

DAFTAR PUSTAKA

- Abbaszadeh, A., Makouei, S., dan Meshgini, S., 2021, Ammonia Measurement in Exhaled Human Breath Using PCF Sensor for Medical Applications, *Photonics Nanostructures - Fundam. Appl.*, 44, 100917.
- Ajeel, K.I., dan Kareem, Q.S., 2019, Synthesis and Characteristics of Polyaniline (PANI) Filled by Graphene (PANI/GR) Nano-Films, *J. Phys. Conf. Ser.*, 1234, 012020.
- Azzedine, B., Chakaroun, M., dan Fischer, A.P.A., 2017, Organic Light-Emitting Diodes, *Org. Lasers*, 49–93.
- Bernal, Y.P., Alvarado, J., Juárez, R.L., Méndez Rojas, M.Á., de Vasconcelos, E.A., de Azevedo, W.M., Iniesta, S.A., dan Cab, J.V., 2019, Synthesis and Characterization of MCM-41 Powder and Its Deposition by Spin-Coating, *Optik (Stuttg.)*, 185, 429–440.
- Cakir, O., Bakhshpour, M., Yilmaz, F., dan Baysal, Z., 2019, Novel QCM and SPR Sensors Based on Molecular Imprinting for Highly Sensitive and Selective Detection of 2,4-dichlorophenoxyacetic Acid in Apple Samples, *Mater. Sci. Eng. C*, 102, 483–491.
- Chaudhary, K.T., 2021, Thin Film deposition: Solution Based Approach, *Thin Film.*, 1–12.
- Chen, G.W., dan Majid, W.H.A., 2006, Pyroelectric properties of polyvinylidene fluoride (PVDF) by Quasi Static method, *IEEE Int. Conf. Semicond. Electron. Proceedings, ICSE*, 468–471.
- Chen, X., Hu, Y., Xie, Z., dan Wang, H., 2018, *Materials and Design of Photocatalytic Membranes*, Elsevier Inc.
- Das, T., Das, S., Karmakar, M., Chakraborty, S., Saha, D., dan Pal, M., 2020, Novel Barium Hexaferrite Based Highly Selective and Stable Trace Ammonia Sensor for Detection of Renal Disease by Exhaled Breath Analysis, *Sensors Actuators, B Chem.*, 325, 128765.
- Debabhuti, N., Mukherjee, S., Neogi, S., Sharma, P., Sk, U.H., Maiti, S., Sarkar, M.P., Tudu, B., Bhattacharyya, N., dan Bandyopadhyay, R., 2022, A Study of Vegetable Oil Modified QCM Sensor to Detect β -pinene in Indian Cardamom, *Talanta*, 236, 122837.
- Debabhuti, N., Neogi, S., Mukherjee, S., Dhar, A., Sharma, P., Vekariya, R.L., Sarkar, M.P., Tudu, B., Bhattacharyya, N., Bandyopadhyay, R., dan Muddassir, M., 2021, Development of QCM Sensor to Detect α -terpinyl Acetate in Cardamom, *Sensors Actuators, A Phys.*, 319, 112521.
- Donato, N., Neri, G., Leonardi, S.G., Fusco, Z., dan Tricoli, A., 2019, High Performance Flame-Made Ultraporous ZnO-Based QCM Sensor for Acetaldehyde, *I2MTC 2019 - 2019 IEEE Int. Instrum. Meas. Technol. Conf. Proc.*, 8–12.

