

DAFTAR PUSTAKA

- Abutalib, M. M., & Rajeh, A. (2020). Preparation and characterization of polyaniline/sodium alginate-doped TiO₂ nanoparticles with promising mechanical and electrical properties and antimicrobial activity for food packaging applications. *Journal of Materials Science: Materials in Electronics*, *31*(12), 9430–9442. <https://doi.org/10.1007/s10854-020-03483-8>
- Afshar, S. V, Boldrin, A., Astrup, T. F., Daugaard, A. E., & Hartmann, N. B. (2024). Degradation of biodegradable plastics in waste management systems and the open environment: A critical review. *Journal of Cleaner Production*, *434*(October 2023), 140000. <https://doi.org/10.1016/j.jclepro.2023.140000>
- Ahmed, H., Rahaman, A., Uddin, E., Rafid, M., Hosen, S., & Kanta, R. (2025). Development and characterization of chitosan-based antimicrobial films : A sustainable alternative to plastic packaging. *Cleaner Chemical Engineering*, *11*(December 2024), 100157. <https://doi.org/10.1016/j.clce.2025.100157>
- Aizamddin, M. F., Mahat, M. M., Ariffin, Z. Z., Nawawi, M. A., Jani, N. A., Amdan, N. A. N., & Sadasivuni, K. K. (2022). Antibacterial Performance of Protonated Polyaniline-Integrated Polyester Fabrics. *Polymers*, *14*(13). <https://doi.org/10.3390/polym14132617>
- Alipuly, M., Kanzhigitova, D., Bexeitova, A., Askar, P., Kanayeva, D., Adilov, S., & Nuraje, N. (2025). Stable conductive PANI-based hydrogels with antibacterial activity. *Advanced Composites and Hybrid Materials*, *8*(1). <https://doi.org/10.1007/s42114-024-01110-2>
- Bibi, A., Nkede, F. N., Van, T. T., Wardak, M. H., Fanze, M., Ullah, S., Wigati, L. P., Wardana, A. A., Tanaka, F., & Tanaka, F. (2026). Multifunctional fermented cassava starch–chitosan films and coatings loaded with Hyssopus officinalis essential oil: Development, properties, postharvest preservation of cherry tomatoes. *Progress in Organic Coatings*, *217*(May), 110224. <https://doi.org/10.1016/j.porgcoat.2026.110224>
- Chia, M. R., Phang, S. W., & Ahmad, I. (2023). Influence of polyaniline and cellulose nanocrystals on starch biopolymer film for intelligent food packaging. *Food Bioscience*, *56*(September), 103212. <https://doi.org/10.1016/j.fbio.2023.103212>
- Das, M. P., R., S. P., Prasad, K., Jv, V., & M, R. (2017). Extraction and Characterization of Gelatin: a Functional Biopolymer. *International Journal of Pharmacy and Pharmaceutical Sciences*, *9*(9), 239. <https://doi.org/10.22159/ijpps.2017v9i9.17618>
- Djunaidi, M. C., Aini, A. Q., Widodo, D. S., Lusiana, R. A., & Suseno, A. (2021). Fe (III) adsorption using Fe (III) ionic imprinted polymer from polyeugenoxo acetate crosslinked with ethylene glycol dimethacrylate (EGDMA). *Journal of*

