

DAFTAR PUSTAKA

- Abida, Alaqel, S., Imran, M., El-Feky, S.A., dan Khan, S.A., Synthesis and antimicrobial activity of 2-(substituted phenyl)-1-(7-substituted coumarin-3-yl)prop-2-ene-1-ones, *J. Chem. Pharm. Res.*, 5(12), 1089-1093.
- Afandi, T., 2019, Sintesis Senyawa Turunan Nitro dan Azo Imidazol sebagai Sensor Kolorimetri Amina, *Tesis*, Departemen Kimia FMIPA Universitas Gadjah Mada, Yogyakarta.
- Ali, R., Razi, S.S., Shahid, M., Srivastava, P., dan Misra, A., 2016, Off –On –Off Fluorescence Behavior of An Intramolecular Charge Transfer Probe Toward Anions and CO₂, *Spectrochim. Acta Part A: Molec. Biomolec. Spectr.*, 168, 21–28.
- Ali, A., Banerjee, B., Srivastava, V., Verma, V.K., 2023, Organochalcogen (Se/Te) substituted Schiff bases: Syntheses and applications, *Materials Today: Proceedings*, 1-8.
- Aly, K.I., Mohamed, M.G., Younis, O., Mahross, M.H., Abdel-Hakim, M., dan Sayed, M.M., 2020, Salicylaldehyde Azine-functionalized Polybenzoxazine: Synthesis, Characterization, and Its Nanocomposites as Coatings for Inhibiting The Mild Steel Corrosion, *Progress in Organic Coatings*, 138, 1-11.
- Anonim, 2024, *Pusat data dan sistem informasi pertanian sekretariat jenderal, kementerian pertanian tahun 2024*.
- Arcovito, G., Bonamico, M., Domenicano, A., dan Vaciago, A., 1969, Crystal and Molecular Structure of Salicylaldehyde Azine, *J. Chem. Soc : Phys. Org.*, 733-741.
- Arulkumar, A., Karthik, G., Paramasivam, S., dan Rabie, M.A., 2017, Histamine Levels in Indian Fish via Enzymatic, TLC, and HPLC Methods During Storage, *J. Food Meas. Charact.*, 11(1), 281-289.
- Bao, X., Zhou, Y., dan Song, B., 2012, Recognition and Sensing Properties of a Quinazolinyllaminothiourea-based Anion Receptor in Non Aqueous and Aqueous CH₃CN-DMSO Medium, *Sens. Actuators B Chem.*, 171-172, 550-555.
- Bekhit, A.E.A., Holman, B.W.B., Giteru, S.G., Hopkins, D.L., Total volatile basic nitrogen (TVB-N) and its role in meat spoilage: A review, *Trends in Food Sci. Tech.*, 109, 280-302.
- Bhattu, M., Wani, A.A., Verma, M., Bharatam, P.V., Kathuria, D. dan Simal-Gandara, J., 2023, A selective turn-on fluorescent chemosensor 1,1-

diaminoazine for azinphos-methyl, *J. Photochem. Photobiol.*, 437(38), 114476.

Bhosle, A.A., Banerjee, M., Gupta, V., Ghosh, S., Bhasikuttan, A.C., dan Chatterjee, A., 2022, Mechanochemical synthesis of an AIE-TICT-ESIPT active orange-emissive chemodosimeter for selective detection of hydrogen peroxide in a aqueous media and living cells, and solid-phase quantitation using a smartphone, *New J. Chem.*, 18961-18972.

Bhosle, A.A., Banerjee, M., dan Chatterjee, A., 2024, Aggregation-induced emission-active a chemosensing applications: a five-year, *Sens.Diagn.*, 3, 745-782.

Bicker, K.L., Wiskur, S.L., dan Lavigne, J.J., 2011, *Chemosensors: Principles, Strategies, and Applications*, John Wiley & Sons, Inc., New York.

Brightwell, G. dan Clemens, R., 2012, Development and validation of a real-time PCR assay specific for *Clostridium estertheticum* and *C. estertheticum*-like psychrotolerant bacteria, *Meat Sci.*, 92(4), 697-703.

Cao, Y., Gu, W., Zhang, J., Chu, Y.J., Ye, X., Hu, Y., dan Chen, J., 2013, Effects of chitosan, aqueous extract of ginger, onion and garlic on quality and shelf life of stewed-pork during refrigerated storage. *Food Chem.*, 141, 1655–1660.

