

DAFTAR PUSTAKA

- Alothman, Z. A. (2012). A Review: Fundamental Aspects of Silicate Mesoporous Materials. *Materials*, 5(12), 2874–2902.
- Amelia, D. (2020). Analisis Gugus Fungsi Dan Keasaman Zcolit Hasil Sintesis Dari Lempung Alam. *Repository University of Riau*, 21(1), 1–9.
- Amri, S., & Utomo, M. P. (2017). Preparasi dan karakterisasi komposit ZnO-zeolit untuk fotodegradasi zat warna Congo red. *Jurnal Elemen Kimia*, 6(2), 29–36.
- Asyuri, N. A. (2022). *Sintesis Silika-Alumina Mesopori dari Lumpur Lapindo dengan Variasi Template CTAB/Gelatin menggunakan Metode Solvothermal untuk Adsorben Metilen Biru*. Skripsi. Universitas Diponegoro Semarang.
- Attia, A. A. M., Shouman, M. A. H., Khedr, S. A. A., & Hassan, N. A. (2018). Fixed-bed column studies for the removal of Congo red using simmondsia chinesis (Jojoba) and coated with chitosan. *Indonesian Journal of Chemistry*, 18(2), 294–305. <https://doi.org/10.22146/ijc.29264>
- Auerkari, P. (1996). *Mechanical and physical properties of engineering alumina ceramics* (Vol. 23). Technical Research Centre of Finland.
- Austin, T. (1996). *Chemical Product Industry*. McGraw-Hill.
- Baunsele, A. B., Kopon, A. M., Boelan, E. G., Leba, M. A. U., Komisia, F., Tukan, M. B., Taek, M. M., Tukan, G. D., Missa, H., Siswanta, D., Naat, J. N., & Rahayu. (2024). Adsorption of Methylene Blue using the Biosorbent of Coconut Fiber Activated by Nitric Acid. *Molekul*, 19(1), 128–142. <https://doi.org/10.20884/1.jm.2024.19.1.9443>
- Cahyaningrum, R., Safira, K. K., Lutfiyah, G. N., Zahra, S. I., & Rahasticha, A. A. (2021). Potensi Gelatin Dari Berbagai Sumber Dalam Memperbaiki Karakteristik Marshmallow: Review. *Pasundan Food Technology Journal*, 8(2), 39–44. <https://doi.org/10.23969/pftj.v8i2.4035>
- Calixto, S., Ganzherli, N., Gulyaev, S., & Figueroa-Gerstenmaier, S. (2018). Gelatin as a photosensitive material. *Molecules*, 23(8). <https://doi.org/10.3390/molecules23082064>
- da Silva, C. C., de Faria Lima, A., Moreto, J. A., Dantas, S., Alves Henrique, M., Pasquini, D., Cipriano Rangel, E., Scarmínio, J., & Gelamo, R. V. (2020). Influence of plasma treatment on the physical and chemical properties of sisal fibers and environmental application in adsorption of methylene blue. *Materials Today Communications*, 23, 101–140. <https://doi.org/10.1016/j.mtcomm.2020.101140>
- Dantelle, G., Beauquis, S., Le Dantec, R., Monnier, V., Galez, C., & Mugnier, Y. (2022). Solution-Based Synthesis Routes for the Preparation of Noncentrosymmetric 0-D Oxide Nanocrystals with Perovskite and

- Nonperovskite Structures. *Small*, 18(30).
<https://doi.org/10.1002/sml.202200992>
- Davis, K. (2010). Material Review: Alumina (Al₂O₃). *School of Doctoral Studies European Union Journal*, 2.
