

DAFTAR PUSTAKA

- Aflaha, R., Afiyanti, H., Azizah, Z. N., Khoirudin, H., Rianjanu, A., Kusumaatmaja, A., Roto, R., and Triyana, K., 2023a, Improving Ammonia Sensing Performance of Quartz Crystal Microbalance (QCM) Coated with Nanofibers and Polyaniline (PANi) Overlay, *Biosens. Bioelectron. X*, 13, 1–9.
- Aflaha, R., Katriani, L., As'ari, A. H., Sari, N. L. I., Kusumaatmaja, A., Rianjanu, A., Roto, R., and Triyana, K., 2023b, Enhanced Trimethylamine Gas Sensor Sensitivity Based on Quartz Crystal Microbalance Using Nanofibers Overlaid with Maltodextrin, *MRS Commun.*, 4(13), 664–672.
- Ayad, M. M., Salahuddin, N. A., Minisy, I. M., and Amer, W. A., 2014a, Chitosan/Polyaniline Nanofibers Coating on the Quartz Crystal Microbalance Electrode for Gas Sensing, *Sens. Actuators B: Chem.*, 202, 144–153.
- Ayad, M. M., Salahuddin, N., and Minisy, I. M., 2014b, Detection of Some Volatile Organic Compounds with Chitosan-Coated Quartz Crystal Microbalance, *Des. Monomers Polym.*, 8(17), 795–802.
- Ayad, M. M. and Torad, N. L., 2010, Quartz Crystal Microbalance Sensor for Detection of Aliphatic Amines Vapours, *Sens. Actuators B: Chem.*, 2(147), 481–487.
- Ayad, M. M., Torad, N. L., Minisy, I. M., Izriq, R., and Ebeid, E. Z. M., 2019, A Wide Range Sensor of a 3D Mesoporous Silica Coated QCM Electrodes for the Detection of Volatile Organic Compounds, *J. Porous Mater.*, 6(26), 1731–1741.
- Bayram, A., Farzaneh, A., Esrafil, M. D., Okur, S., and Ozdemir, E., 2023, Hollow Nano-CaCO₃'s VOC Sensing Properties: A DFT Calculation and Experimental Assessments, *Chemosphere*, 313, 1-9.
- Berouaken, M., Talbi, L., Yaddadene, C., Maoudj, M., Menari, H., Alkama, R., and Gabouze, N., 2020, Room Temperature Ammonia Gas Sensor Based on V₂O₅ Nanoplatelets/Quartz Crystal Microbalance, *Appl. Phys. A-Mater.*, 12(126), 1–9.
- Bourennane, A., Tanougast, C., Diou, C., and Gorse, J., 2023, Accurate Multi-Channel QCM Sensor Measurement Enabled by FPGA-Based Embedded System Using GPS, *Electron.*, 12(12), 1-14.
- Chauhan, D., Gupta, P. K., and Solanki, P. R., 2018, Electrochemical Immunosensor Based on Magnetite Nanoparticles Incorporated Electrospun Polyacrylonitrile Nanofibers for Vitamin-D3 Detection. *Mater. Sci. Eng. C*, 93, 145–156.
- Chen, W., Deng, F., Xu, M., Wang, J., Wei, Z., and Wang, Y., 2018, GO/Cu₂O Nanocomposite Based QCM Gas Sensor for Trimethylamine Detection Under Low Concentrations, *Sens. Actuators B: Chem.*, 273, 498–504.

- Das, A. and Manjunatha, R., 2023, Optimization of QCM Sensor for BTX Detection, *ICSIMA2023*, 225–229.
- Dong, Y., Yang, Z., Sheng, Q., and Zheng, J., 2018, Solvothermal Synthesis of Ag@Fe₃O₄ Nanosphere and its Application as Hydrazine Sensor, *Colloids Surf. A*, 538, 371–377.
- Gao, N., Li, H. Y., Zhang, W., Zhang, Y., Zeng, Y., Zhixiang, H., Liu, J., Jiang, J., Miao, L., Yi, F., and Liu, H., 2019, QCM-Based Humidity Sensor and Sensing Properties Employing Colloidal SnO₂ Nanowires, *Sens. Actuators B: Chem.*, 293, 129–135.
