

DAFTAR PUSTAKA

- Abedi-Firoozjah, R., Yousefi, S., Heydari, M., Seyedfatehi, F., Jafarzadeh, S., Mohammadi, R., Rouhi, M., & Garavand, F. (2022). Application of red cabbage anthocyanins as pH-sensitive pigments in smart food packaging and sensors. *Polymers*, *14*(8), 1629.
- Agarwal, H., Kumar, S. V., & Rajeshkumar, S. (2017). A review on green synthesis of zinc oxide nanoparticles—An eco-friendly approach. *Resource-Efficient Technologies*, *3*(4), 406–413.
- Aguilera, Y., Mojica, L., Rebollo-Hernanz, M., Berhow, M., De Mejía, E. G., & Martín-Cabrejas, M. A. (2016). Black bean coats: New source of anthocyanins stabilized by β -cyclodextrin copigmentation in a sport beverage. *Food chemistry*, *212*, 561–570.
- Ahmadiani, N., Sigurdson, G. T., Robbins, R. J., Collins, T. M., & Giusti, M. M. (2019). Solid phase fractionation techniques for segregation of red cabbage anthocyanins with different colorimetric and stability properties. *Food Research International*, *120*, 688–696.
- Akbari, A., Mehrabian, M., Salimi, Z., Dalir, S., & Akbarpour, M. (2019). The comparison of antibacterial activities of CsPbBr₃ and ZnO nanoparticles. *International Nano Letters*, *9*, 349–353.
- Akhtar, M. S., Panwar, J., & Yun, Y. S. (2013). Biogenic synthesis of metallic nanoparticles by plant extracts. *ACS Sustainable Chemistry & Engineering*, *1*(6), 591–602.
- Álvarez-Chimal, R., García-Pérez, V. I., Álvarez-Pérez, M. A., & Arenas-Alatorre, J. Á. (2021). Green synthesis of ZnO nanoparticles using a *Dysphania ambrosioides* extract. Structural characterization and antibacterial properties. *Materials Science and Engineering: C*, *118*, 111540.
- Alvarez-Suarez, J. M., Cuadrado, C., Redondo, I. B., Giampieri, F., González-Paramás, A. M., & Santos-Buelga, C. (2021). Novel approaches in anthocyanin research—Plant fortification and bioavailability issues. *Trends in Food Science & Technology*, *117*, 92–105.
- Amaliyah, S., Pangesti, D. P., Masruri, M., Sabarudin, A., & Sumitro, S. B. (2020). Green synthesis and characterization of copper nanoparticles using *Piper retrofractum* Vahl extract as bioreductor and capping agent. *Heliyon*, *6*(8), e04636.

- Anastas, P. T., & Warner, J. C. (1998). Principles of green chemistry. *Green chemistry: Theory and practice*, 29.
- Ansari, M. A., Murali, M., Prasad, D., Alzohairy, M. A., Almatroudi, A., Alomary, M. N., Udayashankar, A. C., Singh, S. B., Asiri, S. M. M., Ashwini, B. S., Gowtham, H. G., Kalegowda, N., Amruthesh, K.N., Lakshmeesha, T. R., & Niranjana, S. R. (2020). Cinnamomum verum bark extract mediated green synthesis of ZnO nanoparticles and their antibacterial potentiality. *Biomolecules*, 10(2), 336.
- Appapalam, S. T., & Panchamoorthy, R. (2017). Aerva lanata mediated phytofabrication of silver nanoparticles and evaluation of their antibacterial activity against wound associated bacteria. *Journal of the Taiwan Institute of Chemical Engineers*, 78, 539–551.
- Archana, V., Joseph Prince, J., & Kalainathan, S. (2021). Simple one-step leaf extract-assisted preparation of α -Fe₂O₃ nanoparticles, physicochemical properties, and its sunlight-driven photocatalytic activity on methylene blue dye degradation. *Journal of Nanomaterials*, 2021, 1–25.
- Arlofa, N., & Herutomo, H. (2017). Perbandingan Analisis Gugus Ataktik pada Polimer Polipropilena Dengan Metode Gravimetri dan Fourier Transform Infra Red (FTIR). *Prosiding Seminar Nasional Riset Terapan| SENASSET* (139–146).
- Arya, G., Kumari, R. M., Sharma, N., Gupta, N., Kumar, A., Chatterjee, S., & Nimesh, S. (2019). Catalytic, antibacterial and antibiofilm efficacy of biosynthesised silver nanoparticles using Prosopis juliflora leaf extract along with their wound healing potential. *Journal of Photochemistry and Photobiology B: Biology*, 190, 50–58.
- Ayinde, W. B., Dare, E. O., Bada, D. A., Alayande, S. O., Oladoyinbo, F. O., Idowu, M. A., Bolaji, O. B., Ezeh, I. M., & Osuji, R. U. (2017). Dye-modified ZnO nanohybrids: optical properties of the potential solar cell nanocomposites. *International Nano Letters*, 7, 171–179.
- Bahrulolum, H., Nooraei, S., Javanshir, N., Tarrahimofrad, H., Mirbagheri, V. S., Easton, A. J., & Ahmadian, G. (2021). Green synthesis of metal nanoparticles using microorganisms and their application in the agrifood sector. *Journal of Nanobiotechnology*, 19(1), 1–26.
- Baig, N., Kammakakam, I., & Falath, W. (2021). Nanomaterials: A review of synthesis methods, properties, recent progress, and challenges. *Materials Advances*, 2(6), 1821–1871.

