanah, R. A. N., Maulana, L. Z., Suharyadi, E., & Santoso, I. (2020). Simple and low-cost rotating analyzer ellipsometer (RAE) for wavelength dependent optical constant characterization of novel materials. *Key Engineering Materials*, *840 KEM*(2017), 392–398. https://doi.org/10.4028/www.scientific.net/kem.840.392

Hidayat, A., Elyani, W., & Puspitaningrum, A. (2019). Electro-optics Behaviors of Fe_3O_4 Ferrofluids: A Preliminary Study. *IOP Conference Series: Materials Science and Engineering*, *515*(1). https://doi.org/10.1088/1757-899X/515/1/012092

Hirsch, L. R., Gobin, A. M., Lowery, A. R., Tam, F., Drezek, R. A., Halas, N. J., & West, J. L. (2006). Metal nanoshells. *Annals of Biomedical Engineering*, *34*(1), 15–22. https://doi.org/10.1007/s10439-005-9001-8

Homola, J. (2006). Surface plasmon resonance based sensors, Springer series on chemical sensors and biosensor/Methods and Applications. In *Springer tracts in modern physics, Springer-Verlag Berlin ed., Heidelberg NY* (Vol. 4).

Hong, Y., Huh, Y. M., Yoon, D. S., & Yang, J. (2012). Nanobiosensors based on localized surface plasmon resonance for biomarker detection. *Journal of Nanomaterials*, *2012*(1). https://doi.org/10.1155/2012/759830

Howe, C. L., Webb, K. F., Abayzeed, S. A., Anderson, D. J., Denning, C., & Russell, N. A. (2019). Surface plasmon resonance imaging of excitable cells. *Journal of Physics D: Applied Physics*, *52*(10), aaf849. https://doi.org/10.1088/1361-6463/aaf849

Hsieh, K. C., Chen, H. L., Wan, D. H., & Shieh, J. (2008). Active modulation of surface plasmon resonance wavelengths by applying an electric field to gold nanoparticle-embedded ferroelectric films. *Journal of Physical Chemistry C*, *112*(31), 11673–11678. https://doi.org/10.1021/jp711828k

Hu, W. P., Chen, S. J., Huang, K. T., Hsu, J. H., Chen, W. Y., Chang, G. L., & Lai, K. A. (2004). A novel ultrahigh-resolution surface plasmon resonance biosensor with an Au nanocluster-embedded dielectric film. *Biosensors and Bioelectronics*, *19*(11), 1465–1471. https://doi.org/10.1016/j.bios.2003.12.001

Husain, S., Megasari, K., Suharyadi, E., & Abraha, K. (2012). Deteksi Biomolekul dengan Menggunakan Fenomena Surface Plasmon Resonance (SPR) pada Sistem Logam / Nanopartikel Magnetik Fe_3O_4. *Prosiding Pertemuan Ilmiah XXVI HFI Jateng & DIY*, *April*, 99–102.

I Ketut Agus Putra Dana, P. D. J., Suharyadi, E., & Santoso, I. (2022). A compact modular multi-wavelength (200-850nm) rotating-analyzer ellipsometer for optical constant characterization of nanostructured materials. *European Journal of Physics*, 1–6.

I Putu Tedy Indrayana, M. T. T. (2023). Particles Size and Lattice Strain Effect on the Optical Constants of Fe_3O_4 Nanoparticles, *Indonesian Physical Review*, *6*(1), 114–123. http://dx.doi.org/10.29303/ipr.v4i1.71

Idisi, D. O., Aigbe, U. O., Chilukusha, D., Mwakikunga, B. W., & Asante, J. K. O. (2024). Photoresponse properties of green-assisted Fe_3O_4 nanoparticles supported activated carbon. *Diamond and Related Materials*, *149*(August), 111584. https://doi.org/10.1016/j.diamond.2024.111584

Ilyas, S., Heryanto, Abdullah, B., & Tahir, D. (2019). X-ray diffraction analysis of nanocomposite Fe3O4/activated carbon by Williamson–Hall and size-strain plot methods. *Nano-Structures and Nano-Objects*, *20*, 100396. https://doi.org/10.1016/j.nanoso.2019.100396

Indrayana, I. P. T. (2020). Synthesis, Characterization, And Application Of Fe3o4 Nanoparticles As A Signal Amplifier Element In Surface Plasmon Resonance Biosensing. *Journal Online of Physics*, *5*(2), 65–74. https://doi.org/10.22437/jop.v5i2.8259

Inkson, B. J. (2016). Scanning Electron Microscopy (SEM) and Transmission Electron Microscopy (TEM) for Materials Characterization. In *Materials Characterization Using Nondestructive Evaluation (NDE) Methods*. Elsevier Ltd. https://doi.org/10.1016/B978-0-08-100040-3.00002-X

Janith, G. I., Herath, H. S., Hendeniya, N., Attygalle, D., Amarasinghe, D. A. S., Logeeshan, V., Wickramasinghe, P. M. T. B., & Wijayasinghe, Y. S. (2023). Advances in surface plasmon resonance biosensors for medical diagnostics: An overview of recent developments and techniques. *Journal of Pharmaceutical and Biomedical Analysis Open*, *2*(July), 100019. https://doi.org/10.1016/j.jpbao.2023.100019

Jia, Y., Liao, Y., & Cai, H. (2022). Sensitivity Improvement of Surface Plasmon

Resonance Biosensors with GeS-Metal Layers. *Electronics (Switzerland)*, *11*(3). https://doi.org/10.3390/electronics11030332

Jin, Y., Yang, L., Pan, C., Shi, Z., Cui, B., Xu, P., & Yang, Y. (2021). *Strong coupling of a plasmonic nanoparticle to a semiconductor nanowire*. *10*(11), 2875–2881. Nanophotonics, 10(11): 2875–2881. https://doi.org/10.1515/nanoph-2021-0214.