- Fauzi, F., Rianjanu, A., Santoso, I., dan Triyana, K., 2021, Gas and Humidity Sensing with Quartz Crystal Microbalance (QCM) Coated with Graphene-Based Materials – A Mini Review, *Sensors Actuators, A Phys.*, 330, 112837.
- Gao, F., Mu, J., Bi, Z., Wang, S., dan Li, Z., 2021, Recent Advances of Polyaniline Composites in Anticorrosive Coatings: A Review, *Prog. Org. Coatings*, 151, 106071.
- Di Gianfrancesco, A., 2017, Technologies for Chemical Analyses, Microstructural and Inspection Investigations,. In, *Materials for Ultra-Supercritical and Advanced Ultra-Supercritical Power Plants*. Elsevier Ltd, pp. 197–245.
- Haghighi, E., dan Zeinali, S., 2020, Formaldehyde Detection Using Quartz Crystal Microbalance (QCM) Nanosensor Coated by Nanoporous MIL-101(Cr) Film, *Microporous Mesoporous Mater.*, 300, 110065.
- Han, P., Song, X., dan Hao, C., 2020, Excited-State Hydrogen Bonding: Detecting Ammonia Using an HHTP-DPB Covalent Organic Framework, *Chem. Phys.*, 536, 110822.
- Hibbard, T., Crowley, K., dan Killard, A.J., 2013, Direct Measurement of Ammonia in Simulated Human Breath Using an Inkjet-Printed Polyaniline Nanoparticle Sensor, *Anal. Chim. Acta*, 779, 56–63.
- Hou, X., Lv, S., Chen, Z., dan Xiao, F., 2018, Applications of Fourier Transform Infrared Spectroscopy Technologies on Asphalt Materials, *Meas. J. Int. Meas. Confed.*, 121, 304–316.
- Hu, J., Xue, S., Schneider, O., Yesilbas, G., Knoll, A., dan Huang, X., 2020, Comparison of The Absolute Mass Sensitivity of Ring Electrode QCM and Standard QCM Using Electrodeposition, *Electrochem. commun.*, 119, 106826.
- Javadian-Saraf, A., Hosseini, E., Wiltshire, B.D., Zarifi, M.H., dan Arjmand, M., 2021, Graphene Oxide/Polyaniline-Based Microwave Split-Ring Resonator: A Versatile Platform towards Ammonia Sensing, *J. Hazard. Mater.*, 418, 126283.
- Jayawardena, S., Siriwardena, H.D., Rajapakse, R.M.G., Kubono, A., dan Shimomura, M., 2019, Fabrication of a Quartz Crystal Microbalance Sensor Based on Graphene Oxide/TiO₂ Composite for The Detection of Chemical Vapors at Room Temperature, *Appl. Surf. Sci.*, 493, 250–260.
- Kalantar-Zadeh, K., 2013, *Sensors: An introductory course*, Springer, Australia.
- Kang, Z., Zhang, D., Li, T., Liu, X., dan Song, X., 2021, Polydopamine-Modified SnO₂ Nanofiber Composite Coated QCM Gas Sensor for High-Performance Formaldehyde Sensing, *Sensors Actuators, B Chem.*, 345, 130299.
- Kashan, M.A.M., Kalavally, V., dan Ramakrishnan, N., 2018, Sensing Film-Coated QCM Coupled Resonator Sensors: Approach, Fabrication, and Demonstration, *Sensors Actuators, A Phys.*, 274, 64–72.
- Kong, I., 2016, Polymers with Nano-Encapsulated Functional Polymers, *Des. Appl. Nanostructured Polym. Blends Nanocomposite Syst.*, 125–154.