- Cacique, A. P., Barbosa, É. S., Pinho, G. P. D., & Silvério, F. O. (2020). Maceration extraction conditions for determining the phenolic compounds and the antioxidant activity of *Catharanthus roseus* (L.) G. Don. *Ciência e Agrotecnologia*, 44.
- Chen, Y., Wang, Z., Zhang, H., Liu, Y., Zhang, S., Meng, Q., & Liu, W. (2018). Isolation of high purity anthocyanin monomers from red cabbage with recycling preparative liquid chromatography and their photostability. *Molecules*, 23(5), 991.
- Christian, G. D. (2003). *Analytical Chemistry* (6 edition.). Hoboken, NJ: Wiley.
- Chugh, D., Viswamalya, V. S., & Das, B. (2021). Green synthesis of silver nanoparticles with algae and the importance of capping agents in the process. *Journal of Genetic Engineering and Biotechnology*, 19(1), 1–21.
- Dada, A. O., Adekola, F. A., Dada, F. E., Adelani-Akande, A. T., Bello, M. O., Okonkwo, C. R., Inyinbor, A. A., Oluyori, A. P., Olayanju, A., Ajanaku, K. O., & Adetunji, C. O. (2019). Silver nanoparticle synthesis by *Acalypha wilkesiana* extract: phytochemical screening, characterization, influence of operational parameters, and preliminary antibacterial testing. *Heliyon*, 5(10), e02517.
- Devatha, C. P., Thalla, A. K., & Katte, S. Y. (2016). Green synthesis of iron nanoparticles using different leaf extracts for treatment of domestic waste water. *Journal of cleaner production*, 139, 1425–1435.
- Dhayalan, M., Denison, M. I. J., Ayyar, M., Gandhi, N. N., Krishnan, K., & Abdulhadi, B. (2018). Biogenic synthesis, characterization of gold and silver nanoparticles from *Coleus forskohlii* and their clinical importance. *Journal of Photochemistry and Photobiology B: Biology*, 183, 251–257.
- Dousti, B., Habibi, A., & Nabipor, F. (2021). Biosynthesis of zinc oxide nanoparticles using *Fumaria parviflora* extract and evaluation of their antibacterial and antioxidant activities. *BioTechnologia*, 102(1), 65–73.
- Drozdowska, M., Leszczyńska, T., Koronowicz, A., Piasna-Słupecka, E., Domagała, D., & Kusznierevicz, B. (2020). Young shoots of red cabbage are a better source of selected nutrients and glucosinolates in comparison to the vegetable at full maturity. *European Food Research and Technology*, 246(12), 2505–2515.