Jinno, S., Kitora, S., Toki, H., & Abe, M. (2019). Time-domain Formulation of a Multi-layer Plane Circuit Coupled with Lumped-parameter Circuits using Maxwell Equations. *Scientific Reports*, *9*(1), 1–10. https://doi.org/10.1038/s41598-019-53288-x

Juharni, J., Maulana, I., Suharyadi, E., Kato, T., & Iwata, S. (2021). The Effect of Ag Concentration of Core-Shell Fe_3O_4@Ag Nanoparticles for Sensitivity Enhancement of Surface Plasmon Resonance (SPR) - Based Biosensor. *Key Engineering Materials*. *884*, 337–341. https://doi.org/10.4028/www.scientific.net/KEM.884.337

Juharni, Yahya, I. M., Suharyadi, E., Kato, T., & Iwata, S. (2021). Microstructures, Absorption Spectra, and Magnetic Properties of Core-shell Fe_3O_4@Ag Nanoparticles for Enhancing Sensitivity of Surface Plasmon Resonance (SPR) Sensor. *International Journal of Nanoelectronics and Materials*, *14*(3), 209–218.

Kaloari, R. M., Widianto, E., Dana, I. K. A. P., Lukmantoro, A., Suharyadi, E., Kato, T., Iwata, S., Absor, M. U., & Santoso, I. (2023). Anomalous optical properties of bismuth ultrathin film using spectroscopic ellipsometry in the visible - Ultraviolet range. *Thin Solid Films*, *773*(April), 139825. https://doi.org/10.1016/j.tsf.2023.139825

Karki, B., Jha, A., Pal, A., & Srivastava, V. (2022). Sensitivity enhancement of refractive index-based surface plasmon resonance sensor for glucose detection. *Optical and Quantum Electronics*, *54*(9), 1–13. https://doi.org/10.1007/s11082-022-04004-z

Karki, B., Sarkar, P., Dhiman, G., Srivastava, G., & Kumar, M. (2023). Platinum Diselenide and Graphene-Based Refractive Index Sensor for Cancer Detection. *Plasmonics*, *0123456789*. https://doi.org/10.1007/s11468-023-02051-0

Karki, B., Uniyal, A., Sarkar, P., Pal, A., & Yadav, R. B. (2023). Sensitivity Improvement of Surface Plasmon Resonance Sensor for Glucose Detection in Urine Samples Using Heterogeneous Layers: An Analytical Perspective. *Journal of Optics (India)*. https://doi.org/10.1007/s12596-023-01418-0

Karki, B., Uniyal, A., Srivastava, G., & Pal, A. (2023). Black Phosphorous and Cytop Nanofilm-Based Long-Range SPR Sensor with Enhanced Quality Factor. *Journal of Sensors*, *2023*. https://doi.org/10.1155/2023/2102915

Kegl, T., Ban, I., Lobnik, A., & Košak, A. (2019). Synthesis and characterization of novel Γ-Fe_2O_3-NH_4OH@SiO_2(APTMS) nanoparticles for dysprosium adsorption. *Journal of Hazardous Materials*, *378*(March). https://doi.org/10.1016/j.jhazmat.2019.120764

Khasnaah, R. A. N., Herawati, A., Maulana, L. Z., Suyono, E. A., Suharyadi, E., Santoso, I., Kato, T., & Iwata, S. (2020). Spectroscopic ellipsometry based biosensor on gold thin film for detection of microalgae. *Key Engineering Materials*, *840 KEM*, 412–417. https://doi.org/10.4028/www.scientific.net/kem.840.412

Kik, D. J. H. and P. G. (2019). *Light-Matter Interaction*. The College of Optics and Photonics, University of Central Florida.

Korec, J., Stasiewicz, K. A., Jaroszewicz, L. R., & Garbat, K. (2020). Spr effect controlled by an electric field in a tapered optical fiber surrounded by a low refractive index nematic liquid crystal. *Materials*, *13*(21), 1–14. https://doi.org/10.3390/ma13214942

Kossoy, A., Merk, V., Simakov, D., Leosson, K., Kéna-Cohen, S., & Maier, S. A. (2015). Optical and Structural Properties of Ultra-thin Gold Films. *Advanced Optical Materials*, *3*(1), 71–77. https://doi.org/10.1002/adom.201400345

Krupka, J. (2025). Materials with Negative Permittivity or Negative Permeability — Review , Electrodynamic Modelling, and Applications. *Materials*, 18, 423. https://doi.org/10.3390/ma18020423

Kumar Maharana, P., Bharadwaj, S., & Jha, R. (2013). Electric field enhancement in surface plasmon resonance bimetallic configuration based on chalcogenide prism. *Journal of Applied Physics*, *114*(1). https://doi.org/10.1063/1.4812732

Kumar, V., Raghuwanshi, S. K., & Kumar, S. (2024). Nanocomposite Thin Film-Based Surface Plasmon Sensor for Detection of Ethanol in Petrochemical Industries. *IEEE Transactions on Plasma Science*, *52*(2), 328–335. https://doi.org/10.1109/TPS.2023.3337175

Kuryoz, P. Y., Poperenko, L. V., & Kravets, V. G. (2013). Correlation between dielectric constants and enhancement of surface plasmon resonances for thin gold films. *Physica Status Solidi (A) Applications and Materials Science*, *210*(11), 2445–2455. https://doi.org/10.1002/pssa.201329272

Kwizera, E. A., Chaffin, E., Wang, Y., & Huang, X. (2017). Synthesis and properties of magnetic-optical core-shell nanoparticles. *RSC Advances*, *7*(28), 17137–17153. https://doi.org/10.1039/c7ra01224a

Kyaw, H. H., Boonruang, S., Mohammed, W. S., & Dutta, J. (2015). Design of electric-field assisted surface plasmon resonance system for the detection of heavy metal ions in water. *AIP Advances*, *5*(10). https://doi.org/10.1063/1.4934934

Lee, C., Park, Y., & Park, J. Y. (2019). Hot electrons generated by intraband and interband transition detected using a plasmonic Cu/TiO_2 nanodiode. *RSC Advances*, *9*(32), 18371–18376. https://doi.org/10.1039/c9ra02601k

