

DAFTAR PUSTAKA

1. Hassaan, M. A.: Nemr, A. El.: Health and Environmental Impacts of Dyes : Mini Review. *Am. J. Environ. Sci. Eng.* **2017**, 1, 64–67.
2. Chen, S.: Study on the adsorption of dyestuffs with different properties by sludge-rice husk biochar: Adsorption capacity , isotherm , kinetic , thermodynamics and mechanism. *J. Mol. Liq.* **2019**, 285, 62–74.
3. Aljamali, N. M. Review in Azo Compounds and its Biological Activity. *Biochem. Anal. Biochem.* **2015**, 04, 2–5.
4. Stavrinou, A., Aggelopoulos, C. A. & Tsakiroglou, C. D. Exploring the adsorption mechanisms of cationic and anionic dyes onto agricultural waste peels of banana , cucumber and potato : Adsorption kinetics and equilibrium isotherms as a tool. *J. Environ. Chem. Eng.* **2018**, 6, 6958–6970.
5. RI, K. L. H. KEPUTUSAN MENTERI LINGKUNGAN HIDUP KEP-51/MENLH/10/1995. **1995**.
6. Hanafi, M. F., Harun, N. F. C., Sapawe, N. & Raidin, A. Electrobiosynthesis of NiO using rambutan leaves for photodegradation of remazol brilliant blue dye. *Malaysian J. Anal. Sci.* **2020**, 24, 227–235.
7. Mojtabavi, S., Khoshayand, M. R., Fazeli, M. R., Samadi, N. & Faramarzi, M. A. Combination of thermal and biological treatments for bio-removal and detoxification of some recalcitrant synthetic dyes by betaine-induced thermostabilized laccase. *Environ. Technol. Innov.* **2020**, 20, 101046.
8. Wei, Y., Cheng, X., Ding, A. & Xu, J. Magnesium Silicate Polymer as a Coagulant for Reactive Dye Removal from Wastewater: Considering the Intrinsic pH in Magnesium Silicate Polymer and Coagulation Behavior. *ACS Omega.* **2020** doi:10.1021/acsomega.0c03625.
9. Espinoza, I., Sandoval-Pauker, C., Guerrero, L. R., Jentzsch, P. V. & Bisesti, F. M. Fenton process combined with precipitation for the removal of Direct Blue 1 dye: A new approach. *J. Serbian Chem. Soc.* **2020**, 85, 547–558.
10. Muniyasamy, A. et al. Process development for the degradation of textile azo dyes (mono-, di-, poly-) by advanced oxidation process - Ozonation: Experimental & partial derivative modelling approach. *J. Environ. Manage.* **2020**, 265, 110397.
11. Adeniyi, A. G. & Ighalo, J. O. Biosorption of pollutants by plant leaves: An empirical review. *J. Environ. Chem. Eng.* **2019**, 7, 103100.
12. Labaran, A. N., Zango, Z. U., Armaya'u, U. & Garba, Z. N. Rice Husk as Biosorbent for the Adsorption of Methylene Blue. *Sci. World J.* **2019**, 14, 66–70.
13. Singh, N., Mittal, A. K., Cornel, P. & Rother, E. Biosorption of dyes using dead macro fungi : Effect of dye structure , ionic strength and pH. *Bioresour. Technol.* **2006**, 97, 512–521.
14. Lebron, Y. A. R., Moreira, V. R. & Santos, L. V. S. Studies on dye biosorption enhancement by chemically modified *Fucus vesiculosus*, *Spirulina maxima* and *Chlorella pyrenoidosa* algae. *J. Clean. Prod.* **2019**, 240, 118197.