Chen, X., Zhou, Y., Peng, X., dan Yoon, J., 2010, Fluorescent and Colorimetric Probes for Detection of Thiols, *Chem. Soc. Rev.*, 391(6), 2120-2135.

Chiter, C., Bouchama, A., Mouas, T., Allal, H., Yahiaoui, M., Warad, I., Zarrouka, A., dan Djedouani, A., 2020, Synthesis, crystal structure, spectroscopic and hirshfeld surface analysis, NCI-RDG, DFT, computations and antibacterial activity of new asymmetrical azines, *J. Mol. Struct.*, 1217, 1-12.

Chouiter, A., Mousser, M., Mousser, H., Krid, A., Belkhiri, L., Fleutot, S., François, M., 2023, Synthesis, spectra, crystal, DFT, molecular docking and in vitro cholinesterase inhibition evaluation on two novel symmetrical Azine Schiff bases, *J. Mol. Struct.*, 1281, 1-12.

Chourasiya, S. S., Kathuria, D., Wani, A. A., dan Bharatam, P.V., 2019, Azines: Synthesis, Structure, Electronic Structure and Their Applications, *Org. Biomol. Chem.*, 17, 8486-8521.

Costero, A.M. Parra, M., Gil, S., dan Gaviña, P., 2018, BODIPY Core as Signaling Unit in Chemosensor Design, BODIPY Dyes –A Privilege Molecular Scaffold with Tunable Properties, *IntechOpen*.

Czarnik, A.W., 2002, *Topics in Fluorescence Spectroscopy*, Springer, Boston.

Dascalu, A., Halgreen, L., Torres-Huerta, A., dan Valkenier, H., 2022, Dynamic

covalent chemistry with azines, *Chem. Commun.*, 58, 11103.

Du, L., Lao, Y., Sasaki, Y., Lyu, X., Gao, P., Wu, S., Minami, T., dan Liu, Y., 2022, Freshness monitoring of raw fish by detecting biogenic amines using gold nanoparticle-based colorimetric sensor array, *RSC Adv.*, 12, 6803-6810.

Durak-Dados, A., Michalski, M., dan Osek, J., 2020, Histamine and other biogenic amines in food, *J. Vet. Res.*, 64, 281-288.

Ekici, K. dan Omer, A.K., 2018. The determination of some biogenic amines in Turkish fermented sausages consumed in Van, *Toxicol. Rep.*, 5, 639-643.

Ekici, K., dan Omer, A.K., 2020, Biogenic amines formation and their importance in fermented foods. *BIO Web Conf.* 17., 1-5.

Elfrida, T.S., Pramesti, D., dan Martuti, N.K.T., 2012, Pengaruh Suhu dan Waktu Penyimpanan Terhadap Pertumbuhan Bakteri dan Fungsi Ikan Bandeng, *J. Life Sci.*, 1(2), 101-105.

Erdag, D., Merhan, O., dan Yildiz, B., 2019, *Biogenic Amines : Biochemical and Pharmacological Properties of Biogenic Amines*, IntechOpen, London.

Ernawati, F., Prihatini, M., dan Yuriestia, A., 2016, Gambaran Konsumsi Protein Nabati dan Hewani pada Anak Balita *Stunting* dan Gizi Kurang di Indonesia, *Penelitian Gizi dan Makanan*, 39(2), 95-102.

Fitriani, N., Sintesis 3-(4-hidroksi-3-metoksifenil)-2-(1H-tetrazol-5-il)akrilonitril Sebagai Kemosensor Fluoresensi Amina, *Skripsi*, Departemen Kimia FMIPA Universitas Gadjah Mada, Yogyakarta.

Fletcher, B., Mullane, K., Platts, P., Todd, E., Power, A., Roberts, J., Chapman, J., Cozzolino, D., dan Chandra, S., 2018, Advances in Meat Spoilage Detection: A Short Focus on Rapid Methods and Technologies, *CyTA-J. Food*, 16(1), 1037-1044.

Fukuhara, G., 2020, Analytical Supramolecular Chemistry: Colorimetric and Fluorimetric Chemosensors, *J. Photochem. Photobiol. C: Photochem. Rev.*, 42, 100340.