- Dumbrava, A., Berger, D., Prodan, G., Matei, C., Moscalu, F., & Diacon, A. (2017). Influence of synthesis route on the structure and properties of zinc oxide nanoparticles functionalized with anthocyanins from raw vegetable extracts. *ECS Journal of Solid State Science and Technology*, 6(12), P870.
- Dyrby, M., Westergaard, N., & Stapelfeldt, H. (2001). Light and heat sensitivity of red cabbage extract in soft drink model systems. *Food chemistry*, 72(4), 431–437.
- Echegaray, N., Munekata, P. E., Gullón, P., Dzuovor, C. K., Gullón, B., Kubi, F., & Lorenzo, J. M. (2022). Recent advances in food products fortification with anthocyanins. *Critical Reviews in Food Science and Nutrition*, 62(6), 1553–1567.
- Ekici, L., Simsek, Z., Ozturk, I., Sagdic, O., & Yetim, H. (2014). Effects of temperature, time, and pH on the stability of anthocyanin extracts: Prediction of total anthocyanin content using nonlinear models. *Food Analytical Methods*, 7, 1328–1336.
- El-Eskandarany, M. S. (2020). *Mechanical Alloying: Energy Storage, Protective Coatings, and Medical Applications*. William Andrew.
- Eliyana, A., & Winata, T. (2017). Karakterisasi FTIR pada Studi Awal Penumbuhan CNT dengan Prekursor Nanokatalis Ag dengan Metode HWC-VHF-PECVD. *Jurnal Fisika Dan Aplikasinya*, 13(2), 39–43.
- Escobar-Puentes, A. A., García-Gurrola, A., Rincón, S., Zepeda, A., & Martínez-Bustos, F. (2020). Effect of amylose/amylopectin content and succinylation on properties of corn starch nanoparticles as encapsulants of anthocyanins. *Carbohydrate polymers*, 250, 116972.
- Ezati, P., Tajik, H., Moradi, M., & Molaei, R. (2019). Intelligent pH-sensitive indicator based on starch-cellulose and alizarin dye to track freshness of rainbow trout fillet. *International journal of biological macromolecules*, 132, 157–165
- Feng, L., Zhai, Y. Y., Xu, J., Yao, W. F., Cao, Y. D., Cheng, F. F., Bao, B. H., & Zhang, L. (2019). A review on traditional uses, phytochemistry and pharmacology of *Eclipta prostrata* (L.) L. *Journal of ethnopharmacology*, 245, 112109.
- Fenger, J. A., Moloney, M., Robbins, R. J., Collins, T. M., & Dangles, O. (2019). The influence of acylation, metal binding and natural antioxidants on the thermal stability of red cabbage anthocyanins in neutral solution. *Food & Function*, 10(10), 6740–6751.

- Fleschhut, J., Kratzer, F., Rechkemmer, G., & Kulling, S. E. (2006). Stability and biotransformation of various dietary anthocyanins in vitro. *European journal of nutrition*, 45, 7–18.
- Freitas, P. A., Silva, R. R., de Oliveira, T. V., Soares, R. R., Junior, N. S., Moraes, A. R., Pires, A. C & Soares, N. F. (2020). Development and characterization of intelligent cellulose acetate-based films using red cabbage extract for visual detection of volatile bases. *Lwt*, 132, 109780.
- Gatou, M. A., Lagopati, N., Vagena, I. A., Gazouli, M., & Pavlatou, E. A. (2023). ZnO Nanoparticles from Different Precursors and Their Photocatalytic Potential for Biomedical Use. *Nanomaterials*, 13(1), 122.
- Ghareaghajlou, N., Hallaj-Nezhadi, S., & Ghasempour, Z. (2021). Red cabbage anthocyanins: Stability, extraction, biological activities and applications in food systems. *Food Chemistry*, 365, 130482.
- Harborne, J. B. (1987). Chemical signals in the ecosystem. *Annals of Botany*, 39–57.
- Harvey, D. (1999). *Modern Analytical Chemistry*. Boston : McGraw-Hill.
- Hernández-Morales, L., Espinoza-Gómez, H., Flores-López, L. Z., Sotelo-Barrera, E. L., Núñez-Rivera, A., Cadena-Nava, R. D., Alonso-Nunez, G., & Espinoza, K. A. (2019). Study of the green synthesis of silver nanoparticles using a natural extract of dark or white *Salvia hispanica* L. seeds and their antibacterial application. *Applied Surface Science*, 489, 952–961.
- Hosseini, S., Gharachorloo, M., Ghiassi-Tarzi, B., & Ghavami, M. (2016). Evaluation the organic acids ability for extraction of anthocyanins and phenolic compounds from different sources and their degradation kinetics during cold storage. *Polish Journal of Food and Nutrition Sciences*, 66(4).
- Hussain, I., Singh, N. B., Singh, A., Singh, H., & Singh, S. C. (2016). Green synthesis of nanoparticles and its potential application. *Biotechnology letters*, 38, 545–560.
- Ijaz, I., Gilani, E., Nazir, A., & Bukhari, A. (2020). Detail review on chemical, physical and green synthesis, classification, characterizations and applications of nanoparticles. *Green Chemistry Letters and Reviews*, 13(3), 223–245.
- Imade, E. E., Ajiboye, T. O., Fadiji, A. E., Onwudiwe, D. C., & Babalola, O. O. (2022). Green synthesis of zinc oxide nanoparticles using plantain peel extracts and the evaluation of their antibacterial activity. *Scientific African*, 16, e01152.