15. Hevira, L., Ighalo, J. O. & Zein, R. Biosorption of indigo carmine from aqueous solution by Terminalia Catappa shell. *J. Environ. Chem. Eng.* **2020**, 8, 104290.
16. Chadir, Z., Furqani, F., Zein, R. & Munaf, E. Utilization of Annona muricata L . seeds as potential adsorbents for the removal of rhodamine B from aqueous solution. *J. Chem. Pharm. Res.* **2015**, 7, 879–888.
17. Sahu, S. et al. Adsorption of methylene blue on chemically modified lychee seed biochar: Dynamic, equilibrium, and thermodynamic study. *J. Mol. Liq.* **2020**, 315, 113743.
18. Chadir, Z., Sagita, D. T., Zein, R. & Munaf, E. Bioremoval of methyl orange dye using durian fruit (Durio zibethinus) Murr seeds as biosorbent. *J. Chem. Pharm. Res.* **2015**, 7, 589–599.
19. Zein, R., Ramadhani, P., Aziz, H. & Suhaili, R. Biosorben cangkang pensi (Corbicula moltkiana) sebagai penyerap zat warna metanil yellow ditinjau dari pH dan model kesetimbangan adsorbs. *J. Litbang Ind.* **2019**, 15–22.
20. Eletta, O. A. A. & Ighalo, J. O. A Review of Fish Scales as a Source of Biosorbent for the Removal of Pollutants from Industrial Effluents. *J. Res. Inf. Civ. Eng.* **2019**, 16, 2479–2510.
21. Rápó, E., Szép, R., Keresztesi, Á., Suciu, M. & Tonk, S. Adsorptive Removal of Cationic and Anionic Dyes from Aqueous Solutions by Using Eggshell Household Waste as Biosorbent. *Acta Chim. Slovakia.* **2018**, 709–717 doi:10.17344/acsi.2018.4401.
22. Ramadhani, P., Chadir, Z., Billian, Z. & Rahmiarti, D. Shrimp shell (Metapenaeus monoceros) waste as a low-cost adsorbent for metanil yellow dye removal in aqueous solution. *Desalin. Water Treat.* **2020**, 197, 413–423.
23. Lombardo, S. & Thielemans, W. *Thermodynamics of adsorption on nanocellulose surfaces. Cellulose.* **2019**.
24. Oladeji, O. S., Adelowo, F. E., Ayodele, D. T. & Odelade, K. A. Phytochemistry and pharmacological activities of Cymbopogon citratus: A review. *Sci. African.* **2019**, 6, e00137.
25. Azmier, M., Adilah, N., Ahmed, B., Adesina, K. & Solomon, O. Sorption studies of methyl red dye removal using lemon grass (Cymbopogon citratus). *Chem. Data Collect.* **2019**, 22, 100249.
26. Putri, K. N. A., Keereerak, A. & Chinpa, W. Novel cellulose-based biosorbent from lemongrass leaf combined with cellulose acetate for adsorption of crystal violet. *Int. J. Biol. Macromol.* **2020**, 156, 762–772.
27. Bota, W. & Martosupono, M. POTENSI SENYAWA MINYAK SEREH WANGI (CITRONELLA OIL) DARI TUMBUHAN Cymbopogon nardus L . SEBAGAI AGEN ANTIBAKTERI. *J. FT UMJ.* **2015**, 1–8.
28. Majewska, E., Kozlowska, M., Gruczynska-Sekowska, E., Kowalska, D. & Tarnowska, K. Lemongrass (Cymbopogon citratus) essential oil: Extraction, composition, bioactivity and uses for food preservation - A review. *Polish J. Food Nutr. Sci.* **2019**, 69, 327–341.
29. Wifek, M., Saeed, A., Rehman, R. & Nisar, S. Lemongrass: a review on its botany, properties, applications and active components. *Ijcbs.* **2016**, 9, 79–84.

30. Haque, A. N. M. A., Remadevi, R. & Naebe, M. Lemongrass (*Cymbopogon*): a review on its structure, properties, applications and recent developments. *Cellulose*. **2018**, *25*, 5455–5477.
31. Koch, R. IARC monographs on the evaluation of carcinogenic risks to humans. *IARC*. **2016**, *108*, 7–419.
32. Derakhshan, Z., Baghapour, M. A., Ranjbar, M. & Faramarzian, M. Adsorption of Methylene Blue Dye from Aqueous Solutions by Modified Pumice Stone: Kinetics and Equilibrium Studies. *Heal. Scope*. **2013**, *2*, 136–144.
33. Asgher, M. Biosorption of Reactive Dyes : A Review. *Water Air Soil Pollut*. 2417–2435, **2012** doi:10.1007/s11270-011-1034-z.
34. Gupta, N. K., Gupta, A., Ramteke, P., Sahoo, H. & Sengupta, A. Biosorption-a green method for the preconcentration of rare earth elements (REEs) from waste solutions: A review. *J. Mol. Liq.* **2019**, *274*, 148–164.
35. Kosmulski, M. pH-dependent surface charging and points of zero charge . IV . Update and new approach. *J. Colloid Interface Sci*. **2009**, *337*, 439–448.
36. Plazinski, W., Rudzinski, W. & Plazinska, A. Theoretical models of sorption kinetics including a surface reaction mechanism: A review. *Adv. Colloid Interface Sci*. **2009**, *152*, 2–13.
37. Ho, Y. S. & McKay, G. A Comparison of chemisorption kinetic models applied to pollutant removal on various sorbents. *Process Saf. Environ. Prot.* **1998**, *76*, 332–340.
38. Saravanan, A. et al. Effective adsorption of Cu(II) ions on sustainable adsorbent derived from mixed biomass (Aspergillus campestris and agro waste): Optimization, isotherm and kinetics study. *Groundw. Sustain. Dev.* **2020**, *11*.
39. Zein, R., Tomi, Z. B., Fauzia, S. & Zilfa, Z. Modification of rice husk silica with bovine serum albumin (BSA) for improvement in adsorption of metanil yellow dye. *J. Iran. Chem. Soc.* **2020**. doi:10.1007/s13738-020-01955-6.
40. Mahadeo, K. & Ejazuddin, D. Adsorption thermodynamics to clean up wastewater ; critical review. *Rev. Environ. Sci. Biotechnol.* **2013**, *25*–44 doi:10.1007/s11157-012-9273-z.
41. Hevira, L. et al. Terminalia catappa shell as low-cost biosorbent for the removal of methylene blue from aqueous solutions. *J. Ind. Eng. Chem.* **2021** doi:10.1016/j.jiec.2021.01.028.
42. Dotto, G. L. et al. Adsorption of Methylene Blue by ultrasonic surface modified chitin. *J. Colloid Interface Sci*. **2015**, *446*, 133–140.
43. Pathak, P. D., Mandavgane, S. A. & Kulkarni, B. D. Characterizing fruit and vegetable peels as bioadsorbents. *Curr. Sci.* **2016**, *110*, 2114–2123.
44. Zou, W., Bai, H., Gao, S. & Li, K. Characterization of modified sawdust, kinetic and equilibrium study about methylene blue adsorption in batch mode. *Korean J. Chem. Eng.* **2013**, *30*, 111–122.
45. Moghazy, R. M. Activated biomass of the green microalga chlamydomonas variabilis as an efficient biosorbent to remove methylene blue dye from aqueous solutions. *Water SA*. **2019**, *45*, 20–28.

