

DAFTAR PUSTAKA

- Abbaz, A., Arris, S., Viscusi, G., Ayat, A., Aissaoui, H., and Boumezough, Y., 2023, Adsorption of safranin O dye by alginate/pomegranate peels beads: kinetic, isotherm, and thermodynamic studies, *Gels*, 9, 916.
- Acemioglu, B., Bilir, M, H., and Alma, M, H., 2018, Adsorption of safranin-o dye by peanut shell-based polyurethane type foam, *Int. J. Chem. Technol.*, 2(2), 95-104.
- Afandy, M.A., and Sawali, F.D., 2024, Adsorpsi kromium heksavalen pada larutan aqueous menggunakan arang kayu teraktivasi asam: studi isoterm dan kinetika, *JITK*, 8(1), 1-14.
- Agnestisia, R., 2017, Sintesis dan karakterisasi magnetit (Fe_3O_4) serta aplikasinya sebagai adsorben methylene blue, *JSTK*, 11(2), 61-70.
- Ajaelu, C.J., Oyedele, O., Ikotun, A.A., and Faboro, E.O., 2023, Safranin O dye removal using senna fistula activated biomass: kinetic, equilibrium and thermodynamic studies, *J. Nig. Soc. Phys. Sci.*, 5(1), 1-9.
- Alghouti, M.A., and Da'ana, D.A., 2020, Guidelines for the use and interpretation of adsorption isotherm models: A review, *J. Hazard. Mater.*, 393, 122383.
- Aljamali, N.M., Aldujaili, R.A.B., and Alfatlawi, I.B., 2021, Physical and chemical adsorption and its applications, *IJTCK*, 7(2), 1-8
- Alkheraz, A.M., Elsherif, K.M., and Blayblo, N.A., 2023, Safranin adsorption onto acasia plant derived activated carbon: isotherms, thermodynamics and kinetic studies, *Chem. Int.*, 9(4), 134–145.
- Alovsat, T, Y., 2024, Classification and properties of composites based on matrix material, *WJARR*, 24(02), 2278–2282.
- Amir, N., Tahir, D., and Heryanto, 2023, Synthesis, structural and optical characteristics of Fe_3O_4 /activated carbon photocatalysts to adsorb pesticide waste, *J. Mater. Sci.: Mater. Electron.*, 34, 445.
- Anonim, 2022, *Produk Domestik Bruto Indonesia Triwulan 2018-2022*, Jakarta: Badan Pusat Statistik Republik Indonesia.
- Anonim, 2024, *Distribusi Perdagangan Komoditas Jagung Indonesia 2024*, Jakarta: Badan Pusat Statistik Republik Indonesia.
- Asamu, J.A., Michael, O.F., and Olaoluwa, K.M., 2022, Batch adsorption of safranin dye from aqueous solution using activated groundnut pods (agp), *World J. Adv. Res. Rev.*, 16(2), 403–423.

- Atikah., 2019, Pengaruh waktu dan berat adsorben bentonit pada proses dehidrasi bioetanol, *Sainmatika*, 4(2), 25-31.
- Callister, W. D., and Rethwisch, D.G., 2018, *Materials science and engineering 10th Edition*, Hoboken: Wiley.
- Ceylan, T., Satır, I., and Akme, Se, B., 2025, Synthesis and characterization of rosa canina Fe₃O₄/chitosan nanocomposite and treatment of safranin O dye from wastewater, *Water*, 17(19), 2894.
- Desianna, I., Putri, C.A., Yulianti, I., dan Sujarwata., 2017, Selulosa kulit jagung sebagai adsorben logam cromium (Cr) pada limbah cair batik, *UPEJ*, 6(1), 19-24.
- Dirgayanti, D.S., Koesnarpadi, S., and Hindryawati, N., 2021, Synthesis and characterization of Fe₃O₄-activated carbon and it's application to adsorb methylene blue, *IOP Conf, Ser.: Earth Environ, Sci.*, 623.
- Ebelgi, A.N., Ayawei, N., and Wankasi, D., 2020, Interpretation of adsorption thermodynamics and kinetics, *Open J. Phys. Chem.*, 10, 166-182.
- Edet, U.A., and Ifelebuegu, A.O., 2020, Kinetics, isotherms, and thermodynamic modelling of the adsorption of phosphates from model wastewater using recycled brick waste, *Processes*, 8(6), 1-15.
- Elashmawi, I.S., and Alhusaiki-Alghamdi, H.M., 2024, Fabrication, Characterization, spectroscopic, and magnetic properties of polyaniline/magnetite (PANI/ Fe₃O₄) nanocomposites, *Opt. Quantum Electron.*, 56, 1090.
- Elsherif, K.M., El-Dali, A., Ewlad-Ahmed, A.M., Treban, A.A., Alqadhi, H., and Alkarewi, S., 2022, Kinetics and isotherms studies of safranin adsorption onto two surfaces preared from orange peels, *Mor. J. Chem.*, 10(4), 639-651.
- Fidelis, R.D.J.A, Pires, M., Resende, D.S.D., Lima, G.F.C.L, Paiva, P.R.P.D., and Bezerra, A.C.D.S., 2025, Magnetite: properties and applications – a review, *J. Magn. Magn. Mater.*, 614, 172770.
- Fisli, A., Safitri, R.D., Nurhasni, and Deswita., 2018, Analisis struktur dan porositas komposit Fe₃O₄–karbon aktif dari limbah kertas sebagai adsorben magnetik, *Jusami*, 19(4), 179-187.
- Ghosh, I., Kar, S., Chatterjee, T., Bar, N., and Das, S.K., 2021, Adsorptive removal of safranin-o dye from aqueous medium using coconut coir and its acid-treated forms: adsorption study, Scale-Up Design, MPR And GA-ANN Modeling, *Sustain. Chem. Pharm.*, 19, 100374.