Lee, S. Y., Nakaya, K., Hayashi, T., & Hara, M. (2009). Quantitative study of the gold-enhanced fluorescence of CdSe/ZnS nanocrystals as a function of distance using an AFM probe. *Physical Chemistry Chemical Physics*, *11*(21), 4403–4409. https://doi.org/10.1039/b819903e

Lee, Y. M., Kim, S. E., & Park, J. E. (2023). Strong coupling in plasmonic metal nanoparticles. *Nano Convergence*. https://doi.org/10.1186/s40580-023-00383-5

Lewis, W. (2009). Ultraviolet Spectroscopy. In *Paint Testing Manual* (pp. 545-545–2). https://doi.org/10.1520/stp37187s

Li, N., Huang, G., Shen, X., Xiao, H., & Fu, S. (2013). Controllable fabrication and magnetic-field assisted alignment of Fe_3O_4-coated Ag nanowires via a facile co-precipitation method†. *Journal of Materials Chemistry C*, *Di*, 4879–4884. https://doi.org/10.1039/c3tc30270a

Lioubimov, V., Kolomenskii, A., Mershin, A., Nanopoulos, D. V., & Schuessler, H. A. (2004). Effect of varying electric potential on surface-plasmon resonance sensing. *Applied Optics*, *43*(17), 3426–3432. https://doi.org/10.1364/AO.43.003426.

Loiseau, A., Asila, V., Boitel-Aullen, G., Lam, M., Salmain, M., & Boujday, S. (2019). Silver-based plasmonic nanoparticles for and their use in biosensing. *Biosensors*, *9*(2), 1–40. https://doi.org/10.3390/bios9020078

Loo, Y. Y., Chieng, B. W., Nishibuchi, M., & Radu, S. (2012). Synthesis of silver nanoparticles by using tea leaf extract from Camellia Sinensis. *International Journal of Nanomedicine*, *7*(August 2016), 4263–4267. https://doi.org/10.2147/IJN.S33344

Lopatynskyi, A. M., Lopatynska, O. G., Guo, L. J., & Chegel, V. I. (2011). Localized surface plasmon resonance biosensor-part I: Theoretical study of sensitivity-extended mie approach. *IEEE Sensors Journal*, *11*(2), 361–369. https://doi.org/10.1109/JSEN.2010.2057418

Lu, H., Xiong, H., Huang, Z., Li, Y., Dong, H., He, D., Dong, J., Guan, H., Qiu, W., Zhang, X., Zhu, W., Yu, J., Luo, Y., Zhang, J., & Chen, Z. (2019). Electron-plasmon interaction on lithium niobate with gold nanolayer and its field distribution dependent modulation. *Optics Express*, *27*(14), 19852. https://doi.org/10.1364/oe.27.019852

Ma, L., Xu, S., Wang, C., Wang, H., Zou, S., & Su, M. (2017). Electrically Modulated Localized Surface Plasmon around Self-Assembled-Monolayer-Covered Nanoparticles. *Langmuir*, *33*(6), 1437–1441. https://doi.org/10.1021/acs.langmuir.6b03537

Ma, P., Luo, Q., Chen, J., Gan, Y., Du, J., Ding, S., Xi, Z., & Yang, X. (2012).

Intraperitoneal injection of magnetic Fe3O4 - nanoparticle induces hepatic and renal tissue injury via oxidative stress in mice. *International Journal of Nanomedicine*, 4809–4818.

Ma, S.-C., Gupta, R., Ondevilla, N. A. P., Barman, K., Lee, L.-Y., Chang, H.-C., & Huang, J.-J. (2023). Voltage-modulated surface plasmon resonance biosensors integrated with gold nanohole arrays. *Biomedical Optics Express*, *14*(1), 182. https://doi.org/10.1364/boe.478164

Mahmudin, L., Suharyadi, E., Utomo, A. B. S., & Abraha, K. (2015). Optical Properties of Silver Nanoparticles for Surface Plasmon Resonance (SPR)-Based Biosensor Applications. *Journal of Modern Physics*, *06*(08), 1071–1076. https://doi.org/10.4236/jmp.2015.68111

Mahmudin, L., Wulandani, R., Riswan, M., Kurnia Sari, E., Dwi Jayanti, P., Syahrul Ulum, M., Arifin, M., & Suharyadi, E. (2024). Silver nanoparticles-based localized surface plasmon resonance biosensor for Escherichia coli detection. *Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy*, *311*(1), 123985. https://doi.org/10.1016/j.saa.2024.123985

Maier, S. A. (n.d.). Plasmonics: Fundamental and Applications. In *Centre forPhotonics andPhotonic Materials DepartmentofPhysics, University of Bath, UK*.

Majidi, M. A., Thoeng, E., Gogoi, P. K., Wendt, F., Wang, S. H., Santoso, I., Asmara, T. C., Handayani, I. P., Van Loosdrecht, P. H. M., Nugroho, A. A., Rübhausen, M., & Rusydi, A. (2013). Temperature-dependent and anisotropic optical response of layered Pr 0.5Ca1.5MnO4 probed by spectroscopic ellipsometry. *Physical Review B - Condensed Matter and Materials Physics*, *87*(23), 1–5. https://doi.org/10.1103/PhysRevB.87.235135

Manavalan, B. A., Kuppusamy, P. G., Uniyal, A., Pal, A., & Karki, B. (2022). Monitoring hemoglobin levels in human blood samples using an MXene-ZnO-graphene based Surface plasmon resonance biosensor. *Research Square*, 0–15. https://doi.org/10.21203/rs.3.rs-1422355/v1.