- de Oliveira, A. S. K., Paulista, A. P. F., De Alencar, A. E. V., & Braga, T. P. (2017). Gelatin Template Synthesis of Aluminum Oxide and/or Silicon Oxide Containing Micro/Mesopores Using the Proteic Sol-Gel Method. *Journal of Nanomaterials*, 2017(1), 1–11. <https://doi.org/10.1155/2017/2504796>
- Devi, N., Deka, C., Maji, T. K., & Kakati, D. K. (2016). Gelatin and Gelatin–Polyelectrolyte Complexes: Drug Delivery. *Encyclopedia of Biomedical Polymers and Polymeric Biomaterials*, 3557–3569. <https://doi.org/10.1081/e-ebpp-120049954>
- Domingues, J. M., Miranda, C. S., Homem, N. C., Felgueiras, H. P., & Antunes, J. C. (2023). Nanoparticle Synthesis and Their Integration into Polymer-Based Fibers for Biomedical Applications. *Biomedicines*, 11(7). <https://doi.org/10.3390/biomedicines11071862>
- Dong, L., Li, Y., Yan, J., & Shu, X. Q. (2014). Efficient Extraction of SiO₂ and Al₂O₃ from Coal Gangue by Means of Acidic Leaching. *Advanced Materials Research*, 8(78), 149–156.
- Efiyanti, L., Trisunaryanti, W., Bahri, S., Ni'mah, Y. L., Wulandari, N. M., & Sumbogo, S. D. (2021). Synthesis of Mesoporous Silica From Beach Sand Using Variation of Cetyl Trimethyl Ammonium Bromide (CTAB). In *3rd KOBICONGRESS, International and National Conferences (KOBICINC 2020)* (pp. 374–381). Atlantis Press.
- Ellingham, S. T. D., Thompson, T. J. U., & Islam, M. (2018). Scanning Electron Microscopy–Energy-Dispersive X-Ray (SEM/EDX): A Rapid Diagnostic Tool to Aid the Identification of Burnt Bone and Contested Cremains. *Journal of Forensic Sciences*, 63(2), 504–510. <https://doi.org/10.1111/1556-4029.13541>
- Englezos, P. (1999). Ionic Equilibrium: Solubility and pH Calculations By J. N. Butler (Harvard University); with a chapter by David R. Cogley. Wiley & Sons, Inc.: New York. 1998. xi + 559 pp. ISBN 0-471-58526-2. *Journal of the American Chemical Society*, 121(15), 3809–3809. <https://doi.org/10.1021/ja9856710>
- Fauziyah, N., Sriatun, S., & Pardoyo, P. (2015). Adsorption of Indigo Carmine Dye using Cetyltrimethylammonium Bromide (CTAB) Surfactant Modified Zeolite. *Jurnal Sains Dan Matematika*, 23(4), 121–126.
- Fitriani, D., & Oktiarni, D. (2015). Pemanfaatan Kulit Pisang Sebagai Adsorben Zat Warna Methylene Blue. *Jurnal Gradien*, 11(2), 1091–1095.
- Frantika, G. Y. (2021). Karakterisasi dan Penentuan Waktu Kontak Optimum

- Arang Aktif Buah Jabon Putih (*Anthocephalus cadamba*) dalam Adsorpsi Ion Merkuri (II). *Repository University of Riau*, 64(7), 1–9.
- Gao, P., Yin, Z., Feng, L., Liu, Y., Du, Z., Duan, Z., & Zhang, L. (2020). Solvothermal synthesis of multiwall carbon nanotubes/BiOI photocatalysts for the efficient degradation of antipyrine under visible light. *Environmental Research*, 185. <https://doi.org/10.1016/j.envres.2020.109468>
- Ginting, F. D. (2008). *Pengujian Alat Pendingin Sistem Adsorpsi Dua Adsorber dengan Menggunakan Metanol 1000ml sebagai Refrigeran*. Universitas Indonesia.