- Gaya, E., Menendez, N., Mazario, E., and Herrasti, P., 2023, Fe₃O₄-Nanoparticle-Modified Sensor for the Detection of Dopamine, Uric Acid and Ascorbic Acid, *Chemosensors*, 2(11), 1–12.
- Hu, H., Lu, W., Liu, X., Meng, F., and Zhu, J., 2021, A High-Response Electrochemical As(III) Sensor Using Fe₃O₄-rGO Nanocomposite Materials, *Chemosensors*, 6(9), 1–13.
- Huang, G., Zhou, Y., Li, F., Tan, X., Cai, Z., Luo, D., Chen, T., and Zhang, M., 2021, An Effective and Reliable Fluorescent Sensor for Selective Detection of Methylamine Gas Based on In-Situ Formation of MAPbBr₃ Perovskite Nanocrystals in Electrospun Fibers, *Sens. Actuators B: Chem.*, 347, 1–9.
- Huang, Y., Wang, S., Zhu, Y., Li, F., Jin, J., Dong, J., Lin, F., Wang, Y., and Chen, X., 2020, Dual-Mode of Fluorescence Turn-On and Wavelength-Shift for Methylamine Gas Sensing Based on Space-Confined Growth of Methylammonium Lead Tribromide Perovskite Nanocrystals, *Anal. Chem.*, 8(92), 5661–5665.
- Humairah, N. A., Nurijal, I., Ainus Sofa, S., Chaerunnisa, A., Roto, R., Kusumaatmaja, A., Hadi Sujiono, E., and Triyana, K., 2023, Molecularly Imprinted Polyvinyl Acetate Doped with Boric Acid for Sensitivity and Selectivity of Ammonia Sensing by QCM, *Biosens. Bioelectron. X*, 13, 1–9.
- Hussain, M., Kotova, K., and Lieberzeit, P. A., 2016, Molecularly Imprinted Polymer Nanoparticles for Formaldehyde Sensing with QCM, *Sensors*, 7(16), 1–9.
- Jérôme, V., Hermann, M., Hilbrig, F., and Freitag, R., 2008, A Fast Method for the Quantification of Methylamine in Fermentation Broths by Gas Chromatography, *J. Chromatogr. B*, 1(861), 88–94.
- Julian, T., Hidayat, S. N., Rianjanu, A., Dharmawan, A. B., Wasisto, H. S., and Triyana, K., 2020, Intelligent Mobile Electronic Nose System Comprising a Hybrid Polymer-Functionalized Quartz Crystal Microbalance Sensor Array, *ACS Omega*, 5, 29492–29503.
- Kang, Z., Zhang, D., Li, T., Liu, X., and Song, X., 2021, Polydopamine-Modified SnO₂ Nanofiber Composite Coated QCM Gas Sensor for High-Performance Formaldehyde Sensing, *Sens. Actuators B: Chem.*, 345, 1–11.

- Katriani, L., Aflaha, R., As'ari, A. H., Nurwantoro, P., Roto, R., and Triyana, K., 2024, Nanofiber-Coated Quartz Crystal Microbalance with Chitosan Overlay for Highly Sensitive Room Temperature Ammonia Gas Sensor, *Microchem. J.*, 206, 1–10.
- Lee, M. B., Storer, M. K., Blunt, J. W., and Lever, M., 2006, Validation of ¹H NMR Spectroscopy as an Analytical Tool for Methylamine Metabolites in Urine, *Clin. Chim. Acta*, 1–2(365), 264–269.
- Li, Y., Jiang, C. and Yan, X., 2024, MnN₄ Embedded Zeolite-Templated Carbon for Methylamine and Trimethylamine Sensing: Insights from DFT Study, *J. Mol. Liq.*, 397, 1–8.
- Li, Y., Tan, X., Wu, S., Hong, W., Luo, J., Zhao, S., Sun, L., Lin, J., Chen, Q., and Zhang, M., 2025, Dual-Emission Ratiometric Fluorescence Sensor Based on In Situ Formation of MAPbBr₃ Perovskite Nanocrystals in Europium Metal-Organic Frameworks for Detection of Methylamine Gas, *Sens. Actuators B: Chem.*, 426, 1–9.