Mariam, J., Dongre, P. M., & Kothari, D. C. (2011). Study of interaction of silver nanoparticles with bovine serum albumin using fluorescence spectroscopy. *Journal of Fluorescence*, *21*(6), 2193–2199. https://doi.org/10.1007/s10895-011-0922-3

Maribel G. Guzmán, Jean Dille, S. G., & Abstract—Silver. (2010). Synthesis of silver nanoparticles by chemical reduction method and their antibacterial activity. *International Journal of Chemical and Biomolecular Engineering*, *27*(2), 688–692. https://doi.org/10.1007/s11814-010-0067-0

Maulana, L. Z., Megasari, K., Suharyadi, E., Anugraha, R., Abraha, K., & Santoso, I. (2017). Inexpensive Home-Made Single Wavelength Ellipsometer (λ = 633 nm) for Measuring the Optical Constant of Nanostructured Materials. *IOP Conference Series: Materials Science and Engineering*, *202*(1).

https://doi.org/10.1088/1757-899X/202/1/012031

Mayer, K. M., & Hafner, J. H. (2011). Localized surface plasmon resonance sensors. *Chemical Reviews*, *111*(6), 3828–3857. https://doi.org/10.1021/cr100313v

Megasari, K., Widianto, E., Efelina, V., Abraha, K., Wee, A. T. S., Rusydi, A., & Santoso, I. (2016). Calculation of dielectric constant of buffer layer graphene on SiC measured by spectroscopy ellipsometry using Gauss-Newton numerical inversion method. *AIP Conference Proceedings*, *1755*. https://doi.org/10.1063/1.4958587

Ming, W., Blair, S., & Liu, F. (2014). Quantum size effect on dielectric function of ultrathin metal film: A first-principles study of Al(1 1 1). *Journal of Physics Condensed Matter*, *26*(50). https://doi.org/10.1088/0953-8984/26/50/505302

Mohammadzadeh-Asl, S., Aghanejad, A., de la Guardia, M., Ezzati Nazhad Dolatabadi, J., & 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 and Laser Technology*, *133*(August 2020), 106521. https://doi.org/10.1016/j.optlastec.2020.106521

Monazam, E. R., Breault, R. W., & Siriwardane, R. (2014). Kinetics of magnetite (Fe3O4) oxidation to hematite (Fe_2O_3) in air for chemical looping combustion. *Industrial and Engineering Chemistry Research*, *53*(34), 13320–13328. https://doi.org/10.1021/ie501536s

Morales, M. P., Verdangure, S. V.-, Montero, M. I., Serna, C. J., Roig, a., Casas, L., Martinez, B., & Sandiumenge, F. (1999). Surface and Internal Spin Canting in. *Chemistry of Materials*, *11*(12), 3058–3064.

Mukhtar, W. M., Halim, R. M., & Hassan, H. (2017). Optimization of SPR signals: Monitoring the physical structures and refractive indices of prisms. *EPJ Web of Conferences*, *162*. https://doi.org/10.1051/epjconf/201716201001

Mukhtar, W. M., Murat, N. F., & Samsuri, N. D. (2018). *Maximizing the response of SPR signal : A vital role of light excitation wavelength Maximizing the Response of SPR Signal : A Vital Role of Light Excitation Wavelength*. *020104*(September).

Muzzi, B., Albino, M., Gabbani, A., Omelyanchik, A., Kozenkova, E., Petrecca, M., Innocenti, C., Balica, E., Lavacchi, A., Scavone, F., Anceschi, C., Petrucci, G., Ibarra, A., Laurenzana, A., Pineider, F., Rodionova, V., & Sangregorio, C. (2022). Star-Shaped Magnetic-Plasmonic Au@Fe_3O_4 Nano-Heterostructures for Photothermal Therapy. Applied Materials and Interfaces, 14, 29087−29098. https://doi.org/10.1021/acsami.2c04865

Nakamura, K., Ito, T., Freeman, A. J., Zhong, L., & Fernandez-de-castro, J. (2003). *Enhancement of magnetocrystalline anisotropy in ferromagnetic Fe films by intra-atomic noncollinear magnetism*. *0*, 1–6.

https://doi.org/10.1103/PhysRevB.67.014420

Ngoc, T., Nguyen, L., Vy, T., Vuong, T., & Hung, P. (2019). Progress in Organic Coatings Antimicrobial activity of acrylic polyurethane/Fe_3O_4-Ag nanocomposite coating. *Progress in Organic Coatings*, *132*(February), 15–20. https://doi.org/10.1016/j.porgcoat.2019.02.023

Ning, S., Wang, S., Liu, Z., Zhang, N., Yang, B., & Zhang, F. (2024). Study on Magnetic and Plasmonic Properties of Fe_3O_4-PEI-Au and Fe_3O_4-PEI-Ag Nanoparticles. *Materials*, *17*(2). https://doi.org/10.3390/ma17020509

Nishi, Y., Watanabe, R., Sasaki, S., Okada, A., Seto, K., & Kobayashi, T. (2021). *applied sciences Electric-Field Induced Shift in the Plasmon Resonance Due to the Interfacial Pockels Effect of Water on a Silver Surface †*. 11, 2152. https://doi.org/10.3390/app11052152

Nurrohman, D. T., & Chiu, N.-F. (2020). Surface Plasmon Resonance Biosensor Performance Analysis on 2D Material Based on Graphene and Transition Metal Dichalcogenides. *ECS Journal of Solid State Science and Technology*, *9*(11), 115023. https://doi.org/10.1149/2162-8777/abb419

Nurrohman, D. T., Oktivina, M., Suharyadi, E., Suyono, E. A., & Abraha, K. (2017). Monitoring Microalgae Population Growth by using Fe3O4 Nanoparticles-based Surface Plasmon Resonance (SPR) Biosensor. *IOP Conference Series: Materials Science and Engineering*, *202*(1). https://doi.org/10.1088/1757-899X/202/1/012077

Offersgaard, J. F., & Skettrup, T. (1993). Electro-optic properties of thin metallic layers. *Journal of the Optical Society of America B*, *10*(8), 1457. https://doi.org/10.1364/josab.10.001457.