- Gopalakrishnan, D., Balachandar, V., Kumbharkhane, A. C., & Sampathkumar, R. (2019). Dielectric relaxation studies of collagen – surfactant complexes in aqueous buffer solution. *International Journal of Biological Macromolecules*, 138, 215–223. <https://doi.org/10.1016/j.ijbiomac.2019.07.058>
- Hammad, S. F., Abdallah, I. A., Bedair, A., Abdelhameed, R. M., Locatelli, M., & Mansour, F. R. (2024). Metal organic framework-derived carbon nanomaterials and MOF hybrids for chemical sensing. *TrAC - Trends in Analytical Chemistry*, 170. <https://doi.org/10.1016/j.trac.2023.117425>
- Hampel, H., Hardy, J., Blennow, K., Chen, C., Perry, G., Kim, S. H., Villemagne, V. L., Aisen, P., Vendruscolo, M., Iwatsubo, T., Masters, C. L., Cho, M., Lannfelt, L., Cummings, J. L., & Vergallo, A. (2021). The Amyloid- β Pathway in Alzheimer's Disease. *Molecular Psychiatry*, 26(10), 5481–5503. <https://doi.org/10.1038/s41380-021-01249-0>
- Howland, M. A. (2021). Methylene blue. *History of Modern Clinical Toxicology*, 231–241. <https://doi.org/10.1016/B978-0-12-822218-8.00052-1>
- Jamaluddin, Darwis, A., & Massinai, M. A. (2018). X-Ray Fluorescence (XRF) to identify chemical analysis of minerals in Buton island, SE Sulawesi, Indonesia. *IOP Conference Series: Earth and Environmental Science*, 118(1). <https://doi.org/10.1088/1755-1315/118/1/012070>
- Juni, E. W., Arnelli, A., & Sriatun, S. (2012). Pemanfaatan Surfaktan Kationik Hasil Sublasi sebagai Molekul Pengarah pada Pembuatan Material Berpori dari Sekam Padi. *Jurnal Kimia Sains Dan Aplikasi*, 15(1), 24–28. <https://doi.org/10.14710/jksa.15.1.24-28>
- Juzsakova, T., Csavdari, A., Rédey, Á., Fráter, T., Dióssy, L., Popita, G. E., Ráduly, I., Ráduly, L., & Lauer, J. (2014). Study on the alkylaton mechanism of isobutane with 1-butene using environmental friendly catalysts. *Environmental Engineering and Management Journal*, 13(9), 2343–2347. <https://doi.org/10.30638/eemj.2014.261>
- Khapate, S. R., Siddiqui, T. A. J., & Mane, R. S. (2023). Solvothermal technique for the synthesis of metal oxide nanostructures. *Solution Methods for Metal*

- Oxide Nanostructures*, 95–108. <https://doi.org/10.1016/B978-0-12-824353-4.00005-1>
- Kholikov, K., Ilhom, S., Sajjad, M., Smith, M. E., Monroe, J. D., San, O., & Er, A. O. (2018). Improved singlet oxygen generation and antimicrobial activity of sulphur-doped graphene quantum dots coupled with methylene blue for photodynamic therapy applications. *Photodiagnosis and Photodynamic Therapy*, 24, 7–14. <https://doi.org/10.1016/j.pdpdt.2018.08.011>
- Kusumastuti, H., Trisunaryanti, W., Izul Falah, I., & Fajar Marsuki, M. (2018). Synthesis of Mesoporous Silica-Alumina from Lapindo Mud as a Support of Ni and Mo Metals Catalysts for Hydrocracking of Pyrolyzed α - Cellulose. *Rasayan Journal of Chemistry*, 11(2), 522–530. <https://doi.org/10.31788/rjc.2018.1122061>
- Li, Z., Sellaoui, L., Gueddida, S., Dotto, G. L., Ben Lamine, A., Bonilla-Petriciolet, A., & Badawi, M. (2020). Adsorption of methylene blue on silica nanoparticles: Modelling analysis of the adsorption mechanism via a double layer model. *Journal of Molecular Liquids*, 319. <https://doi.org/10.1016/j.molliq.2020.114348>
- Listiyani, N., Dharmawan, A. P., Afifah, F., & Cahyaningrum, S. E. (2019). Pemanfaatan Lumpur Lapindo Sebagai Bahan Baku Pembuatan Amplas. *Indonesian Chemistry and Application Journal*, 3(1), 24. <https://doi.org/10.26740/icaj.v3n1.p24-27>
- Ludlow, J. T., Wilkerson, R. G., & Nappe, T. M. (2023). *Methemoglobinemia*. National Library of Medicine: National Center for Biotechnology Information.