- Indah, A. P., & Mahyudin, A. (2022). Pengaruh Komposisi Kitosan Terhadap Sifat Fisis Dan Biodegradable Film Komposit Nanoserat Pinang Dengan Castor Oil Sebagai Plasticizer. *Jurnal Fisika Unand*, 11(4), 501–507.
- Indira, C. (2015). Pembuatan indikator asam basa karamunting. *Jurnal Kaunia*, 11(1), 1–10.
- Jafarzadeh, S., Nafchi, A. M., Salehabadi, A., Oladzad-Abbasabadi, N., & Jafari, S. M. (2021). Application of bio-nanocomposite films and edible coatings for extending the shelf life of fresh fruits and vegetables. *Advances in Colloid and Interface Science*, 291, 102405.
- Jampani, C., & Raghavarao, K. S. M. S. (2015). Process integration for purification and concentration of red cabbage (*Brassica oleracea* L.) anthocyanins. *Separation and Purification Technology*, 141, 10–16.
- Jayachandran, A., Aswathy, T. R., & Nair, A. S. (2021). Green synthesis and characterization of zinc oxide nanoparticles using Cayratia pedata leaf extract. *Biochemistry and Biophysics Reports*, 26, 100995.
- Jayaseelan, C., Rahuman, A. A., Kirthi, A. V., Marimuthu, S., Santhoshkumar, T., Bagavan, A., Gaurav, K., Karthik, L & Rao, K. B. (2012). Novel microbial route to synthesize ZnO nanoparticles using *Aeromonas hydrophila* and their activity against pathogenic bacteria and fungi. *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*, 90, 78–84.
- Jayappa, M. D., Ramaiah, C. K., Kumar, M. A. P., Suresh, D., Prabhu, A., Devasya, R. P., & Sheikh, S. (2020). Green synthesis of zinc oxide nanoparticles from the leaf, stem and in vitro grown callus of *Mussaenda frondosa* L: characterization and their applications. *Applied nanoscience*, 10, 3057–3074.
- Karthikumar, S., Vigneswari, K., & Jegatheesan, K. (2007). Screening of antibacterial and antioxidant activities of leaves of *Eclipta prostrata* (L). *Sci. Res. Essays*, 2(4), 101–04.
- Kenkel, J. (2010). *Analytical Chemistry for Technicians*. Florida : CRC Press LCC.
- Khadem, E., & Kharaziha, M. (2022). Red cabbage anthocyanin-functionalized tannic acid-silver nanoparticles with pH sensitivity and antibacterial properties. *Materials Chemistry and Physics*, 291, 126689.
- Koshy, J. T., Vasudevan, D., Sangeetha, D., & Prabu, A. A. (2023). Biopolymer Based Multifunctional Films Loaded with Anthocyanin Rich Floral Extract

and ZnO Nano Particles for Smart Packaging and Wound Healing Applications. *Polymers*, 15(10), 2372.