Goswami, S., Das, A.K., Sen, D., Aich, K., Fun, H-K., dan Quah, C.K., 2012, A Simple Naphthalene-Based Colorimetric Sensor Selektive for Acetate, *Tetrahedron Lett.*, 53, 4819-4823.

Granchi, L., Romano, P., Mangani, S., Guerrini, S., dan Vincenzini, M., 2005, Production of biogenic amines by wine microorganisms, *Bull. l'OIV* 78:595-610.

Heravi, M.M., Zadsirjan, V., Mollaiye, M., Heydari, M., dan Koshvandi, A.T.K.,

2018, Salicylaldehyde as privileged synthons in multicomponent reactions, *Russ. Chem. Rev.*, 87(6), 553-585.

Hidayah, N., 2020, Sintesis Senyawa Kemosensor dari Veratraldehida untuk Uji Kandungan Formalin dalam Makanan, *Disertasi*, Departemen Kimia FMIPA Universitas Gadjah Mada, Yogyakarta

Hidayat, M.S., 2023, Senyawa Turunan Azina Simetris sebagai Antibakteri: Penambatan Molekuler, Sintesis, dan Uji Aktivitas, *Skripsi*, Departemen Kimia FMIPA Universitas Gadjah Mada, Yogyakarta.

Irmu, M.N., Purwono, B., dan Anwar, C., 2021, Synthesis of Symmetrical Acetophenone Azine Derivatives as Colorimetric and Fluorescent Cyanide Chemosensors, *Indones. J. Chem.*, 9, 1337-1347.

Kagatkar, S., Sunil, D., Kekuda, D., Kulkarni, S., dan Abdul Salam, A., 2020, New salicylaldehyde azine esters: Structural, aggregation induced fluorescence, electrochemical and theoretical studies, *J. Mol. Liq.*, 318, 1-10.

Karmakar, M., Pranab, K., Rahaman, S.J., Chattopadhyay, 2024, An overview on the synthesis, structure, and application of vanadyl complexes with hydrazonic acid ligands based on salicylaldehyde or its derivatives, *Inorg. Chimica Acta*, 565, 1-19.

Kamlet, M.J., Abboud, J.L.M., Abraham, M.H., dan Taft, R.W., 1983, Linear Solvation Energy Relationships. 23. A Comprehensive Collection of the Solvatochromic Parameters, π^* , α , and β , and Some Methods for Simplifying the Generalized Solvatochromic Equation, *J. Org. Chem.*, 48, 2877-2887.

Kaur, B., Kaur, N., dan Kumar, S., 2018, Colorimetric Metal Ion Sensors-A Comprehensive Review of The Years 2011–2016, *Coord. Chem. Rev.*, 358, 13–69.

Lasri, J., Aly, M.M., Eltayeb, N.E., Babgi, B.A., 2018, Synthesis of symmetrical and asymmetrical azines from hydrazones and/or ferrocenecarboxaldehyde as potential antimicrobial-antitumor agents, *J. Mol. Struct.*, 1164, 1-8.

Lestari, D., 2022, Sintesis Senyawa Turunan Nitrovanilin Azina sebagai Kemosensor Kolorimetri untuk Deteksi Anion Sulfida, *Tesis*, Departemen Kimia FMIPA Universitas Gadjah Mada, Yogyakarta.

Li, Q., Cai, Y., Yao, H., Lin, Q., Zhu, Y.R., Li, H., Zhang, Y.M., dan Wei, T.B., 2015, A Colorimetric and Fluorescent Cyanide Chemosensor Based on Dicyanovinyl Derivatives: Utilization of the Mechanism of Intramolecular Charge Transfer Blocking, *Spectrochim. Acta A Mol. Biomol. Spectrosc.*, 136, 1047-1051.