- Manga, J., & Widiyanti, S. E. (2020). Studi Proses Hidrotermal pada Sintesis Material Mesopori dan Karakteristik Stabilitas Adsorpsi. *Seminar Nasional Hasil Penelitian & Pengabdian Kepada Masyarakat (SNP2M)*, 5(1), 98–102.
- Mera, A. C., Rodríguez, C. A., Pizarro-Castillo, L., Meléndrez, M. F., & Valdés, H. (2020). Effect of temperature and reaction time during solvothermal synthesis of BiOCl on microspheres formation: implications in the photocatalytic oxidation of gallic acid under simulated solar radiation. *Journal of Sol-Gel Science and Technology*, 95(1), 146–156. <https://doi.org/10.1007/s10971-020-05312-0>
- Mustopa, R. S., & Risanti, D. D. (2013). Karakterisasi Sifat Fisis Lumpur Panas Sidoarjo dengan Aktivasi Kimia dan Fisika. *Jurnal Teknik Pomits*, 2(2), 256–261.
- Ndlwana, L., Raleie, N., Dimpe, K. M., Ogotu, H. F., Oseghe, E. O., Motsa, M. M., Msagati, T. A. M., & Mamba, B. B. (2021). Sustainable hydrothermal and solvothermal synthesis of advanced carbon materials in multidimensional applications: A review. *Materials*, 14(17). <https://doi.org/10.3390/ma14175094>

- Nisa, Z. (2015). Studi Morfologi Silika Hasil Kalsinasi dengan Metode Sintesis Hidrotermal-Kopresipitasi. *Jurnal Inovasi Fisika Indonesia (IFI)*, 4(1).
- Nuryanto, R., Trisunaryanti, W., & Falah, I. I. (2018). Extraction of gelatin from catfish bone using NaOH and its utilization as a template on mesoporous silica alumina. In *IOP Conference Series: Materials Science and Engineering* (Vol. 349, Issue 1, pp. 12–51). IOP Publishing.
- Nuryanto, R., Trisunaryanti, W., & Triyono. (2020). Variation of gelatin amount as template for Mesoporous silica-alumina synthesis based on Lapindo mud. *Asian J Chem*, 32, 1576–1580.
- Ocanto, F., Linares, C. F., Figueredo, E., & de Navarro, C. U. (2019). Antibacterial property of cancrinite-type zeolites exchanged with silver and copper cations. *Revista Técnica de La Facultad de Ingeniería, Universidad Del Zulia*, 42(3), 143–151.
- Oyedotun, T. D. T. (2018). X-ray fluorescence (XRF) in the investigation of the composition of earth materials: a review and an overview. *Geology, Ecology, and Landscapes*, 2(2), 148–154. <https://doi.org/10.1080/24749508.2018.1452459>
- Paramitha, T., Saputra, T. R., Aliah, A. N., Tarigan, A. V., & Ghozali, M. (2019). Karakterisasi Silika dari Abu Ampas Tebu. *KOVALEN: Jurnal Riset Kimia*, 5(3), 290–298.
- Purwaningsih, H., Ervianto, Y., Pratiwi, V. M., Susanti, D., & Purniawan, A. (2019). Effect of cetyl trimethyl ammonium bromide as template of mesoporous silica mcm-41 from rice husk by sol-gel method. In *IOP Conference Series: Materials Science and Engineering* (Vol. 515, Issue 1, pp. 12–51). IOP Publishing.
- Purwasasmita, B. S., & Roland, P. H. (2008). Sintesa, Karakterisasi Dan Fabrikasi Material Berpori Untuk Aplikasi Pelet Apung (Floating Feed). *Jurnal Bionatura*, 10(1), 13–28.