- Hakim, L., and Sedyaji, E., 2020, Synthesis and characterization of Fe_3O_4 -coconut shell activated carbon composites, *JKPK* 5(3), 245-253.
- Hashem, A., Aniagor, C.A., Farag, S., Fikry, M., Aly, A.A., and Amr, A., 2024, Evaluation of the adsorption capacity of surfactant-modified biomass in an aqueous acid blue 193 system, *WMB* (2), 172-183.
- Husain, S., Suryajaya, Haryanti, N.H., Manik, T.N., Sudarningsih, Rodiansono, Hutasoit, S.M., and Riyanto, A., 2019, Potensi nanokomposit Fe_3O_4 @c dari bijih besi sebagai pendeteksi kadar glukosa, *Positron.*, 9(2), 44.
- Ilyas, S., Abdullah, B., and Tahir, D., 2019, X-Ray diffraction analysis of nanocomposite Fe_3O_4 /activated carbon by williamson-hall and size-strain plot methods, *Nano-Struct, Nano-Objects*, 100396.
- Jabar, M.A., Iryani, R., Nadifa, J.A., Widiatningrum, T., 2024, Peralihan dan regenerasi pengetahuan beserta skema kebijakan retensi etnobotani pewarna alami pada masyarakat blok kebon gedang cirebon, *Spizateus*, 106-115.
- Jannah, N.R., and Onggo, D., 2018, Synthesis of Fe_3O_4 nanoparticles for colour removal of printing ink solution, *J. Phys.: Conf. Ser.*, 1245, 012040.
- Kambli, N.D., Samanta, K.K., Basak, S., Chattopadhyay, S.K., Patil, P.G., and Deshmukh, R.R., 2018, Characterization of the corn husk fibre and improvement in its thermal stability by banana pseudostem sap, *Cellulose*, 25(9), 5241-5257.
- Karaagac, O., and Hasirci, H., 2024, Optimum saturation magnetization of superparamagnetic iron oxide nanoparticles for versatile applications, *Acta Phys. Pol. A.*, 146(2), 121-208.
- Khue, T.D., Ngoc, P.K., Viet, D.T., Thanh, T.D., Nguyen, T.H., Vinh, P.V., Nguyen, D.L., Thang, P.D., Duong, A.T., Das, R., and Nguyen, H.T., 2025, Efficient adsorption of organic dyes using Fe_3O_4 /carbon sphere nanocomposites: synthesis and performance evaluation, *J. Sci. Adv. Mater. Device.*, 10, 100880.
- Kielbasa, K., Bayar, S., Varol, E., Sre'Nscek-Nazzal, J., Bosacka, M., Mi'adlicki, P., Serafin, J., Wrobel, R.J., and Michalkiewicz, B., 2022, Carbon dioxide adsorption over activated carbons produced from molasses using H_2SO_4 , H_3PO_4 , HCl , NaOH , and KOH as activating agents, *Molecules.*, 27(21), 7467.
- Lestari, I., Kurniawan, E., Gusti, D.R., and Yusnelti., 2020, Magnetite Fe_3O_4 -activated carbon composite as adsorbent of rhodamine b dye, *IOP Conf, Ser.: Earth Environ, Sci.*, 483, 1-25.