Li, D.Q., Tan, M.X., dan Jie, L., 2012, Synthesis, antioxidant and antibacterial

- activities of salicylaldehyde azine, *Adv. Mat. Res.*, 2366-2369.
- Lin, Q., Fu, Y.P., Chen, P., Wei, T.B., dan Zhang, Y.M., 2013, Rational Design, Green Synthesis of Reaction-Based Dual-Channel Chemosensors for Cyanide Anion, *Tetrahedron Lett.*, 54, 5031-5034.
- Linggayani, N.H.D.D., Purwono, B., dan Mardjan, M.I.D., 2018, Synthesis and Activity Test of Coumarin-Chalcone Derivative as a Colorimetric Sensor for Chicken Spoilage Indicator, *Materials Science Forum.*, 948, 153-158.
- Liu, Z.H., Devaraj, S., Yang, C.R., dan Yen, Y.P., 2012, A New Selective Chromogenic and Fluorogenic Sensor for Citrate Ion, *Sens. Actuators B Chem.*, 174, 555-562.
- Liu, H., Ji, Z., Liu, X., Shi, C., dan Yang, X., 2020, Non-destructive determination of chemical and microbial spoilage indicators of beef for freshness evaluation using front-face synchronous fluorescence spectroscopy, *Food Chemistry*, 321, 126628.
- Liur, I.J., 2020, Kualitas Kimia dan Mikrobiologis Daging Ayam Broiler Pada Pasar Tradisional Kota Ambon, *Al-Hayat: J. Biol. Appl. Biol.*, 2(3), 59-66.
- Mahnashi, M.H., Mahmoud, A.M., Alkahtani, S.A., Ali, R., dan El-Wakil, M.M., 2020, A novel imidazole derived colorimetric and fluorometric chemosensor for bifunctional detection of copper (II) and sulphide ion in environmental water samples, *Spectrochim. Acta Part A: Molec. Biomolec. Spectr.*, 228, 1-7.
- Martínez-Máñez, R. dan Sancenón, F., 2003, Fluorogenic and Chromogenic Chemosensor and Reagents for Anions, *Chem. Rev.*, 103(11), 4419-4476.
- Moss, G., Smith, P., dan Tavernier, D., 1995, Glossary of Class Names of Organic Compounds and Reactive Intermediates Based On Structure, *Pure and Appl. Chem.*, 67(8), 1307-1375.
- Nandiyanto, A.B.D., Oktiani, R., dan Ragadhita, R., 2019, How to Read and Interpret FTIR Spectroscopy of Organic Material, *IJoST*, 4(1), 97-118.
- Narayanan, V., Ganesan, V., Shanmugasundram, E., Durganandini, S., Vellaisamy, K., Amirthalingam, H., Rajamohan, R., dan Thambusamy, S., 2023, Spectral studies of synthetic symmetric syringaldehyde inclusion complexes as a fluorescent probe for the detection of metal ions, *J. Photochem. Photobiol., A*, 445, 115069.
- Nurohmah, B.A., Purwono, B., dan Suharman, 2021, Colorimetric Amine Detection by Vanilin-Hydrazone Derivatives during Chicken Meat Spoilage, *Sains Malaysia*, 50(4), 989-996.

