# DAFTAR PUSTAKA


Abdelbaky, A.S., Abd El-Mageed, T.A., Babalghith, A.O., Selim, S., Mohamed, A.M.H.A., 2022, Green Synthesis and Characterization of ZnO Nanoparticles Using Pelargonium odoratissimum (L.) Aqueous Leaf Extract and Their Antioxidant, Antibacterial and Anti-inflammatory Activities, *Antioxidants*, Vol. 11, DOI: 10.3390/antiox11081444.

Acharya, T.R., Lamichhane, P., Wahab, R., Chaudhary, D.K., Shrestha, B., Joshi, L.P., Kaushik, N.K., Choi, E.H., 2021, Study on the Synthesis of ZnO Nanoparticles Using Azadirachta indica Extracts for the Fabrication of a Gas Sensor, *Molecules*, Vol. 26, Hal. 7685, DOI: 10.3390/molecules26247685.

Ani, A., Poornesh, P., Nagaraja, K.K., Hegde, G., Kolesnikov, E., 2021, Evaluation of spray pyrolysed In : ZnO nanostructures for CO gas sensing at low concentration, *Journal of Materials Science: Materials in Electronics*, Vol. 32, Hal. 22599–22616, DOI: 10.1007/s10854-021-06745-1.

Ariyanti, M., Farida, F., Umiyati, U., 2024, Review: Metabolit Sekunder pada Kelapa Sawit, *Paspalum: Jurnal Ilmiah Pertanian*, Vol. 12, Hal. 207, DOI: 10.35138/paspalum.v12i1.709.

Asif, M., Fakhar-e-alam, M., Tahir, M., Jamil, F., Sardar, H., Rehman, J., Dahlous, K.A., 2024, Synthesis , Characterization , and Evaluation of the Antimicrobial and Anticancer Activities of Zinc Oxide and Aluminum-Doped Zinc Oxide Nanocomposites.

Atikha, U., Adawiyah, R., 2017, Synthesis of Zinc Oxide from Oil Palm Leaves by Green Sol-Gel Method : Effect of Concentration Variation, *Faculty of Chemical Engineering, Universiti Teknologi Mara*.

Bhuiyan, M.R.A., Mamur, H., 2021, A Brief Review of the Synthesis of ZnO Nanoparticles for Biomedical Applications, *Iranian Journal of Materials Science & Engineering*, Vol. 18, DOI: 10.22068/ijmse.1995.

Dadkhah, M., Tulliani, J.M., 2022, Green Synthesis of Metal Oxides Semiconductors for Gas Sensing Applications, *Sensors*, Vol. 22, DOI: 10.3390/s22134669.

Darwish, M.A., Abd-Elaziem, W., Elsheikh, A., Zayed, A.A., 2024, Advancements in nanomaterials for nanosensors: a comprehensive review, *Nanoscale Advances*, Vol. 6, Hal. 4015–4046, DOI: 10.1039/d4na00214h.

Diaz-López, J.B., De la Cruz-Gumeta, D., Alvarado-Arguello, G., Rico-Domínguez, O., Valdez-Rodríguez, E., Hernández-Ovalle, K., Luján-Hidalgo, M.C., Cruz-

Rodríguez, R.I., Meza-Gordillo, R., 2025, Optimization of silver nanoparticles synthesis using Elaeis guineensis Jacq. residue extract and their antibacterial activity against Pseudomonas aeruginosa, *Journal of Materials Science: Materials in Engineering*, Vol. 20, DOI: 10.1186/s40712-025-00305-9.

Dominica, D., Salwa, F., Reanto, A., Widhea, P., Kusuma, P., Putri, F.A., Yulian, N.S., Marisca, D., 2024, Phytochemical test and Antibacterial Activity of Oil Palm leaf Extraxt (Elaeis Guineensin Jacq.) as Sunscreen Cream.

Franco, M.A., Conti, P.P., Andre, R.S., Correa, D.S., 2022, A review on chemiresistive ZnO gas sensors, *Sensors and Actuators Reports*, Vol. 4, Hal. 100100, DOI: 10.1016/j.snr.2022.100100.