Ogawa, Y., Ojima, M., Murata, K., Fujiwara, Y., Kubo, H., Yoshida, H., Fujii, A., & Ozaki, M. (2011). Electric field tuning of surface plasmon resonance using vertical alignment liquid crystals on a silver grating structure. *Molecular Crystals and Liquid Crystals*, *545*(December 2014), 85/[1309]-90/[1314]. https://doi.org/10.1080/15421406.2011.571978

Oktivina, M., Nurrohman, D. T., Rinto, A. N. Q. Z., Suharyadi, E., & Abraha, K. (2017). Effect of Fe3O4 Magnetic Nanoparticle Concentration on the Signal of Surface Plasmon Resonance (SPR) Spectroscopy. *IOP Conference Series: Materials Science and Engineering*, *202*(1). https://doi.org/10.1088/1757-899X/202/1/012032

Omar, N. A. S., Fen, Y. W., Abdullah, J., Sadrolhosseini, A. R., Kamil, Y. M., Fauzi, N. I. M., Hashim, H. S., & Mahdi, M. A. (2020). Quantitative and selective surface plasmon resonance response based on a reduced graphene oxide–polyamidoamine nanocomposite for detection of dengue virus E-proteins. *Nanomaterials*, *10*(3), 1–14. https://doi.org/10.3390/nano10030569

Ong, B. H., Yuan, X., Tjin, S. C., Zhang, J., & Ng, H. M. (2006). Optimised film thickness for maximum evanescent field enhancement of a bimetallic film surface plasmon resonance biosensor. *Sensors and Actuators, B: Chemical*, *114*(2), 1028–1034. https://doi.org/10.1016/j.snb.2005.07.064

Orozco-Hernández, G., Olaya-Flórez, J., Pineda-Vargas, C., Alfonso, J. E., & Restrepo-Parra, E. (2020). Structural, chemical and electrochemical studies of bismuth oxide thin films growth via Unbalanced Magnetron Sputtering. *Surfaces and Interfaces*, *21*(July), 100627. https://doi.org/10.1016/j.surfin.2020.100627

Pagnotto, D., Muravitskaya, A., Benoit, D. M., Bouillard, J. S. G., & Adawi, A. M. (2023). Stark Effect Control of the Scattering Properties of Plasmonic Nanogaps Containing an Organic Semiconductor. *ACS Applied Optical Materials*, *1*(1), 500–506. https://doi.org/10.1021/acsaom.2c00135

Pal, A., & Jha, A. (2021). A theoretical analysis on sensitivity improvement of an SPR refractive index sensor with graphene and barium titanate nanosheets. *Optik*, *231*(August 2020), 166378. https://doi.org/10.1016/j.ijleo.2021.166378

Panre, A. M., Yahya, I. M., & Juharni, J. (2022). Magneto-optic surface plasmon resonance properties of core-shell Fe_3O_4@Ag nanoparticles. *Advances in Natural Sciences: Nanoscience and Nanotechnology*, *12*(4), 45011. https://doi.org/10.1088/2043-6262/ac4996

Patching, S. G. (2014). Surface plasmon resonance spectroscopy for characterisation of membrane protein-ligand interactions and its potential for drug discovery. *Biochimica et Biophysica Acta - Biomembranes*, *1838*(1 PARTA), 43–55. https://doi.org/10.1016/j.bbamem.2013.04.028

Peña-Rodríguez, O., Caro, M., Rivera, A., Olivares, J., Perlado, J. M., & Caro, A. (2014). Optical properties of Au-Ag alloys: An ellipsometric study. *Optical Materials Express*, *4*(2), 403. https://doi.org/10.1364/ome.4.000403

Perdew, J. P., Burke, K., & Ernzerhof, M. (2018). Generalized Gradient Approximation Made Simple John. *Physical Review Letters*, *10*(48), 41525–41534. https://doi.org/10.1021/acsami.8b15784

Piliarik, M., & Homola, J. (2009). Surface plasmon resonance (SPR) sensors: approaching their limits? *Optics Express*, *17*(19), 16505. https://doi.org/10.1364/oe.17.016505

Podraza, N. J., & Jellison, G. E. (2016). Ellipsometry. *Encyclopedia of Spectroscopy and Spectrometry*, 482–489. https://doi.org/10.1016/B978-0-12-409547-2.10991-6

Premaratne, G., Dharmaratne, A. C., Al Mubarak, Z. H., Mohammadparast, F., Andiappan, M., & Krishnan, S. (2019). Multiplexed surface plasmon imaging of serum biomolecules: Fe_3O_4@Au Core/shell nanoparticles with plasmonic simulation insights. *Sensors and Actuators, B: Chemical*, *299*(August), 126956. https://doi.org/10.1016/j.snb.2019.126956

Priya, S., Laha, R., & Dantham, V. R. (2020). Wavelength-dependent angular shift and figure of merit of silver-based surface plasmon resonance biosensor. *Sensors and Actuators, A: Physical*, *315*, 112289. https://doi.org/10.1016/j.sna.2020.112289

Purwidyantri, A., Kamajaya, L., Chen, C.-H., Luo, J.-D., Chiou, C.-C., Tian, Y.-C., Lin, C.-Y., Yang, C.-M., & Lai, C.-S. (2018). A Colloidal Nanopatterning and Downscaling of a Highly Periodic Au Nanoporous EGFET Biosensor. *Journal of The Electrochemical Society*, *165*(4), H3170–H3177. https://doi.org/10.1149/2.0241804jes

Qian, H., Ma, Y., Yang, Q., Chen, B., Liu, Y., Guo, X., Lin, S., Ruan, J., Liu, X., Tong, L., & Wang, Z. L. (2014). Electrical tuning of surface plasmon polariton propagation in graphene-nanowire hybrid structure. *ACS Nano*, *8*(3), 2584–2589. https://doi.org/10.1021/nn406221s

Qin, F., Peng, M., Estevez, D., & Brosseau, C. (2022). Electromagnetic composites: From effective medium theories to metamaterials. *Journal of Applied Physics*, *132*(10). https://doi.org/10.1063/5.0099072

Raether, H. (1977). Surface Plasmons on Smooth and Rough Surfaces and on Gratings. *Applied Optics*, *16*(11), 2803. https://doi.org/10.1364/ao.16.002803