- Li, Y., Zhao, X., Li, P., Huang, Y., Wang, J., and Zhang, J., 2015, Highly Sensitive Fe₃O₄ Nanobeads/Graphene-Based Molecularly Imprinted Electrochemical Sensor for 17β-Estradiol in Water, *Anal. Chim. Acta*, 884, 106–113.
- Liu, C., Chen, S., Liu, S., Chen, W., and Wang, Z., 2024, Highly Sensitive QCM Gas Sensor Based on ZIF-8-Derived Porous Carbon and Multi-Walled Carbon Nanotubes Decorated Nanocomposite for Salmon Meat Freshness Detection, *J. Food Compos. Anal.*, 133, 1–9.
- Liu, M., Ye, Y., Ye, J., Gao, T., Wang, D., Chen, G., and Song, Z., 2023, Recent Advances of Magnetite (Fe₃O₄)-Based Magnetic Materials in Catalytic Applications, *Magnetochemistry*, 4(9), 1–32.
- Liu, X., Wang, J., and Hou, J., 2022, Repeatability and Sensitivity of Quartz Crystal Microbalance (QCM) Sensor Array Modified with Four Sensitive Materials, *Mater. Sci. in Semicond. Process.*, 147, 1–13.
- Lu, J., Jiao, X., Chen, D., and Li, W., 2009, Solvothermal Synthesis and Characterization of Fe₃O₄ and γ-Fe₂O₃ Nanoplates, *J. Phys. Chem. C*, 113, 4012–4017.
- Lu, W., Shen, Y., Xie, A., and Zhang, W., 2010, Green Synthesis and Characterization of Superparamagnetic Fe₃O₄ Nanoparticles, *J. Magn. Magn. Mater.*, 13(322), 1828–1833.
- Meng, X., Guo, J., Zhang, L., Qi, C., Zhou, Y., Liu, B., Yang, H., and Liu, S., 2022, Enhanced Visible-Light Photocatalytic Activity of Hydrogenated Fe₃O₄ Nanooctahedrons with {111} Polar Facets in Degradation of Basic Fuchsin and the Photocatalytic Mechanism, *J. Mater. Sci.: Mater. Electron.*, 16(33), 13095–13109.
- Mirmohseni, A. and Oladegaragoze, A., 2003, Construction of a Sensor for Determination of Ammonia and Aliphatic Amines Using

- Polyvinylpyrrolidone Coated Quartz Crystal Microbalance, *Sens. Actuators B: Chem.*, 1–2(89), 164–172.
- Murugappan, K., Kang, C., and Silvester, D. S., 2014, Electrochemical Oxidation and Sensing of Methylamine Gas in Room Temperature Ionic Liquids, *J. Phys. Chem. C*, 33(118), 19232–19237.
- Murugappan, K. and Silvester, D. S., 2015, Sensors for Highly Toxic Gases: Methylamine and Hydrogen Chloride Detection at Low Concentrations in an Ionic Liquid on Pt Screen Printed Electrodes, *Sensors*, 10(15), 26866–26876.
- Nodehi, M., Baghayeri, M., Ansari, R., and Veisi, H., 2020, Electrochemical Quantification of 17 α -Ethinylestradiol in Biological Samples Using a Au/Fe₃O₄@TA/MWNT/GCE Sensor, *Mater. Chem. Phys.*, 244, 1–11.
- Pandeeswari, R., Srinivasan, P., Sivakumar, D., Sonia, T., Pichumani, M., and Jeyaprakash, B. G., 2024, Spray Deposited Zirconia Nanostructures as the Chemiresistive Probe for Methylamine Vapour: Is Highly Selective and Sensitive Electronic Nose, Viable?, *Mater. Sci. Eng.: B*, 305, 1–10.
- Petrochenkova, N. V., Mirochnik, A. G., Emelina, T. B., Sergeev, A. A., Leonov, A. A., and Voznesenskii, S. S., 2018, Luminescent Amine Sensor Based on Europium(III) Chelate, *Spectrochim. Acta A: Mol. Biomol. Spectrosc.*, 200, 70–75.
- Rahimi, S., Abdi, Y., and Arzi, E., 2021, Impact of TiO₂/Graphene-Oxide Coated on Quartz Crystal Resonator on the Sensing Performance of NH₃, N₂ and Ethanol at Room Temperature, *Physica B: Condens. Matter*, 623, 413348.