- Putri, N. A., Nabillah, N., Novianti, U. L., & Huseini, M. R. (2019). Variasi Temperatur Dan Waktu Tinggal Hidrotemalisasi Terhadap Efektifitas Lumpur Lapindo Sebagai Sumber Energi Alternatif. *Seminar Nasional Sains Dan Teknologi*, 1–5. jurnal.umj.ac.id/index.php/semnastek%0AVariasi
- Rahayuningsih, E., Marfitania, T., Marfitania, T., Sapto Pamungkas, M., Pamungkas, M. S., Siti Fatimah, W., & Fatimah, W. S. (2022). Optimization of cotton fabrics dyeing process using various natural dye extracts. *Jurnal Rekayasa Proses*, 16(1), 58. <https://doi.org/10.22146/jrekpros.70397>
- Rahmayanti, A., A'Yuni, Q., Hartati, H., Purkan, P., & Romanza, I. G. (2020). Synthesis and characterization of silica gel from Lapindo mud Sidoarjo. *IOP Conference Series: Earth and Environmental Science*, 456(1). <https://doi.org/10.1088/1755-1315/456/1/012007>

- Rather, J. A., Akhter, N., Ashraf, Q. S., Mir, S. A., Makroo, H. A., Majid, D., Barba, F. J., Khaneghah, A. M., & Dar, B. N. (2022). A comprehensive review on gelatin: Understanding impact of the sources, extraction methods, and modifications on potential packaging applications. *Food Packaging and Shelf Life*, 34. <https://doi.org/10.1016/j.fpsl.2022.100945>
- Riski, O. (2017). *Pengaruh Jenis Prekursor dan Template pada sintesis ZSM-5 Mesopori : Karakterisasi XRD , Porositas dan Keasaman Permukaan*. December, 0–34.
- Ryczkowski, J. (2001). IR Spectroscopy in Catalysis. *Catalysis Today*, 68(4), 263–381. [https://doi.org/10.1016/S0920-5861\(01\)00334-0](https://doi.org/10.1016/S0920-5861(01)00334-0)
- Schenk, J. J., Becklund, L. E., Carey, S. J., & Fabre, P. P. (2023). What is the “modified” CTAB protocol? Characterizing modifications to the CTAB DNA extraction protocol. *Applications in Plant Sciences*, 11(3). <https://doi.org/10.1002/aps3.11517>
- Setiabudi, A., Hardian, R., & Muzakir, A. (2012). Karakterisasi Material: Prinsip dan Aplikasinya dalam Penelitian Kimia. In *UPI Press* (Vol. 1).
- Shafqat, S. R., Bhawani, S. A., Bakhtiar, S., & Ibrahim, M. N. M. (2020). Synthesis of molecularly imprinted polymer for removal of Congo red. *BMC Chemistry*, 14(1). <https://doi.org/10.1186/s13065-020-00680-8>
- Shah, S. K., & Bhattarai, A. (2020). Interfacial and Micellization Behavior of Cetyltrimethylammonium Bromide (CTAB) in Water and Methanol-Water Mixture at 298.15 to 323.15 K. *Journal of Chemistry*, 2020. <https://doi.org/10.1155/2020/4653092>
- Sharifi Pajaie, S. H., Archin, S., & Asadpour, G. (2018). Optimization of Process Parameters by Response Surface Methodology for Methylene Blue Removal Using Cellulose Dusts. *Civil Engineering Journal*, 4(3), 620. <https://doi.org/10.28991/cej-0309121>
- Shipp, D. W., Sinjab, F., & Notingher, I. (2017). Spectroscopy, Raman; (180.5655) Raman microscopy; (300.6230) Spectroscopy, coherent anti-Stokes Raman scattering; (170.3880) Medical and biological imaging. *Review Article Advances in Optics and Photonics*, 1–75. <http://dx.doi.org/10.1364/aop.XX.XXXXXX>
- Soekamto, N. H., Amran, M. B., & Taba, P. (2015). Pengaruh pH dan Waktu Terhadap Kemampuan Adsorpsi Mip_TFMAA-co-Egdma. *Al-Kimia*, 3(2), 91–99.