- Kudaer, N., Risan, M. H., Yousif, E., Kadhom, M., Raheem, R., Hairunisa, N., & Amalia, H. (2022). Effect of ZnO Nanoparticles as Antimicrobial on Multidrug Resistance Klebsiella pneumonia: A Review. *Jurnal Biomedika dan Kesehatan*, 5(3), 236–242.
- Kumar, P. V., Kala, S. M. J., & Prakash, K. S. (2019). Green synthesis derived Pt-nanoparticles using Xanthium strumarium leaf extract and their biological studies. *Journal of Environmental Chemical Engineering*, 7(3), 103146.
- Lallo da Silva, B., Abuçafy, M. P., Berbel Manaia, E., Oshiro Junior, J. A., Chiari-Andréo, B. G., Pietro, R. C. R., & Chiavacci, L. A. (2019). Relationship between structure and antimicrobial activity of zinc oxide nanoparticles: An overview. *International journal of nanomedicine*, 9395–9410.
- Lapailaka, T., & Triandi, R. (2013). Penentuan ukuran Kristal (crystallite size) lapisan tipis PZT dengan metode XRD melalui pendekatan persamaan Debye Scherrer. *Erudio Journal of Educational Innovation*, 1(2).
- Liu, Y., Liu, Y., Tao, C., Liu, M., Pan, Y., & Lv, Z. (2018). Effect of temperature and pH on stability of anthocyanin obtained from blueberry. *Journal of Food Measurement and Characterization*, 12, 1744–1753.
- Liu, D., Zhang, C., Pu, Y., Chen, S., Liu, L., Cui, Z., & Zhong, Y. (2022). Recent Advances in pH-Responsive Freshness Indicators Using Natural Food Colorants to Monitor Food Freshness. *Foods*, 11(13), 1884.
- Maccarone, E., Ferrigno, V., Longo, M. L., & Rapisarda, P. (1987). Effects of light on anthocyanins-kinetics and photodegradation products in acidic aqueous-solutions. *Annali di Chimica*, 77(5-6), 499–508.
- Mahdavi, B., Saneei, S., Qorbani, M., Zhaleh, M., Zangeneh, A., Zangeneh, M. M., Pirabbasi, E., Abbasi, N., & Ghaneialvar, H. (2019). Ziziphora clinopodioides Lam leaves aqueous extract mediated synthesis of zinc nanoparticles and their antibacterial, antifungal, cytotoxicity, antioxidant, and cutaneous wound healing properties under in vitro and in vivo conditions. *Applied Organometallic Chemistry*, 33(11), e5164.
- Mandal, A. K., Katuwal, S., Tettey, F., Gupta, A., Bhattarai, S., Jaisi, S., Bhandari, D. V., Shah, A. K., Bhattarai, N., & Parajuli, N. (2022). Current research on zinc oxide nanoparticles: synthesis, characterization, and biomedical applications. *Nanomaterials*, 12(17), 3066.