- Rianjanu, A., Aflaha, R., Khamidy, N. I., Djamal, M., Triyana, K., and Wasisto, H. S., 2021a, Room-Temperature ppb-Level Trimethylamine Gas Sensors Functionalized with Citric Acid-Doped Polyvinyl Acetate Nanofibrous Mats, *Mater. Adv.*, 11(2), 3705–3714.
- Rianjanu, A., Hasanah, S. A., Nugroho, D. B., Kusumaatmaja, A., Roto, R., and Triyana, K., 2019a, Polyvinyl Acetate Film-Based Quartz Crystal Microbalance for the Detection of Benzene, Toluene, and Xylene Vapors in Air, *Chemosensors*, 2(7), 1–9.
- Rianjanu, A., Kusumaatmaja, A., Suyono, E. A., and Triyana, K., 2018, Solvent Vapor Treatment Improves Mechanical Strength of Electrospun Polyvinyl Alcohol Nanofibers, *Heliyon*, 4(4), 1–19.
- Rianjanu, A., Nugroho, D. B., Kusumaatmaja, A., Roto, R., and Triyana, K., 2019b, A Study of Quartz Crystal Microbalance Modified with Polyvinyl Acetate Nanofiber to Differentiate Short-Chain Alcohol Isomers, *Sens. Bio-Sens. Res.*, 25, 1–7.
- Rianjanu, A., Nurfani, E., Arif, M. F., Triyana, K., and Wasisto, H. S., 2021b, Stability Evaluation of Quartz Crystal Microbalances Coated with Polyvinyl Acetate Nanofibrous Mats as Butanol Vapor Sensors, *Mater. Today Commun.*, 26, 1–5.

- Rianjanu, A., Triyana, K., Nugroho, D. B., Kusumaatmaja, A., and Roto, R., 2020, Electrospun Polyvinyl Acetate Nanofiber Modified Quartz Crystal Microbalance for Detection of Primary Alcohol Vapor, *Sens. Actuators A: Phys.*, 301, 1–9.
- Rohman, Y. M., Sukowati, R., Priyanto, A., Hapidin, D. A., Edikresnha, D., and Khairurrijal, K., 2023, Quartz Crystal Microbalance Coated with Polyacrylonitrile/Nickel Nanofibers for High-Performance Methanol Gas Detection, *ACS Omega*, 14(8), 13342–13351.
- Roto, R., Rianjanu, A., Fatyadi, I. A., Kusumaatmaja, A., and Triyana, K., 2020a, Enhanced Sensitivity and Selectivity of Ammonia Sensing by QCM Modified with Boric Acid-Doped PVAc Nanofiber, *Sens. Actuators A: Phys.*, 304, 1–9.
- Roto, R., Rianjanu, A., Rahmawati, A., Fatyadi, I. A., Yulianto, N., Majid, N., Syamsu, I., Wasisto, H. S., and Triyana, K., 2020b, Quartz Crystal Microbalances Functionalized with Citric Acid-Doped Polyvinyl Acetate Nanofibers for Ammonia Sensing, *ACS Appl. Nano Mater.*, 6(3), 5687–5697.
- Sanaeifar, A., ZakiDizaji, H., Jafari, A., and Guardia, M. de la, 2017, Early Detection of Contamination and Defect in Foodstuffs by Electronic Nose: A Review, *Trends Anal. Chem.*, 97, 257–271.
- Shaoqing Cui, Jun Wang, and Xinlei Wang., 2015, Fabrication and Design of a Toxic Gas Sensor Based on Polyaniline/Titanium Dioxide Nanocomposite Film by Layer-by-Layer Self-Assembly, *RSC Adv.*, 72(5), 58211–58219.
- Sharma, P., Ghosh, A., Tudu, B., Bhuyan, L. P., Tamuly, P., Bhattacharyya, N., Bandyopadhyay, R., and Chatterjee, A., 2014, Detection of Linalool in Black Tea Using a Quartz Crystal Microbalance Sensor, *Sens. Actuators B: Chem.*, 190, 318–325.