Rajput, P., Kumar, M., Sharma, A., & Kumar, T. (2024). On the splitting of the surface plasmon resonance band of gold nanopillars developed on rippled Si surface. *Journal of Alloys and Compounds*, *976*(July 2023), 173228. https://doi.org/10.1016/j.jallcom.2023.173228

Ramesh, R., Geerthana, M., Prabhu, S., & Sohila, S. (2017). Synthesis and Characterization of the Superparamagnetic Fe_3O_4/Ag Nanocomposites. *Journal of Cluster Science*, *28*(3), 963–969. https://doi.org/10.1007/s10876-016-1093-9

Riswan, M., Adrianto, N., Yahya, I. M., Istiqomah, N. I., Panre, A. M., Juharni, Wahyuni, S., Arifin, M., Santoso, I., & Suharyadi, E. (2023). Effect of electric field on localized surface plasmon resonance properties of Fe3O4/Ag composite nanoparticles. *Optik*, *293*(April), 171404. https://doi.org/10.1016/j.ijleo.2023.171404

Riswan, M., Arifin, M., Santoso, I., Nawa, K., Nakamura, K., & Suharyadi, E. (2025). Effect of change in number of electrons to optical properties and surface plasmon resonance of noble metals. *Computational Materials Science*, *247*(July 2024), 113519. https://doi.org/10.1016/j.commatsci.2024.113519

Riswan, M., Widianto, E., Imani, N., Driyo, C., Arifin, M., Santoso, I., & Suharyadi, E. (2024). Tuning optical properties of Au thin film using electric field for surface plasmon resonance biosensor application. *Optical Materials*, *150*(February), 115221. https://doi.org/10.1016/j.optmat.2024.115221

Riswan, M., Widianto, E., Maulina, H., Arifin, M., Santoso, I., & Suharyadi, E.

(2025). Enhanced optical properties and localized surface plasmon resonance of magnetite/silver nanocomposites under electric field and wavelength variation. *Emergent Materials*. https://doi.org/10.1007/s42247-025-01085-w

Rivani, D. A., Retnosari, I., Kusumandari, & Saraswati, T. E. (2019). Influence of TiO2 addition on the magnetic properties of carbon-based iron oxide nanocomposites synthesized using submerged arc-discharge. *IOP Conference Series: Materials Science and Engineering*, *509*(1). https://doi.org/10.1088/1757-899X/509/1/012034

Rogers, J. K., Taylor, N. D., & Church, G. M. (2016). Biosensor-based engineering of biosynthetic pathways. *Current Opinion in Biotechnology*, *42*, 84–91. https://doi.org/10.1016/j.copbio.2016.03.005

Rubio, A. S. (2014a). *2014_Aída Serrano Rubio_Modified Au-based nanomaterials studied by surface plasmon resonance spectroscopy*.

Rubio, A. S. (2014b). Modified Au-based nanomaterials studied by surface plasmon resonance spectroscopy Estudio de nanomateriales modificados basados en Au mediante espectroscop ´ ıa de resonancia de plasmones de superficie ıda Serrano Rubio. *PhD Thesis*.

Sadeghi, Z., & Shirkani, H. (2020). Highly sensitive mid-infrared SPR biosensor for a wide range of biomolecules and biological cells based on graphene-gold grating. *Physica E: Low-Dimensional Systems and Nanostructures*, *119*, 114005. https://doi.org/10.1016/j.physe.2020.114005

Saedi, S., Shokri, M., Priyadarshi, R., & Rhim, J. W. (2021). Silver ion loaded 3-aminopropyl trimethoxysilane -modified Fe_3O_4 nanoparticles for the fabrication of carrageenan-based active packaging films. *Colloids and Surfaces B: Biointerfaces*, *208*(March), 112085. https://doi.org/10.1016/j.colsurfb.2021.112085

Safa Kasap, P. C. (2007). Springer Handbook of Electronic and Photonic Materials. *Springer Handbook of Electronic and Photonic Materials*. https://doi.org/10.1007/978-0-387-29185-7

Saleh, B. E. A., & Teich, M. C. (2007). *Fundamentals of photonics, Wiley press, second edition*. 1114–1115.

Sati, A., Kumar, A., Mishra, V., Warshi, K., Sagdeo, A., Anwar, S., Kumar, R., & Sagdeo, P. R. (2019). Direct correlation between the band gap and dielectric loss in Hf doped BaTiO3. *Journal of Materials Science: Materials in Electronics*, *30*(8), 8064–8070. https://doi.org/10.1007/s10854-019-01128-z

Semwal, V., & Gupta, B. D. (2019). Highly sensitive surface plasmon resonance based fiber optic pH sensor utilizing rGO-Pani nanocomposite prepared by in situ method. *Sensors and Actuators, B: Chemical*, *283*, 632–642. https://doi.org/10.1016/j.snb.2018.12.070

Shokoofeh, N., Moradi-Shoeili, Z., Naeemi, A. S., Jalali, A., Hedayati, M., &

Salehzadeh, A. (2019). Biosynthesis of Fe_3O_4@Ag Nanocomposite and Evaluation of Its Performance on Expression of norA and norB Efflux Pump Genes in Ciprofloxacin-Resistant Staphylococcus aureus. *Biological Trace Element Research*, *191*(2), 522–530. https://doi.org/10.1007/s12011-019-1632-y

Sihombing, Y. A., & Abraha, K. (2017). Kajian Pengaruh Nanopartikel Magnetik Fe3O4 Pada Deteksi Biosensor Berbasis Surface Plasmon Resonance (SPR). *Jurnal Ilmu Fisika | Universitas Andalas*, *9*(2), 121–131. https://doi.org/10.25077/jif.9.2.121-131.2017

Singh, D., Gupta, S. K., Lukačević, I., Mužević, M., Sonvane, Y., & Ahuja, R. (2019). Effect of electric field on optoelectronic properties of indiene monolayer for photoelectric nanodevices. *Scientific Reports*, *9*(1), 1–12. https://doi.org/10.1038/s41598-019-53631-2