- Konieczka, P., 2012, Validation and Regulatory Issues for Sample Preparation., In, *Comprehensive Sampling and Sample Preparation*. Elsevier, pp. 699–711.
- Kukla, A.L., Shirshov, Y.M., dan Piletsky, S.A., 1996, Ammonia Sensors Based on Sensitive Polyaniline Films, *Sensors Actuators, B Chem.*, 37, 135–140.
- Kundu, S., George, S.J., dan Kulkarni, G.U., 2021, Parts per Billion Sensitive, Highly Selective Ambient Operable, Ammonia Sensor with Supramolecular Nanofibres as Active Element, *Sensors Actuators B Chem.*, 347, 130634.
- de Leon, A., dan Advincula, R.C., 2015, Conducting Polymers with Superhydrophobic Effects as Anticorrosion Coating, *Intell. Coatings Corros. Control*, 409–430.
- Li, D.M., Li, S.Q., Huang, J.Y., Yan, Y.L., Zhang, S.Y., Tang, X.H., Fan, J., Zheng, S.R., Zhang, W.G., dan Cai, S.L., 2021, A Recyclable Bipyridine-Containing Covalent Organic Framework-Based QCM Sensor for Detection of Hg(II) Ion in Aqueous Solution, *J. Solid State Chem.*, 302, 122421.
- Lin, K.Y., Hu, L.W., Chen, K.L., Siao, M.D., Ji, W.F., Yang, C.C., Yeh, J.M., dan Chiu, K.C., 2017, Characterization of Polyaniline Synthesized from Chemical Oxidative Polymerization at Various Polymerization Temperatures, *Eur. Polym. J.*, 88, 311–319.
- Liu, A., Lv, S., Jiang, L., Liu, F., Zhao, L., Wang, J., Hu, X., Yang, Z., He, J., Wang, C., Yan, X., Sun, P., Shimanoe, K., dan Lu, G., 2021, The Gas Sensor Utilizing Polyaniline/ MoS₂ Nanosheets/ SnO₂ Nanotubes for The Room Temperature Detection of Ammonia, *Sensors Actuators, B Chem.*, 332, 129444.
- Longo, V., Forleo, A., Ferramosca, A., Notari, T., Pappalardo, S., Siciliano, P., Capone, S., dan Montano, L., 2021, Blood, Urine and Semen Volatile Organic Compound (VOC) Pattern Analysis for Assessing Health Environmental Impact in Highly Polluted Areas in Italy, *Environ. Pollut.*, 286, 117410.
- Menzel, V.C., dan Tudela, I., 2021, Additive Manufacturing of Polyaniline-Based Materials: An Opportunity for New Designs and Applications in Energy and Biotechnology, *Curr. Opin. Chem. Eng.*, 35, 100742.
- Mishra, A., Bhatt, N., dan Bajpai, A.K., 2019, Nanostructured Superhydrophobic Coatings for Solar Panel Applications, *Nanomater. Coatings Fundam. Appl.*, 397–424.
- Mitrayana, Nikita, J.G., Wasono, M.A.J., dan Satriawan, M., 2020, CO₂ Laser Photoacoustic Spectrometer for Measuring Ethylene, Acetone, and Ammonia in The Breath of Patients with Renal Disease, *Sens. Bio-Sensing Res.*, 30, 100387.
- Morris, A.S., dan Langari, R., 2012, *Measurement and Instrumentation: Theory and Application*, Elsevier, United State.
- Mu, S., 2005, Polyaniline with Two Types of Functional Groups: Preparation and Characteristics, *Macromol. Chem. Phys.*, 206, 689–695.
- Nie, Q., Pang, Z., Li, D., Zhou, H., Huang, F., Cai, Y., dan Wei, Q., 2018, Facile

Fabrication of Flexible SiO₂/PANI Nanofibers for Ammonia Gas Sensing at Room Temperature, *Colloids Surfaces A Physicochem. Eng. Asp.*, 537, 532–539.