- Marszałek, K., Woźniak, Ł., Kruszewski, B., & Skąpska, S. (2017). The effect of high pressure techniques on the stability of anthocyanins in fruit and vegetables. *International Journal of Molecular Sciences*, 18(2), 277.
- McDougall, G. J., Fyffe, S., Dobson, P., & Stewart, D. (2007). Anthocyanins from red cabbage—stability to simulated gastrointestinal digestion. *Phytochemistry*, 68(9), 1285–1294.
- Mihra, M., Jura, M. R., & Ningsih, P. (2018). Analisis kadar tanin dalam ekstrak daun mimba (*Azadirachta indica* a. Juss) dengan pelarut air dan etanol. *Jurnal Akademika Kimia*, 7(4), 179–184.
- Mokrani, A., & Madani, K. (2016). Effect of solvent, time and temperature on the extraction of phenolic compounds and antioxidant capacity of peach (*Prunus persica* L.) fruit. *Separation and Purification Technology*, 162, 68–76.
- Moloney, M., Robbins, R. J., Collins, T. M., Kondo, T., Yoshida, K., & Dangles, O. (2018). Red cabbage anthocyanins: The influence of D-glucose acylation by hydroxycinnamic acids on their structural transformations in acidic to mildly alkaline conditions and on the resulting color. *Dyes and Pigments*, 158, 342–352.
- Muhammad, Y., Sri, I., & Nur, F. U. A. (2018). Karakterisasi Antosianin Kubis Merah sebagai Indikator pada Kemasan Cerdas. *Galung Tropika*, 7(1), 46–55.
- Mukhriani, M., Rusdi, M., Arsul, M. I., Sugiarna, R., & Farhan, N. (2019). Kadar fenolik dan flavonoid total ekstrak etanol daun anggur (*Vitis vinifera* l). *ad-Dawaa' Journal of Pharmaceutical Sciences*, 2(2).
- Munasir, M., Triwikantoro, T., Zainuri, M., & Darminto, D. (2012). Uji XRD dan XRF pada bahan mineral (batuan dan pasir) sebagai sumber material cerdas (CaCO_3 dan SiO_2). *Jurnal Penelitian Fisika dan Aplikasinya (JPFA)*, 2(1), 20–29.
- Negi, S., & Singh, V. (2018). Algae: A potential source for nanoparticle synthesis. *Journal of Applied and Natural Science*, 10(4), 1134–1140.
- Nuraini, H. (2020). Pengaruh Perbedaan Konsentrasi dan Uji Stabilitas Ekstrak Etanol 96% Daun Urang Aring (*Eclipta alba* L. Hassk) dalam Sediaan Gel Terhadap Aktivitas Antibakteri *Propionibacterium acnes* dan *Staphylococcus epidermidis*. *Indonesia Natural Research Pharmaceutical Journal*, 5(1), 54–64.

- Pandey, M. K., Singh, G. N., Sharma, R. K., & Lata, S. (2011). Antibacterial activity of *Eclipta alba* (L.) Hassk. *Journal of Applied Pharmaceutical Science*, (Issue), 104–107.
- Parrey, M. S., & Ahmad, I. (2016). Pharmacological values of *Eclipta alba* Linn (Asteraceae) asystematic review. *World. J. Pharm. Pharm. Sci*, 5(12), 504–512.
- Peng, Y. K., & Tsang, S. E. (2018). Facet-dependent photocatalysis of nanosize semiconductive metal oxides and progress of their characterization. *Nano Today*, 18, 15-34.
- Prietto, L., Pinto, V. Z., El Halal, S. L. M., de Moraes, M. G., Costa, J. A. V., Lim, L. T., Dias, A.R., & Zavareze, E. D. R. (2018). Ultrafine fibers of zein and anthocyanins as natural pH indicator. *Journal of the Science of Food and Agriculture*, 98(7), 2735–2741.
- Rane, A. V., Kanny, K., Abitha, V. K., & Thomas, S. (2018). Methods for synthesis of nanoparticles and fabrication of nanocomposites. In *Synthesis of inorganic nanomaterial*. Woodhead publishing.
- Rolim, W. R., Pelegrino, M. T., de Araújo Lima, B., Ferraz, L. S., Costa, F. N., Bernardes, J. S., Rodrigues, T., Brocchi, M., & Seabra, A. B. (2019). Green tea extract mediated biogenic synthesis of silver nanoparticles: Characterization, cytotoxicity evaluation and antibacterial activity. *Applied Surface Science*, 463, 66–74.
- Sajjad, S., Leghari, S. A. K., Ryma, N. U. A., & Farooqi, S. A. (2018). Green Synthesis of Metal-Based Nanoparticles and Their Applications. *Green Metal Nanoparticles: Synthesis, Characterization and Their Applications*, 23–77.
- Sergievskaia, A., Chauvin, A., & Konstantinidis, S. (2022). Sputtering onto liquids: a critical review. *Beilstein Journal of Nanotechnology*, 13(1), 10–53.
- 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*, 11, 1–41.
- Sharmila, M., Jothi Mani, R., Kader, A., Ahmad, A., Eldesoky, G. E., Yahya, A. E., & Bahajaj, A. A. A. (2021). Photocatalytic and biological activity of ZnO nanoparticles using honey. *Coatings*, 11(9), 1046.