Singh, S., & Goswami, N. (2021). Structural, optical, magnetic and dielectric properties of magnetite (Fe_3O_4) nanoparticles prepared by exploding wire technique. *Journal of Materials Science: Materials in Electronics*, *32*(22), 26857–26870. https://doi.org/10.1007/s10854-021-07062-3

Singh, T. I., Singh, P., & Karki, B. (2023). Early Detection of Chikungunya Virus Utilizing the Surface Plasmon Resonance Comprising a Silver-Silicon-PtSe2 Multilayer Structure. *Plasmonics*, *18*(3), 1173–1180. https://doi.org/10.1007/s11468-023-01840-x

Sio, F. O., Ag, F. O., Wang, L., Sun, Y., Wang, J., Wang, J., Yu, A., Zhang, H., & Song, D. (2011). Colloids and Surfaces B : Biointerfaces Preparation of surface plasmon resonance biosensor based on magnetic. *Colloids and Surfaces B: Biointerfaces*, *84*(2), 484–490. https://doi.org/10.1016/j.colsurfb.2011.02.003

Smith, N. V. (1988). *Empirical band calculations of the optical properties of d-band metals. 6*.

Soltanpour, P., Naderali, R., & Mabhouti, K. (2024). Comparative study on structural, morphological, and optical properties of MS/Fe3O4 nanocomposites and M-doped Fe3O4 nanopowders (M = Mn, Zn). *Scientific Reports*, *14*(1), 1–22. https://doi.org/10.1038/s41598-024-72026-6

Srinivasan, K. (2014). *$L_1(0)$ FE-PT On Nanocrystalline Hitperm Soft Magnetic Underlayers For Perpendicular Recording Media*. Department Of Materials Science And Engineering Carnegie Mellon University, *1*(6).

Taufiq, A., Saputro, R. E., Susanto, H., Hidayat, N., Sunaryono, S., Amrillah, T., Wijaya, H. W., Mufti, N., & Simanjuntak, F. M. (2020). Synthesis of Fe3O4/Ag nanohybrid ferrofluids and their applications as antimicrobial and antifibrotic agents. *Heliyon*, *6*(12). https://doi.org/10.1016/j.heliyon.2020.e05813

Thompson, R. C. (1990). Optical Waves in Layered Media. *Journal of Modern Optics*, *37*(1), 147–148. https://doi.org/10.1080/09500349014550171

Trong, D. N., Long, V. C., Saraç, U., Quoc, V. D., & Ţălu, Ş. (2022). First-Principles Calculations of Crystallographic and Electronic Structural Properties of Au-Cu Alloys. *Journal of Composites Science*, *6*(12), 1–11. https://doi.org/10.3390/jcs6120383

Tung, L. M., Cong, N. X., Huy, L. T., Lan, N. T., Phan, V. N., Hoa, N. Q., Vinh, L. K., Thinh, N. V., Tai, L. T., Ngo, D. T., Mølhave, K., Huy, T. Q., & Le, A. T. (2016). Synthesis, characterizations of superparamagnetic Fe_3O_4-Ag hybrid nanoparticles and their application for highly effective bacteria inactivation. *Journal of Nanoscience and Nanotechnology*, *16*(6), 5902–5912. https://doi.org/10.1166/jnn.2016.11029

Usman, F., Dennis, J. O., Seong, K. C., Ahmed, A. Y., Ferrell, T. L., Fen, Y. W., Sadrolhosseini, A. R., Ayodele, O. B., Meriaudeau, F., & Saidu, A. (2019). Enhanced Sensitivity of Surface Plasmon Resonance Biosensor Functionalized with Doped Polyaniline Composites for the Detection of Low-Concentration Acetone Vapour. *Journal of Sensors*, *2019*. https://doi.org/10.1155/2019/5786105

Üzek, R., Sari, E., & Merkoçi, A. (2019). Optical-based (Bio) sensing systems using magnetic nanoparticles. *Magnetochemistry*, *5*(4), 1–25. https://doi.org/10.3390/magnetochemistry5040059

Valette, G. (1982). Hydrophilicity of metal surfaces. Silver, gold and copper electrodes. *Journal of Electroanalytical Chemistry*, *139*(2), 285–301. https://doi.org/10.1016/0022-0728(82)85127-9

Vinita, Tiwari, M., & Prakash, R. (2018). Colorimetric detection of picric acid using silver nanoparticles modified with 4-amino-3-hydrazino-5-mercapto-1,2,4-triazole. *Applied Surface Science*, *449*, 174–180. https://doi.org/10.1016/j.apsusc.2018.01.198

Wahyuni, S., Riswan, M., Adrianto, N., Dharmawan, M. Y., Tumbelaka, R. M., Cuana, R., Istiqomah, N. I., Jiananda, A., Garcia, S., & Suharyadi, E. (2023). Localized surface plasmon resonance properties dependence of green-synthesized Fe3O4/Ag composite nanoparticles on Ag concentration and an electric field for biosensor application. *Photonics and Nanostructures - Fundamentals and Applications*, *57*(October), 101191. https://doi.org/10.1016/j.photonics.2023.101191

Wakamatsu, T. (2010). *Characteristics of Metal Enhanced Evanescent-Wave Microcavities*. 8751–8760. https://doi.org/10.3390/s100908751

Wan Ahamad, W. M. A., Kamarun, D., Abd Rahman, M. K., & Kamarudin, M. S. (2015). Modular Surface Plasmon Resonance (SPR) Biosensor Based on Wavelength Modulation. *Advanced Materials Research*, *1107*, 699–705. https://doi.org/10.4028/www.scientific.net/amr.1107.699

Wang, C., Chen, P. J., & Hsueh, C. H. (2022). Au-Based Thin-Film Metallic Glasses for Propagating Surface Plasmon Resonance-Based Sensor Applications. *ACS Omega*, *7*(22), 18780–18785. https://doi.org/10.1021/acsomega.2c01565

Wang, G., Lu, Y., Hou, H., & Liu, Y. (2017). Probing the binding behavior and kinetics of silver nanoparticles with bovine serum albumin. *RSC Advances*, *7*(15), 9393–9401. https://doi.org/10.1039/c6ra26089f