- Soong, C., Woo, P., & Hoyle, D. (2012). Contamination cleaning of TEM/SEM samples with the ZONE cleaner. *Microscopy Today*, 20(6), 44–48.
- Sudarlin, M. S., & Kalijaga, J. K. U. S. (2012). Prinsip dan Teknik Penggunaan Gas Sorption Analyzer (GSA). *Prinsip Dan Teknik Penggunaan Gas Sorption Analyzer (GSA)*, 1–9. <https://doi.org/10.13140/RG.2.2.13364.07048>

- Sulistiyani, M. (2018). Spektroskopi Fourier Transform Infra Red Metode Reflektansi (Atr-FT-IR) Pada Optimasi Pengukuran Spektrum Vibrasi Vitamin C. *Jurnal TEMAPELA*, 1(2), 39–43. <https://doi.org/10.25077/temapela.1.2.39-43.2018>
- Tan, J., Cheng, H., Wei, L., Gui, X., & Xing, Y. (2020). Investigation of CTAB and DBP esters on low-rank coal flotation selectivity. *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*, 42(10), 1225–1234.
- Trisunaryanti, W., Lisna, P. S., Kartini, I., & Falah, I. I. (2016). Extraction of Gelatin From Bovine Bone and Its Use as Template in Synthesis of Mesoporous Silica. *Journal of Chemistry*, 28(5), 996.
- Trisunaryati, W., Falah, I. I., & Marsuki, M. F. (2017). Synthesis of Mesoporous Silica-Alumina from Lapindo Mud Using Gelatin from Catfish Bone as a Template: Effect of Extracting Temperature on Yield and Characteristic of Gelatin as well as Mesoporous Silica-Alumina. *Conference: International Conference on Environmental Science And Technology*, 15.
- Ulfindrayani, I. F., Ikhlas, N., A'yuni, Q., Fanani, N., Gaol, B. L., & Lestari, D. (2019). Pengaruh Ekstraksi SiO₂ dari Lumpur Lapindo Terhadap Daya Adsorpsinya pada Larutan Metil Orange. *Chemical Engineering Research Articles*, 2(2), 50–55.
- Wang, L., Duan, G., Chen, S. M., & Liu, X. (2015). Particle Size and Dispersity Control by Means of Gelatin for High-Yield Mesoporous Silica Nanospheres. *Industrial and Engineering Chemistry Research*, 54(50), 12580–12586. <https://doi.org/10.1021/acs.iecr.5b02667>
- Wawrzkiwicz, M., Wiśniewska, M., Wołowicz, A., Gun'ko, V. M., & Zarko, V. I. (2017). Mixed silica-alumina oxide as sorbent for dyes and metal ions removal from aqueous solutions and wastewaters. *Microporous and Mesoporous Materials*, 250, 128–147. <https://doi.org/10.1016/j.micromeso.2017.05.016>
- Wei, M. Z., Deng, T. S., Zhang, Q., Cheng, Z., & Li, S. (2021). Seed-Mediated Synthesis of Gold Nanorods at Low Concentrations of CTAB. *ACS Omega*, 6(13), 9188–9195. <https://doi.org/10.1021/acsomega.1c00510>
- Wulandari, N. M., Efiyanti, L., Trisunaryanti, W., Oktaviano, H. S., Bahri, S., Ni'mah, Y. L., & Larasati, S. (2021). Effect of CTAB Ratio to the Characters of Mesoporous Silica Prepared from Rice Husk Ash in the Pyrolysis of α-cellulose. *Bulletin of Chemical Reaction Engineering & Catalysis*, 16(3), 632–640.
- Yakupova, E. I., Bobyleva, L. G., Vikhlyantsev, I. M., & Bobylev, A. G. (2019). Congo Red and amyloids: History and relationship. *Bioscience Reports*, 39(1). <https://doi.org/10.1042/BSR20181415>