- Physics: Conference Series*, 1943(1). <https://doi.org/10.1088/1742-6596/1943/1/012167>
- Djunaidi, M. C., Azizah, A., & Gunawan. (2020). Synthesis of molecularly imprinted polymer urea based on polyeugenol with ethylene glycol dimethacrylate as crosslinking agent. *AIP Conference Proceedings*, 2237(June). <https://doi.org/10.1063/5.0005544>
- Fathurrahman, M., Suhendar, U., Iryani, A., Widiastuti, D., Ahmad, S. N., & Juniar, E. (2022). Sintesis dan Karakterisasi Komposit Eugenol-Silika Gel dari Abu Tongkol Jagung serta Analisis Antibakteri dan Daya Serap terhadap Air. *ALCHEMY Jurnal Penelitian Kimia*, 18(1), 10. <https://doi.org/10.20961/alchemy.18.1.47161.10-18>
- Gabriel, A. A., Solikhah, A. F., & Rahmawati, A. Y. (2021). Tensile Strength and Elongation Testing for Starch-Based Bioplastics using Melt Intercalation Method: A Review. *Journal of Physics: Conference Series*, 1858(1). <https://doi.org/10.1088/1742-6596/1858/1/012028>
- Haluti, I. J., Artiningsih, A., Syarif, T., Penelitian, A., Kunci, K., Kitosan, :, & Asam, B. (2025). Pengaruh Rasio Kitosan pada Karakteristik Bioplastik Degradable dari Pati Biji Asam (*Tamarindicus Indica* l) dan Ampas Teh Effect of Chitosan Ratio on Degradable Bioplastic Characteristics of Tamarind Seed Starch (*Tamarindicus Indica* l) and Tea Dregs. *Jurnal Kolaboratif Sains*, 8(2), 1100–1105. <https://doi.org/10.56338/jks.v8i2.7079>
- Ismael, M. (2020). A review on graphitic carbon nitride (g-C₃N₄) based nanocomposites: Synthesis, categories, and their application in photocatalysis. *Journal of Alloys and Compounds*, 846, 156446. <https://doi.org/10.1016/j.jallcom.2020.156446>
- Jeyakumar, G. E., & Lawrence, R. (2021). Mechanisms of bactericidal action of Eugenol against *Escherichia coli*. *Journal of Herbal Medicine*, 26(February 2017), 100406. <https://doi.org/10.1016/j.hermed.2020.100406>
- Jin, W., Liu, H., Li, Z., Nie, P., Zhao, G., Cheng, X., Zheng, G., & Yang, X. (2022). Effect of Hydrogel Contact Angle on Wall Thickness of Artificial Blood Vessel. *International Journal of Molecular Sciences*, 23(19). <https://doi.org/10.3390/ijms231911114>
- Kamble, B. B., Sharma, K. K., Sonawane, K. D., Tayade, S. N., Grammatikos, S., Reddy, Y. V. M., Reddy, S. L., Shin, J. H., & Park, J. P. (2024). Graphitic carbon nitride-based electrochemical sensors: A comprehensive review of their synthesis, characterization, and applications. *Advances in Colloid and Interface Science*, 333(August). <https://doi.org/10.1016/j.cis.2024.103284>
- Kimia, J. (2024). *BIOPLASTIC FROM JACKFRUIT SEED STARCH AND IT IS POTENCY FOR EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD) IN CHEMISTRY LEARNING*. 9(1), 1–19. <https://doi.org/10.30870/educhemia.v9i1.25426>

- Kiswandono, A. A., Nuryaman, A., Siswanta, D., Hidayat Aprilita, N., & Sri Juari Santosa, D. (2017). Sintesis dan Uji Kemampuan Senyawa Co-Eegdma Sebagai Senyawa Pembawa Pada Transport Fenol Menggunakan Metode Polymer Inclusion Membrane. *Jurnal Penelitian Saintek*, 22(2), 114–125.
- Liu, S., Gao, X., Fan, H., Zhang, M., Waterhouse, G. I. N., & Zhu, S. (2023). Green and recyclable graphitic carbon nitride/chitosan/polyvinyl alcohol photocatalytic films with efficient antibacterial activity for fruit packaging. *International Journal of Biological Macromolecules*, 236(March), 123974. <https://doi.org/10.1016/j.ijbiomac.2023.123974>
- Lu, C., Lorenz, N., Bazyar, H., Malucelli, G., & Kumru, B. (2025). Graphitic Carbon Nitride Embedded Bio-Based Acrylic Films as Surface Active Photocatalysts. *Polymer Science & Technology*, 1(1), 46–52. <https://doi.org/10.1021/polymscitech.4c00017>
- Mohamed, H. H., Aziz, M., Youssef, T. E., & Alomair, N. A. (2024). Microwave synthesized g-C3N4 nanofibers with modified properties for enhanced solar light photocatalytic performance. *Inorganic Chemistry Communications*, 168(July), 112975. <https://doi.org/10.1016/j.inoche.2024.112975>
- Molaei, M. J. (2023). Graphitic carbon nitride (g-C3N4) synthesis and heterostructures, principles, mechanisms, and recent advances: A critical review. *International Journal of Hydrogen Energy*, 48(84), 32708–32728. <https://doi.org/10.1016/j.ijhydene.2023.05.066>
- Ngadiwiyan, Dzahabiyyah, H. P., Ismiyanto, & Sarjono, P. R. (2024). Synthesis of Antibacterial Coating Film Based on Eugenol-Allyl Eugenol Copolymer with Chitosan-Gelatin. *Jurnal Kimia Valensi*, 10(2), 181–191. <https://doi.org/10.15408/jkv.v10i2.40944>
- Ngadiwiyan, Gunawan, Prasetya, N. B. A., Kusworo, T. D., & Susanto, H. (2022). Synthesis and characterization of sulfonated poly(eugenol-co-allyleugenol) membranes for proton exchange membrane fuel cells. *Heliyon*, 8(12), e12401. <https://doi.org/10.1016/j.heliyon.2022.e12401>
- Ngadiwiyan, Ismiyanto, Julianti, V. M., Bima, D. N., Gunawan, Prasetya, N. B. A., & Wijaya, R. A. (2025). Modifying a novel eugenol copolymer with an allyl-eugenol-based crosslinker to enhance anticorrosion and bioactivity potential for organic coating applications. *Progress in Organic Coatings*, 200(December 2024), 109094. <https://doi.org/10.1016/j.porgcoat.2025.109094>
- Nikookar, M., Rezaeifard, A., Maasoumeh Jafarpour, Grzhegorzhevskii, K. V., & Ostroushko, A. A. (2021). A top-down design for easy gram scale synthesis of melem nano rectangular prisms with improved surface area. *RSC Advances*, 11(61), 38862–38867. <https://doi.org/10.1039/d1ra07440g>