Wang, H., Chen, L., Feng, Y., & Chen, H. (2013). Exploiting core-shell synergy for nanosynthesis and mechanistic investigation. *Accounts of Chemical Research*, *46*(7), 1636–1646. https://doi.org/10.1021/ar400020j

Wang, H. F., Zhou, Z. X., Tian, H., Liu, D. J., & Shen, Y. Q. (2010). Electric control of enhanced lateral shift owing to surface plasmon resonance in Kretschmann configuration with an electro-optic crystal. *Journal of Optics A: Pure and Applied Optics*, *12*(4). https://doi.org/10.1088/2040-8978/12/4/045708

Wang, J., Song, D., Zhang, H., Zhang, J., Jin, Y., Zhang, H., Zhou, H., & 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*, 165–170. https://doi.org/10.1016/j.colsurfb.2012.08.040

Wang, T. J., Cheng, C. C., & Yang, S. C. (2011). Surface plasmon resonance biosensing by electro-optically modulated attenuated total reflection. *Applied Physics B: Lasers and Optics*, *103*(3), 701–706. https://doi.org/10.1007/s00340-010-4292-3

Wang, T. J., & Ho, P. C. (2011). Localized surface plasmon resonance biosensing by electro-optic modulation with sensitivity and resolution tunability. *Journal of Applied Physics*, *109*(6). https://doi.org/10.1063/1.3563065

Wardhani, S., Mardiansyah, H. A., & Purwonugroho, D. (2023). Fe_3O_4-SiO_2-Alginate Photocatalyst for Textile Dyes Waste Degradation. *Science and Technology Indonesia*, *8*(1), 108–115. https://doi.org/10.26554/sti.2023.8.1.108-115

West, P. R., Ishii, S., Naik, G. V., Emani, N. K., Shalaev, V. M., & Boltasseva, A. (2010). Searching for better plasmonic materials. *Laser and Photonics Reviews*, *4*(6), 795–808. https://doi.org/10.1002/lpor.200900055

Wibowo, N. A., Juharni, J., Sabarman, H., & 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), 107002. https://doi.org/10.1149/2162-8777/ac2d4e

Widayanti, & Abraha, K. (2016). Study on the effect of nanoparticle bimetallic coreshell Au-Ag for sensitivity enhancement of biosensor based on surface plasmon resonance. *Journal of Physics: Conference Series*, *694*(1). https://doi.org/10.1088/1742-6596/694/1/012075

Widianto, E. (2023). *Kajian Sifat Optik Mapbi 3/Graphene Oxide Menggunakan Spektroskopi Elipsometri Untuk Aplikasi Sel Surya Perovskite*. Universitas Gadjah Mada.

Widianto, E., Shobih, Nursam, N. M., Hanna, M. Y., Triyana, K., Rusydi, A., & Santoso, I. (2023). Electronic correlations enhance optical absorption in graphene oxide-modified methylammonium lead iodide perovskite. *Journal of Alloys and Compounds*, *947*, 169634. https://doi.org/10.1016/j.jallcom.2023.169634

Wu, L., Chu, H. S., Koh, W. S., & Li, E. P. (2010). Highly sensitive graphene biosensors based on surface plasmon resonance. *Optics Express*, *18*(14), 14395. https://doi.org/10.1364/oe.18.014395

Xia, C., Hu, C., Xiong, Y., & Wang, N. (2009). Synthesis of α-Fe_2O_3 hexagons and their magnetic properties. *Journal of Alloys and Compounds*, *480*(2), 970–973. https://doi.org/10.1016/j.jallcom.2009.02.106

Xinglong, Y., Dingxin, W., Xing, W., Xiang, D., Wei, L., & Xinsheng, Z. (2005). A surface plasmon resonance imaging interferometry for protein micro-array detection. *Sensors and Actuators, B: Chemical*, *108*(1-2 SPEC. ISS.), 765–771. https://doi.org/10.1016/j.snb.2004.12.089

Yang, J., Sun, Q., Ueno, K., Misawa, H., & Gong, Q. (2018). Manipulation of the dephasing time by strong coupling between localized and propagating surface plasmon modes. *Nature Communications*. https://doi.org/10.1038/s41467-018-07356-x

Yariv, A., & Yeh, P. (2002). *Optical Waves in Crystals: Propagation and Control of Laser Radiation (Wiley Series in Pure and Applied Optics)* (p. 608).

Yeneayehu, K., Senbeta, T., & Mesfin, B. (2021). Enhancement of the optical response of Fe_3O_4@Ag core-shell nanoparticles. *Physica E: Low-Dimensional Systems and Nanostructures*, *134*(June 2020), 114822. https://doi.org/10.1016/j.physe.2021.114822

Yu, H., Peng, Y., Yang, Y., & Li, Z. Y. (2019). Plasmon-enhanced light–matter interactions and applications. *Npj Computational Materials*, *5*(1), 1–14. https://doi.org/10.1038/s41524-019-0184-1

Yu, L., Wu, H., & Wu, B. (2014). *Magnetic Fe_3O_4-Reduced Graphene Oxide Nano-composites-Based Electrochemical Biosensing*. *6*(3), 258–267.

Zhan, S., Li, C., Tian, H., Ma, C., Liu, H., Luo, J., & Li, M. (2019). Synthesis, characterization and dye removal behavior of core–shell–shell Fe3O4/Ag/polyoxometalates ternary nanocomposites. *Nanomaterials*, *9*(9). https://doi.org/10.3390/nano9091255

Zhu, M., Lerum, M. Z., & Chen, W. (2012). *How To Prepare Reproducible , Homogeneous , and Hydrolytically Stable Aminosilane-Derived Layers on Silica*. 416–423.

Zhu, S., Guo, J., Dong, J., Cui, Z., Lu, T., Zhu, C., Zhang, D., & Ma, J. (2013). Sonochemical fabrication of Fe3O4 nanoparticles on reduced graphene oxide for biosensors. *Ultrasonics Sonochemistry*, *20*(3), 872–880. https://doi.org/10.1016/j.ultsonch.2012.12.001