- Oriakhi, C.O., 2009, *Chemistry in Quantitative Language: Fundamentals of General Chemistry Calculations*, Oxford University Press, Inc., New York.
- Putri, N.P., Pravitasari, D.W., Al Aziz, F., Maulidiah, Santjojo, D.J.D.H., Masruroh, dan Sakti, S.P., 2019, Solvent Effect on Viscoelastic Behaviour and Morphology of Polyaniline Coating at QCM Sensor, *J. Phys. Conf. Ser.*, 1417, 012002.
- Ren, Z., Shi, Y., Song, T., Wang, T., Tang, B., Niu, H., dan Yu, X., 2021, Flexible Low-Temperature Ammonia Gas Sensor Based on Reduced Graphene Oxide and Molybdenum Disulfide, *Chemosensors*, 9, 1–16.
- Rianjanu, A., Triyana, K., Nugroho, D.B., Kusumaatmaja, A., dan Roto, R., 2020, Electrospun Polyvinyl Acetate Nanofiber Modified Quartz Crystal Microbalance for Detection of Primary Alcohol Vapor, *Sensors Actuators, A Phys.*, 301, 111742.
- Rolewicz-Kalińska, A., Lelicińska-Serafin, K., dan Manczarski, P., 2021, Volatile Organic Compounds, Ammonia and Hydrogen Sulphide Removal Using a Two-stage Membrane Biofiltration Process, *Chem. Eng. Res. Des.*, 165, 69–80.
- Sakti, S.P., Masruroh, Istiroyah, Kamasi, D.D., dan Zafirah, T.N., 2020, Ultra Thick Polystyrene Coating on Quartz Crystal Microbalance Sensor, *Mater. Today Proc.*, 44, 3217–3220.
- Santos, M.C., Bianchi, A.G.C., Ushizima, D.M., Pavinatto, F.J., dan Bianchi, R.F., 2017, Ammonia Gas Sensor Based on The Frequency-Dependent Impedance Characteristics of Ultrathin Polyaniline Films, *Sensors Actuators, A Phys.*, 253, 156–164.
- Sharan, R., Roy, M., Tyagi, A.K., dan Dutta, A., 2018, Lanthanum Gallate Based Amperometric Electrochemical Sensor for Detecting Ammonia in ppm Level: Optimization of Electrode Compositions, *Sensors Actuators, B Chem.*, 258, 454–460.
- Shekar, B.C., Sathish, S., dan Sengoden, R., 2013, Spin Coated Nano Scale PMMA Films for Organic Thin Film Transistors, *Phys. Procedia*, 49, 145–157.
- Shen, C.Y., Huang, C.P., dan Huang, W.T., 2004, Gas-Detecting Properties of Surface Acoustic Wave Ammonia Sensors, *Sensors Actuators, B Chem.*, 101, 1–7.
- Shrivastava, A., dan Gupta, V., 2011, Methods for the Determination of Limit of Detection and Limit of Quantitation of the Analytical Methods, *Chronicles Young Sci.*, 2, 21.
- Song, K., 2017, *Interphase Characterization in Rubber Nanocomposites*, Elsevier Ltd.

- Teramura, Y., dan Takai, M., 2018, Quartz Crystal Microbalance, *Compend. Surf. Interface Anal.*, 509–520.
- Triyana, K., Sembiring, A., Rianjanu, A., Hidayat, S.N., Riowirawan, R., Julian, T., Kusumaatmaja, A., Santoso, I., dan Roto, R., 2018, Chitosan-Based Quartz Crystal Microbalance for Alcohol Sensing, *Electronics*, 7, 181.
- Wang, L., 2020, Metal-Organic Frameworks for QCM-Based Gas Sensors: A Review, *Sensors Actuators, A Phys.*, 307, 111984.
- Wang, T., Yasukochi, W., Korposh, S., James, S.W., Tatam, R.P., dan Lee, S.W., 2016, A Long Period Grating Optical Fiber Sensor with nano-assembled porphyrin layers for detecting ammonia gas, *Sensors Actuators, B Chem.*, 228, 573–580.
- Wang, X., Cui, F., Lin, J., Ding, B., Yu, J., dan Al-Deyab, S.S., 2012, Functionalized Nanoporous TiO₂ Fibers on Quartz Crystal Microbalance Platform for Formaldehyde Sensor, *Sensors Actuators, B Chem.*, 171–172, 658–665.
- Wu, Z., Zhu, S., Dong, X., Yao, Y., Guo, Y., Gu, S., dan Zhou, Z., 2019, A Facile Method to Graphene Oxide/Polyaniline Nanocomposite with Sandwich-Like Structure for Enhanced Electrical Properties of Humidity Detection, *Anal. Chim. Acta*, 1080, 178–188.
- Yadav, J.B., Patil, R.B., Puri, R.K., dan Puri, V., 2008, Studies on Spin Coated PANI/PMMA Composite Thin Film: Effect of Post-Deposition Heating, *Appl. Surf. Sci.*, 255, 2825–2829.
- Yilbas, B.S., Al-Sharafi, A., dan Ali, H., 2019, Surfaces for Self-Cleaning, *Self-Cleaning Surfaces Water Droplet Mobil.*, 45–98.
- Yousif, M.Q., dan Qasem, S.A., 2016, Tissue Processing and Staining for Histological Analyses,. In, *Skin Tissue Engineering and Regenerative Medicine*. Elsevier Inc., pp. 49–59.