- Sigurdson, G. T., & Giusti, M. M. (2014). Bathochromic and hyperchromic effects of aluminum salt complexation by anthocyanins from edible sources for blue color development. *Journal of Agricultural and Food Chemistry*, *62*(29), 6955–6965.
- Singh, A. K., Pal, P., Gupta, V., Yadav, T. P., Gupta, V., & Singh, S. P. (2018). Green synthesis, characterization and antimicrobial activity of zinc oxide quantum dots using *Eclipta alba*. *Materials Chemistry and Physics*, *203*, 40–48.
- Singh, T. A., Sharma, A., Tejwan, N., Ghosh, N., Das, J., & Sil, P. C. (2021). A state of the art review on the synthesis, antibacterial, antioxidant, antidiabetic and tissue regeneration activities of zinc oxide nanoparticles. *Advances in Colloid and Interface Science*, *295*, 102495.
- Sun, J., Jiang, H., Wu, H., Tong, C., Pang, J., & Wu, C. (2020). Multifunctional bionanocomposite films based on konjac glucomannan/chitosan with nano-ZnO and mulberry anthocyanin extract for active food packaging. *Food Hydrocolloids*, *107*, 105942.
- Suzery, M., Nudin, B., Bima, D. N., & Cahyono, B. (2020). Effects of Temperature and Heating Time on Degradation and Antioxidant Activity of Anthocyanin from Roselle Petals (*Hibiscus sabdariffa* L.). *International Journal of Science, Technology & Management*, *1*(4), 288–238.
- Taylor, T. A., & Unakal, C. G. (2022). *Staphylococcus aureus*. In *StatPearls [Internet]*. StatPearls Publishing.
- Uikey, P., & Vishwakarma, K. (2016). Review of zinc oxide (ZnO) nanoparticles applications and properties. *International Journal of Emerging Technology in Computer Science & Electronics*, *21*(2), 239–242.
- Unnikrishnan, K. P., Fathima, A., Hashim, K. M., & Balachandran, I. (2007). Antioxidant studies and determination of wedelolactone in *Eclipta alba*. *J Plant Sci*, *2*, 459–464.
- Xu, L., Guo, Y., Liao, Q., Zhang, J., & Xu, D. (2005). Morphological control of ZnO nanostructures by electrodeposition. *The Journal of Physical Chemistry B*, *109*(28), 13519-13522.
- Vijayakumar, S., Vinayagam, R., Anand, M. A. V., Venkatachalam, K., Saravanakumar, K., Wang, M. H., Sangeetha, C. C., Muthukaliannan, G. K., & David, E. (2020). Green synthesis of gold nanoparticle using *Eclipta alba* and its antidiabetic activities through regulation of Bcl-2 expression in pancreatic cell line. *Journal of Drug Delivery Science and Technology*, *58*, 101786.

- Walkowiak-Tomczak, D., & Czapski, J. (2007). Colour changes of a preparation from red cabbage during storage in a model system. *Food Chemistry*, *104*(2), 709–714.
- World Health Organization. (2015). *Global action plan on antimicrobial resistance*. Geneva: WHO.
- Zhai, X., Li, Z., Zhang, J., Shi, J., Zou, X., Huang, X., Zhang, D., Sun, Y., Yang, Z., Holmes, M & Povey, M. (2018). Natural biomaterial-based edible and pH-sensitive films combined with electrochemical writing for intelligent food packaging. *Journal of agricultural and food chemistry*, *66*(48), 12836–12846.
- Zhang, N., & Jing, P. (2022). Anthocyanins in Brassicaceae: Composition, stability, bioavailability, and potential health benefits. *Critical Reviews in Food Science and Nutrition*, *62*(8), 2205–2220.
- Zhao, B., Deng, S., Li, J., Sun, C., Fu, Y., & Liu, Z. (2021). Green synthesis, characterization and antibacterial study on the catechin-functionalized ZnO nanoclusters. *Materials Research Express*, *8*(2), 025006.
- Zhao, L., Liu, Y., Zhao, L., & Wang, Y. (2022). Anthocyanin-based pH-sensitive smart packaging films for monitoring food freshness. *Journal of Agriculture and Food Research*, *9*, 1.