- Omer, A.K., Mohammed, R.R., Ameen, P.S.M., Abas, Z.A., dan Ekici, K., 2021, Presence of Biogenic Amines in Food and Their Public Health Implications: A Review, *J. Food Prot.*, 84(9), 1539-1548.
- Pei, S.P., Hu, H.J., Chen, Y., Sun, Y., dan Qi, J., 2017, A Novel Dual-channel Chemosensor for CN^- Using Asymmetric Double-azine Derivatives in Aqueous Media and Its Application in Bitter Almond, *Spectrochim. Acta A Mol. Biomol. Spectrosc.*, 181, 131-136.
- Pessione, E., dan Cirrincione, S., 2016, Bioactive molecules released in food by lactic acid bacteria: encrypted peptides and biogenic amines, *Front. Microbiol.* 7, 876.
- Prestiani, A.E. dan Purwono, B., 2017, Styrene and Azo-Styrene Based Colorimetric Sensors for Highly Selective Detection of Cyanide, *Indones. J. Chem.*, 17(2), 238-247.
- Priyangga, K.T.A., 2018, Sintesis 2-Metoksi-6-(p-Fenildiazenilsulfonat)-4-(Fenilimo) Fenol dari Vanilin sebagai Kemosensor Amina, *Skripsi*, Departemen Kimia FMIPA Universitas Gadjah Mada, Yogyakarta.
- Priyangga, K.T.A., Kurniawan, Y.S., Ohto, K., dan Jumina, J., 2022, A Review on Calixarene Fluorescent Chemosensor Agents for Various Analytes, *J. Multidiscip. Appl. Nat. Sci.*, 2(1), 23-40.
- Radchatawedchakoon, W., Sangsusan, W., Kruanetr, S., dan Sakee, U., 2014, Synthesis and Evaluation of Simple Naked-Eye Colorimetric Chemosensors for Anions Based on Azo Dye-Thiosemicarbazones, *Spectrochim. Acta Part A.*, 121, 306-312.
- Raudienė, E., Gailius, D., Vinauskienė, R., Eisinaitė, V., Balčiūnas, G., Dobilienė, J., dan Tamkutė, L., 2018, Rapid Evaluation of Fresh Meat Chicken Meat Quality Electronic Nose, *Czech J. Food Sci.*, 36(5), 420-426.
- Rodriguez-Lazaro, D., Gonzales-García, P., Delibato, E., De Medici, D., Garcia-Gimeno, R.M., Valero, A., 2014, Next day *Salmonella sp.* detection method based on real-time PCR for meat, dairy and vegetable food products, *Int. J. Food Microbiol.*, 13(8), 113-120.
- Rokhmah, N.F., 2022, Sintesis Vanilin-Azina (VA) sebagai Kemosensor Kolorimetri Anion Sulfida, *Tesis*, Departemen Kimia FMIPA Universitas Gadjah Mada, Yogyakarta.
- Rosyidi, D.A., Susilo, dan Muhibianto, R., 2009, Pengaruh Penambahan Limbah Udag Terfermentasi Terhadap Produktivitas Ayam Broiler, *J. Ilmu Dan Teknologi Hasil Ternak*, 4(1), 1-10.
- Ruiz-Capillas, C. dan Herrero, A.M., 2019, Impact of Biogenic Amines on Food

Quality and Safety, *Foods*, 8(62), 1-16.

Şahin, Ö., Şahin, M., Koçak, N., dan Yilmaz, M., 2013, A New Anthracene Derivative of Calix[4]arene as a Fluorescent Chemosensor, *Turkish J. Chem.*, 37, 832–839.

Samanta, S., Manna, U., Ray, T., dan Das, G., 2015, An Aggregation-Induced Emission (AIE) Active Probe for Multiple Targets: A Fluorescent Sensor for Zn^{2+} and Al^{3+} & A Colorimetric Sensor for Cu^{2+} and F^- , *Dalton Transactions.*, 44, 18902–18910

Samanta, S., Manna, U., dan Das, G., 2017, White-light emission from simple AIE-ESIPT-excimer tripled single molecular system, *New J. Chem.*, 41, 1064–1072.

Santos-Figuerora, L.E., 2014, New Approaches for the Development of ChromoFluorogenic Sensors for Chemical Species of Biological, Industrial, and Environmental Interest, *PhD. Thesis*, Centro de Reconocimiento Molecular Y Desarrollo Tecnológico Universitat Politècnica de Valencia, Valencia.

Sawminathan, S., Munusamy, S., Manickam, S., Jothi, D., dan Kulathulyer, S., 2021, Azine based fluorescent rapid "off-on"chemosensor for detecting Th^{4+} and Fe^{3+} ions and its real-time application, *Dyes and Pigments*, 196, 1-10.

Shao, J., Lin, H., dan Lin, H., 2009, A Novel Chromo- and Fluorogenic Dual Responding $H_2PO_4^-$ Receptor Based on Azo Derivative, *Dye Pigm.*, 80, 259-263.

Shrinian, V.Z., Belen'kii, L.I., dan Krayushkin, M.M., 1999, A convenient method for the preparation of *N*-substituted hydrazones of aromatic ketones and aldehydes, *Russ. Chem. Bull.*, 48(11), 2171-2173.

Silverstein, R.M., Webster, F.X., dan Kiemle, D.J., 2005, *Spectrometric Identification of Organic Compounds*, Seventh Edition, John Wiley & Sons, Inc., New York.

Singh, R. dan Das, G., 2018, Fluorogenic Detection of Hg^{2+} and Ag^+ Ions Via Two Mechanistically Discrete Signal Genres: A Paradigm of Differentially Responsive Metal Ion Sensing, *Sensors and Actuators B: Chemical*, 258, 478–483.