- Maryanti, R., Nandiyanto, A.B., Manullang, T.I., Hufad, A., and Sunardi., 2020, Adsorption of dye on carbon microparticles: physicochemical properties during adsorption, adsorption isotherm and education for student with special needs, *Sains Malays.*, 2977-2988.
- Maylani, S., Sulistyaningsih, T., and Kusumastuti, E., 2016, Preparasi nanopartikel Fe_3O_4 (magnetit) serta aplikasinya sebagai adsorben ion logam kadmium, *Indo. J. Chem. Sci.*, 5(2), 130-135.
- Miri, N, S., and Narimo., 2022, Review : Kajian persamaan isotherm langmuir dan freundlich pada adsorpsi logam berat fe (ii) dengan zeolit dan karbon aktif dari biomassa, *Jurnal Kireka.*, 2(2), 58-71.
- Mishra, S., Yadav, S.S., Rawat, S., Singh, J., and Koduru, J.R., 2019, Corn husk derived magnetized activated carbon for the removal of phenol and para-nitrophenol from aqueous solution : interaction mechanism, insight on adsorbent characteristics, and isothermal, kinetic and thermodynamic properties, *Jenvman*, 246, 362-373.
- Mullerova, S., Baldikova, E., Prochazkova, J., Pospiskova, K., and Safarik, I., 2019, Magnetically modified macroalgae cymopolia barbata biomass as an adsorbent for safranin O removal, *Mater Chem Phys*, 225, 174-180.
- Nurmasari, R., Umaningrum, D., and Yuliyanti, E., 2018, Study of sorption on safranin O by sorbent beads chitosan-tripolyphosphate, *J. Appl. Pharm. Sci.*, 8(5), 104-110.
- Permana, B., Saragi, T., Saputri, M., Safriani, L., Rahayu, I., and Risdiana., 2017, Sintesis nanopartikel magnetik dengan metode kopresipitasi, *JMEI*, 7(2), 17-20.
- Phuong, D.T., and Loc, N.X., 2022, Rice straw biochar and magnetic rice straw biochar for safranin O adsorption from aqueous solution, *Water*, 14, 186.
- Purwaningrum, S.I.K., Windah, U., and Yuliani, F., 2024, Persepsi pengrajin dalam pengelolaan limbah cair batik kabupaten bojonegoro, *JlUBJ*, 24(2), 1368-1375.
- Ray, S., Gusain, R., and Kumar, N., 2020, *Carbon nanomaterial-based adsorbents for water purification*, Amsterdam: Elsevier.
- Ristianingsih, Y., Istiani, A., and Irfandi, F., 2020, Keseimbangan adsorpsi zat warna metilen blue dengan adsorben karbon aktif tongkol jagung terimpregnasi Fe_2O_3 , *JTAI*, 7(1), 47-55.
- Said, M., Rizki, W.T., Asri, W., Desnelli, Rachmat, A., and Hariani, P.L., 2022, $\text{SnO}_2\text{-Fe}_3\text{O}_4$ nanocomposites for the photodegradation of the congo red dye, *Heliyon*, 8(4), 1-8.

- Shaban, M., Abukhadra, M.R., Mohamed, A.S., Shahien, M.G., and Ibrahim, S.S., 2017, Synthesis of mesoporous graphite functionalized by nitrogen for efficient removal of safranin dye utilizing rice husk ash; equilibrium studies and response surface optimization, *J. Inorg. Organomet. Polym.*, 28(3), 279-294.
- Shaltout, W.A., El-Naggar, G.A., Esmail, G., and Hassan, A.F., 2024, Synthesis and characterization of ferric@nanocellulose/nanohydroxyapatite bio-composite based on sea scallop shells and cotton stalks: adsorption of safranin-o dye, *Biomass Conver. Biorefin.*, 14(4), 4759-4776.
- Sholahuddin, A., Yuwita, E.Y., and Faila, R.N., 2023, Karakterisasi morfologi karbon aktif kulit jagung menggunakan sem sebagai bahan pembuatan adsorben, *Inventor*, 4(1), 10-14.
- Sitorus, B., Pranata, D., and Malino, M.B., 2022, Effect of sonication on the properties of composite polypyrrole/microcellulose and its potential as a capacitor, *Jurnal Kim. ris.*, 7(2), 101-111.
- Terra, P.Z., Yusuf, B., and Lianasari, I.Y., 2024, Kajian literatur pemanfaatan adsorben arang aktif limbah organik termodifikasi surfaktan (sls/sds) terhadap ion logam berat, *Pro. Sem. Nas. KPK.*, 169-179.
- Vidovix, T.B., Quesada, H.B., Bergamasco, R., Vieira, M.F., and Vieira, A., 2020, Adsorption of safranin-o dye by copper oxide nanoparticles synthesized from punica granatum leaf extract, *Environ. Technol.*, 43(20), 3047-3063.
- Widodo, S., 2022, Teknologi pembuatan nanopartikel magnetit dengan metode sol-gel untuk lapisan aktif sensor gas, *TSE*, 15(2), 98-105.
- Wulandari, D.W., Koesnarpadi, S., and Hindryawati, N., 2024, Adsorption of methylene blue using composite Fe₃O₄ activated charcoal cassava skin (*Manihot esculenta* C., *JKM*, 21(2), 103-115.
- Yustinah, Hudzaifa, Aprilia, M., and Ab, S., 2019, Kesetimbangan adsorpsi logam berat (pb) dengan adsorben tanah diatomit secara batch, *Konversi*, 9(1), 17-28.
- Zerhouni, A., Attouti, S., Termoul, M., Benallou, M.B., Bestani, B., and Benderdouche, N., 2024, Comparative study of safranin O adsorption onto biomass- derived activated carbon and commercial activated carbon: isotherm modeling, *Stu. Eng. Exact Sci*, 5(2), 1-18.