- Shi, G., Sun, B., Jin, Z., Liu, J., and Li, M., 2012, Synthesis of SiO₂/Fe₃O₄ Nanomaterial and its Application as Cataluminescence Gas Sensor Material for Ether, *Sens. Actuators B: Chem.*, 171–172, 699–704.
- Sigrist, M. W., Bartlome, R., Marinov, D., Rey, J. M., Vogler, D. E., and Wächter, H., 2008, Trace Gas Monitoring with Infrared Laser-Based Detection Schemes, *Appl. Phys. B*, 2(90), 289–300.
- Silva, V. A. J., Andrade, P. L., Silva, M. P. C., D., A. B., Valladares, L. D. L. S., and Aguiar, J. A., 2013, Synthesis and Characterization of Fe₃O₄ Nanoparticles Coated with Fucan Polysaccharides, *J. Magn. Magn. Mater.*, 343, 138–143.
- Sofa, S. A., Roto, R., Aflaha, R., Natsir, T. A., Humairah, N. A., Kusumaatmaja, A., Triyana, K., and Gupta, R., 2023, Formaldehyde Gas Sensors Based on a Quartz Crystal Microbalance Modified with Aniline-Doped Polyvinyl Acetate Nanofibers, *Anal.*, 4(149), 1262–1270.
- Srinivasan, P. and Rayappan, J. B. B., 2021, Chemi-Resistive Sensing of Methylamine Species Using Twinned α -MoO₃ Nanorods: Role of Grain

- Features, Activation Energy and Surface Defects, *Sens. Actuators B: Chem.*, 349, 1–14.
- Sukowati, R., Rohman, Y. M., Agung, B. H., Hapidin, D. A., Damayanti, H., and Khairurrijal, K., 2023, An Investigation of the Influence of Nanofibers Morphology on the Performance of QCM-Based Ethanol Vapor Sensor Utilizing Polyvinylpyrrolidone Nanofibers Active Layer, *Sens. Actuators B: Chem.*, 386, 1–11.
- Triyana, K., Rianjanu, A., Nugroho, D. B., As'ari, A. H., Kusumaatmaja, A., Roto, R., Suryana, R., and Wasisto, H. S., 2019, A Highly Sensitive Safrole Sensor Based on Polyvinyl Acetate (PVAc) Nanofiber-Coated QCM, *Sci. Rep.*, 1(9), 1–12.
- Triyana, K., Sembiring, A., Rianjanu, A., Hidayat, S. N., Riowirawan, R., Julian, T., Kusumaatmaja, A., Santoso, I., and Roto, R., 2018, Chitosan-Based Quartz Crystal Microbalance for Alcohol Sensing, *Electron.*, 9(7), 1–11.
- Vennila, P., Yoo, D. J., Kim, A. R., and Kumar, G. G., 2017, Ni-Co/Fe₃O₄ Flower-like Nanocomposite for the Highly Sensitive and Selective Enzyme Free Glucose Sensor Applications, *J. Alloys Compd.*, 703, 633–642.
- Xue, J., Wu, T., Dai, Y., and Xia, Y., 2019, Electrospinning and Electrospun Nanofibers: Methods, Materials, and Applications, *Chem. Rev.*, 8(119), 5298–5415.
- Yan, H., Zhang, J., You, C., Song, Z., Yu, B., and Shen, Y., 2009, Influences of Different Synthesis Conditions on Properties of Fe₃O₄ Nanoparticles, *Mater. Chem. Phys.*, 1(113), 46–52.
- Zak, A. K., Shirmahd, H., Mohammadi, S., and Banihashemian, S. M., 2020, Solvothermal Synthesis of Porous Fe₃O₄ Nanoparticles for Humidity Sensor Application, *Mater. Res. Express*, 2(7), 1–9.
- Zhang, K., Hu, R., Fan, G., and Li, G., 2017, Graphene Oxide/Chitosan Nanocomposite Coated Quartz Crystal Microbalance Sensor for Detection of Amine Vapors, *Sens. Actuators B: Chem.*, 243, 721–730.
- Zhou, Y., Xu, K., Zheng, Z., He, X., and Zhang, C., 2024, Quartz Crystal Microbalance Sensor Based on ZnO Nanofilm for Methanol Detection, *IEEE Sens. J.*, 1(24), 204–214.