Spange, S., Weiß, N., Schmidt, C.H., dan Schreiter, K., 2021, Reappraisal of empirical solvent polarity scales for organic solvents, *Chemistry-Methods*, 1, 42-60.

Sriramulu, D. dan Valiyaveetil, S., 2016, Perylene Derivatives as A Fluorescent Probe for Sensing of Amines in Solution, *Dyes and Pigments*, 134, 306–

314.

- Stadnik, J., dan Dolatowski, Z.J., 2010, Biogenic amines in meat and fermented meat products, *Acta Sci. Pol. Technol. Aliment.*, 9, 251–263.
- Sun, X., Du, B., Zhao, L., Jin, Y., Su, L., Tian, J., dan Wu, J., 2020, The effect of different starter cultures on biogenic amines and quality of fermented mutton sausages stored at 4 and 20 °C temperatures, *Food Sci. Nutr.*, 8, 4472-4483.
- Susilo, J., 2016, Synthesis of imidazole derivative compounds from vanillin as fluorometric sensor for anions, *Tesis*, Departemen Kimia FMIPA Universitas Gadjah Mada, Yogyakarta.
- Tang, W., Xiang, Y., dan Tong, A., 2009, Salicylaldehyde Azine as Fluorophores of Aggregation-Induced Emission Enhancement Characteristics, *J. Org.Chem.*, 74(5), 2163-2166.
- Tavallali, H., Deilamy-rad, G., Parhami, A., dan Kiyani, S., 2014, Dithizone as Novel and Efficient Chromogenic Probe for Cyanide Detection in Aqueous Media through Nucleophilic Addition into Diazenylthione Moiety, *Spectrochim. Acta - Part A Mol. Biomol. Spectrosc.*, 121, 139–146.
- Tharmalingam, B., Mathivanan, M., Dhamodiran, G., Mani, K.S., Paranjothy, M., dan Murugesapandian, B., Star-Shaped ESIPT-Active Mechanoresponsive Luminescent AIEgen and Its On-Off-On Emissive Response to Cu²⁺/S²⁻, *ACS Omega*, 4, 12459-12469.
- Udhayakumari, D., 2018, Chemical Chromogenic and Fluorogenic Chemosensors for Lethal Cyanide Ion. A Comprehensive Review of the Year 2016. *Sens. Actuators, B.*, 259, 1022–1057.
- Visciano, P., Schirone, M., dan Paparella, A., 2020, An overview of histamine and other biogenic amines in fish and fish products, *Foods*, 9(12), 1-15.
- Wang, B. dan Anslyn, E.V., 2011, *Chemosensors: Principles, Strategies, and Applications*, John Wiles & Sons, Inc., New York.
- Wang, Z., He, Z., Zhang, D., Li, H., dan Wang, Z., 2020, Using oxidation kinetic models to predict the quality indices of rabbit meat under different storage temperatures, *Meat Science*, 162, 108042.
- Wójcik, W., Łukasiewicz, M., dan Puppel, K., 2020, Biogenic amines: formation, action and toxicity - a review, *J. Sci. Food Agric.*, 2020, 1-7
- Wu, D., Sedgwick, A., Gunnlaugsson, T., Akkaya, E., Yoon, J., dan James, T., 2017, Fluorescent chemosensors: the past, present and future, *Chem. Soc. Rev.*, 46(23), 7105-7123.

- Yahyoui, M., Bouchama, A., Anak, B., Chiter, C., Djedouani, A., dan Rabilloud, F., 2019, Synthesis, molecular structure analyses and DFT studies on new asymmetrical azines based Schiff bases, *J. Mol. Struct.*, 1177, 69-77.
- Zhang, Z., Wang, C., Zhang, Z., Luo, Y., Sun, S., dan Zhang, G., 2018, Cd(II) Enhanced Fluorescence and Zn(II) Quenched Fluorescence with Phenylenevinylene Terpyridine: A Theoretical Investigation, *Spectrochim. Acta Part A: Molec. Biomolec. Spectr.*, 209, 40-48.
- Zhao, Q.X., Xu, J., Xue, C.H., Sheng, W.J., Gao, R.C., Xue, Y., dan Li, Z.J., 2007, Determination of biogenic amines in squid and white prawn by high-performance liquid chromatography with postcolumn derivatization, *J. Agric. Food Chem.*, 55, 3083–3088