Goel, N., Kunal, K., Kushwaha, A., Kumar, M., 2023, Metal oxide semiconductors for gas sensing, *Engineering Reports*, Vol. 5, Hal. 1–22, DOI: 10.1002/eng2.12604.

Goshua, A., Akdis, C.A., Nadeau, K.C., 2022, World Health Organization global air quality guideline recommendations: Executive summary, *Allergy: European Journal of Allergy and Clinical Immunology*, Vol. 77, Hal. 1955–1960, DOI: 10.1111/all.15224.

Handani, S., Dahlan, D., Arief, S., 2020, Enhanced structural , optical and morphological properties of ZnO thin film using green chemical approach, *Vacuum*, Vol. 179, Hal. 109513, DOI: 10.1016/j.vacuum.2020.109513.

He, Y., Jiao, M., 2024, A Mini-Review on Metal Oxide Semiconductor Gas Sensors for Carbon Monoxide Detection at Room Temperature, *Chemosensors*, Vol. 12, Hal. 55, DOI: 10.3390/chemosensors12040055.

Himabindu, B., 2023, A nanostructured Al-doped ZnO as an ultra-sensitive room-temperature ammonia gas sensor, *Journal of Materials Science: Materials in Electronics*, Vol. 34, Hal. 1–18, DOI: 10.1007/s10854-023-10337-6.

Hjiri, M., Bahanan, F., Aida, M.S., El Mir, L., Neri, G., 2020, High Performance CO Gas Sensor Based on ZnO Nanoparticles, *Journal of Inorganic and Organometallic Polymers and Materials*, Vol. 30, Hal. 4063–4071, DOI: 10.1007/s10904-020-01553-2.

Hung, C.M., Van Duy, L., Thanh Le, D.T., Nguyen, H., Van Duy, N., Hoa, N.D., 2021, ZnO coral-like nanoplates decorated with Pd nanoparticles for enhanced VOC gas sensing, *Journal of Science: Advanced Materials and Devices*, Vol. 6, Hal. 453–461, DOI: 10.1016/j.jsamd.2021.05.005.

Jaballah, S., Alaskar, Y., Alshunaifi, I., Ghiloufi, I., Neri, G., Bouzidi, C., Dahman, H., Mir, L. El, 2021, Effect of al and mg doping on reducing gases detection of zno nanoparticles, *Chemosensors*, Vol. 9, Hal. 1–17, DOI: 10.3390/chemosensors9110300.

Joudeh, N., Linke, D., 2022, Nanoparticle classification, physicochemical properties, characterization, and applications: a comprehensive review for biologists, *Journal of Nanobiotechnology*, Vol. 20, Hal. 1–29, DOI: 10.1186/s12951-022-01477-8.

Kang, Y., Yu, F., Zhang, L., Wang, W., Chen, L., Li, Y., 2021, Review of ZnO-based nanomaterials in gas sensors, *Solid State Ionics*, Vol. 360, DOI: 10.1016/j.ssi.2020.115544.

Kaningini, G.A., Azizi, S., Nyoni, H., Mudau, F.N., Mohale, K.C., Maaza, M., 2022, Green synthesis and characterization of zinc oxide nanoparticles using bush tea (Athrixia phylicoides DC) natural extract : assessment of the synthesis process, Hal. 1–21, DOI: https://doi.org/10.12688/f1000research.73272.4.

Karam, S.T., Abdulrahman, A.F., 2022, Green Synthesis and Characterization of ZnO Nanoparticles by Using Thyme Plant Leaf Extract, *Photonics*, Vol. 9, Hal. 594, DOI: 10.3390/photonics9080594.

Khan, M.W.A., Shaalan, N.M., Ahmed, F., Sherwani, S., Aljaafari, A., Alsukaibi, A.K.D., Alenezi, K.M., Al-Motair, K., 2024, Gas Sensing Performance of Zinc Oxide Nanoparticles Fabricated via Ochradenus baccatus Leaf, *Chemosensors*, Vol. 12, Hal. 28, DOI: 10.3390/chemosensors12020028.