- Noraffandy Yahaya & Nur Fazila i Salleh. (2020). *POLYMERIZATION OF EUGENOL USING A CONCENTRATED NITRIC ACID (HNO₃) CATALYST AND MEDIA OF ACETIC ACID (CH₃COOH)*. 21(1), 1–9.
- Prasetya, N. B. A., Asiyah, A., Sarjono, P. R., Ngadiwiyana, N., & Ismiyanto, I. (2021). Synthesis of sulfonated poly-(eugenol divinylbenzene) nanosilver composite and its application as antibacterial compound of cotton fabric. *Journal of Physics: Conference Series*, 1943(1). <https://doi.org/10.1088/1742-6596/1943/1/012183>
- Prasetya, N. B. A., Ngadiwiyana, Ismiyanto, & Sarjono, P. R. (2019). Synthesis of copolymer eugenol crosslinked with divinyl benzene and preliminary study on its antibacterial activity. *IOP Conference Series: Materials Science and Engineering*, 509(1). <https://doi.org/10.1088/1757-899X/509/1/012102>
- Qu, T., Wang, X., & Zhang, F. (2025). Antibacterial Food Packaging with Chitosan and Cellulose Blends for Food Preservation. *Polymers*, 17(13), 1–24. <https://doi.org/10.3390/polym17131850>
- Science, E. (n.d.). *Physical properties of bioplastic agar / chitosan blend Physical properties of bioplastic agar / chitosan blend*. <https://doi.org/10.1088/1755-1315/978/1/012046>
- Shao, L., Xi, Y., & Weng, Y. (2022). Recent Advances in PLA-Based Antibacterial Food Packaging and Its Applications. *Molecules*, 27(18). <https://doi.org/10.3390/molecules27185953>
- Thurston, J. H., Hunter, N. M., Wayment, L. J., & Cornell, K. A. (2017). Urea-derived graphitic carbon nitride (u-g-C₃N₄) films with highly enhanced antimicrobial and sporicidal activity. *Journal of Colloid and Interface Science*, 505, 910–918. <https://doi.org/10.1016/j.jcis.2017.06.089>
- Yang, H., Sun, S., Yang, Q., & Cui, J. (2024). Supramolecular self-assembled graphitic carbon nitride catalyst: A comprehensive review on design principle, synthesis strategy, functionalization and application. *Nano Materials Science*, (xxxx). <https://doi.org/10.1016/j.nanoms.2024.10.014>
- Yu, H., Wang, Y., Wang, R., Ge, Y., Wang, L., & Wang, L. (2024). Tannic acid crosslinked chitosan/gelatin/SiO₂ biopolymer film with superhydrophobic, antioxidant and UV resistance properties for prematuring fruit packaging. *International Journal of Biological Macromolecules*, 275(P2), 133368. <https://doi.org/10.1016/j.ijbiomac.2024.133368>