Lee, G., Sim, J.H., Oh, G., Won, M., Mantry, S.P., Kim, D.S., 2023, Electrostatic Spray Deposition of Al-Doped ZnO Thin Films for Acetone Gas Detection, *Processes*, Vol. 11, DOI: 10.3390/pr11123390.

Mutukwa, D., Taziwa, R., Khotseng, L.E., 2022, A Review of the Green Synthesis of ZnO Nanoparticles Utilising Southern African Indigenous Medicinal Plants, *Nanomaterials*, Vol. 12, DOI: 10.3390/nano12193456.

Nuruddin, A., 2025, *Rekayasa Material Semikonduktor Oksida Logam untuk Aplikasi Sensor Lingkungan*, ITB Press, Bandung.

Panigrahi, P.K., Chandu, B., Puvvada, N., 2023, Recent Advances in Nanostructured Materials for Application as Gas Sensors, *ACS Omega*, DOI: 10.1021/acsomega.3c06533.

Pineda-Reyes, A.M., Herrera-Rivera, M.R., Rojas-Chávez, H., Cruz-Martínez, H., Medina, D.I., 2021, Recent advances in zno-based carbon monoxide sensors: Role of doping, *Sensors*.

Putri, S.E., Oktaviana, A., Dinar Rorensya, C.A., Nurfani, E., Maryanti, E., Annas, D., Nikmatullah, M., Apriandanu, D.O.B., Saputra, I.S., 2025, Effect of Elaeis guineensis Jacq. Leaf extracts concentration in the optical, structure, morphology analysis of titanium dioxide nanoparticles, *Results in Surfaces and Interfaces*, Vol. 18, Hal. 100391, DOI: 10.1016/j.rsurfi.2024.100391.

Que, M., Lin, C., Sun, J., Chen, L., Sun, X., Sun, Y., 2021, Progress in ZnO Nanosensors, *Sensors*, Vol. 21, Hal. 5502, DOI: 10.3390/s21165502.

Radhakrishnan, J.K., Kumara, M., Geetika, 2021, Effect of temperature modulation, on the gas sensing characteristics of ZnO nanostructures, for gases O2, CO and CO2, *Sensors International*, Vol. 2, DOI: 10.1016/j.sintl.2020.100059.

Radulescu, D.M., Surdu, V.A., Ficai, A., Ficai, D., Grumezescu, A.M., Andronescu, E., 2023, Green Synthesis of Metal and Metal Oxide Nanoparticles: A Review of the Principles and Biomedical Applications, *International Journal of Molecular Sciences*, Vol. 24, DOI: 10.3390/ijms242015397.

Sánchez-Vicente, C., Santos, J.P., Sayago, I., Mazzola, V., Sacco, L., 2025, Room-Temperature Environmental Gas Detection: Performance Comparison of Nanoparticle-Based Sensors Fabricated by Electrospray, Drop-Casting, and Dry Printing Based on Spark Ablation, *Chemosensors*, Vol. 13, Hal. 1–19, DOI: 10.3390/chemosensors13060219.

Shaari, K., 2020, Ultrasound-Assisted Extraction of Polyphenolic Contents and Acid Hydrolysis of Flavonoid Glycosides from Oil Palm ( Elaeis guineensis Jacq .) Scavenging Activity.

Shaba, E.Y., Jacob, J.O., Tijani, J.O., Suleiman, M.A.T., 2021, *A critical review of synthesis parameters affecting the properties of zinc oxide nanoparticle and its application in wastewater treatment*, Applied Water Science, Springer International Publishing.

Shafey, A.M. El, 2020, Green synthesis of metal and metal oxide nanoparticles from plant leaf extracts and their applications: A review, *Green Processing and Synthesis*.

Sugitha, S.K.J., Latha, R.G., Venkatesan, R., Kim, S.C., Vetcher, A.A., Khan, M.R., 2024, Green Synthesis of Al-ZnO Nanoparticles Using Cucumis maderaspatanus Plant Extracts: Analysis of Structural, Antioxidant, and Antibacterial Activities, *Nanomaterials*, Vol. 14, DOI: 10.3390/nano14221851.

Sulistiarini, R., Helmi, H., Narsa, A.C., 2022, Elaeis guineensis Jacq. leaves are a potential biomass for herbal medicine resources: A mini review, *Journal of Applied Pharmaceutical Science*, Vol. 12, Hal. 147–155, DOI: 10.7324/JAPS.2022.121016.

Tankari, A.M., Medjnoun, K., Nouiri, M., Briot, O., Juillaguet, S., Peyre, H., Belaqziz, M., Djessas, K., 2023, Synthesis and characterization of aluminum doped zinc oxide nanoparticles via a novel and low cost aqueous chemical process, *Materials Letters*, Vol. 353, Hal. 135230, DOI: 10.1016/j.matlet.2023.135230.

Tausif, A., Mohamad Azmi, B., Muhammad, I., Muhammad, M., Hafiz Muhammad, Asghar, A., Sekhar, B., 2018, Green synthesis of stabilized spherical shaped gold nanoparticles using novel aqueous Elaeis guineensis (oil palm) leaves extract, *Journal of Molecular Structure*, Vol. 1159, Hal. 167–173, DOI: 10.1016/j.molstruc.2017.11.095.

Tow, W.K., Goh, A.P.T., Sundralingam, U., Palanisamy, U.D., Sivasothy, Y., 2021, Flavonoid composition and pharmacological properties of elaeis guineensis jacq. Leaf extracts: A systematic review, *Pharmaceuticals*.

Villagrán, Z., Anaya-Esparza, L.M., Velázquez-Carriles, C.A., Silva-Jara, J.M., Ruvalcaba-Gómez, J.M., Aurora-Vigo, E.F., Rodríguez-Lafitte, E., Rodríguez-Barajas, N., Balderas-León, I., Martínez-Esquivias, F., 2024, Plant-Based Extracts as Reducing, Capping, and Stabilizing Agents for the Green Synthesis of Inorganic Nanoparticles, *Resources*, Vol. 13, DOI: 10.3390/resources13060070.

Wang, J., Wang, R., 2025, Development of Gas Sensors and Their Applications in Health Safety, Medical Detection, and Diagnosis, *Chemosensors*, Vol. 13, Hal. 1–33, DOI: 10.3390/chemosensors13050190.

Waqas Alam, M., Sharma, Anil, Sharma, Anjana, Kumar, S., Mohammad Junaid, P., Awad, M., 2025, VOC Detection with Zinc Oxide Gas Sensors: A Review of Fabrication, Performance, and Emerging Applications, *Electroanalysis*, Vol. 37, Hal. 1–18, DOI: 10.1002/elan.202400246.

WHO, 2021, WHO global air quality guidelines, *Particulate matter (PM2.5 and PM10), ozone, nitrogen dioxide, sulfur dioxide and carbon monoxide.*, Hal. 1–360.

Yang, S., Yin, H., Wang, Z., Lei, G., Xu, H., Lan, Z., Gu, H., 2023, Gas sensing performance of In 2 O 3 nanostructures : A mini review, Hal. 1–7, DOI: 10.3389/fchem.2023.1174207.

Zhang, J., Yang, C., Li, S., Yang, P., Xi, Y., Cai, C., Liu, W., 2021, Preparation of - Al 3 + - doped ZnO micro – nanospheres for highly sensitive CO gas sensors, *Applied Physics A*, Vol. 127, Hal. 1–7, DOI: 10.1007/s00339-021-04327-w.

Zhou, X.Q., Hayat, Z., Zhang, D.D., Li, M.Y., Hu, S., Wu, Q., Cao, Y.F., Yuan, Y., 2023, Zinc Oxide Nanoparticles: Synthesis, Characterization, Modification, and Applications in Food and Agriculture, *Processes*, Vol. 11, Hal. 1193.