46. Melo, B. C. *et al.* Cellulose nanowhiskers improve the methylene blue adsorption capacity of chitosan-g-poly(acrylic acid) hydrogel. *Carbohydr. Polym.* **2018**, *181*, 358–367.
47. Saad, N., Al-Mawla, M., Moubarak, E., Al-Ghoul, M. & El-Rassy, H. Surface-functionalized silica aerogels and alcogels for methylene blue adsorption. *RSC Adv.* **2015**, *5*, 6111–6122.
48. Uddin, T., Rukanuzzaman, Rahman Khan, M. & Islam, A. Jackfruit (*Artocarpus heterophyllus*) leaf powder: An effective adsorbent for removal of methylene blue from aqueous solutions. *Indian J. Chem. Technol.* **2009**, *16*, 142–149.
49. Sen, T. K., Afroze, S. & Ang, H. M. Equilibrium, kinetics and mechanism of removal of methylene blue from aqueous solution by adsorption onto pine cone biomass of *Pinus radiata*. *Water. Air. Soil Pollut.* **2011**, *218*, 499–515.
50. Gould, J. M. Studies on the mechanism of alkaline peroxide delignification of agricultural residues. *Biotechnol. Bioeng.* **1985**, *27*, 225–231.
51. Wong, S. *et al.* Adsorption of anionic dyes on spent tea leaves modified with polyethyleneimine (PEI-STL). *J. Clean. Prod.* **2019**, *206*, 394–406.
52. Jawad, A. H. *et al.* Adsorption of methylene blue onto coconut (*Cocos nucifera*) leaf: optimization, isotherm and kinetic studies. *Desalin. Water Treat.* **2016**, *57*, 8839–8853.
53. Mushtaq, M., Bhatti, H. N., Iqbal, M. & Noreen, S. *Eriobotrya japonica* seed biocomposite efficiency for copper adsorption: Isotherms, kinetics, thermodynamic and desorption studies. *J. Environ. Manage.* **2016**, *176*, 21–33.
54. Sen Gupta, S. & Bhattacharyya, K. G. Kinetics of adsorption of metal ions on inorganic materials: A review. *Adv. Colloid Interface Sci.* **2011**, *162*, 39–58.
55. Yaneva, Z. & Georgieva, N. Insights into Congo Red Adsorption on Agro-Industrial Materials- Spectral, Equilibrium, Kinetic, Thermodynamic, Dynamic and Desorption Studies. A Review. *Int. Rev. Chem. Eng.* **2012**, *4*, 127–146.
56. Rahmi, Ismaturrahmi & Mustafa, I. Methylene blue removal from water using H₂SO₄ crosslinked magnetic chitosan nanocomposite beads. *Microchem. J.* **2019**, *144*, 397–402.
57. Anzeze, D. A., Onyari, J. M., Shiundu, P. M. & Gichuki, J. W. Equilibrium and Kinetics studies for the biosorption of aqueous Cd (II) ions onto *Eichhornia crassipes* biomass. *IOSR J. Appl. Chem.* **2014**, *7*, 29–37.
58. Sharma, S., Hasan, A., Kumar, N. & Pandey, L. M. Removal of methylene blue dye from aqueous solution using immobilized *Agrobacterium fabrum* biomass along with iron oxide nanoparticles as biosorbent. *Environ. Sci. Pollut. Res.* **2018**, *25*, 21605–21615.
59. Beni, A. A. & Esmaeili, A. Biosorption, an efficient method for removing heavy metals from industrial effluents: A Review. *Environ. Technol. Innov.* **2020**, *17*, 100503.
60. Ahmad, M. A., Ahmed, N. B., Adegoke, K. A. & Bello, O. S. Sorption studies of methyl red dye removal using lemon grass (*Cymbopogon citratus*). *Chem. Data Collect.* **2019**, *22*, 100249.

61. Bulgariu, L. et al. The utilization of leaf-based adsorbents for dyes removal : A review. *J. Mol. Liq.* **2019**, 276, 728–747.
62. Ahmad, A., Khan, N., Giri, B. S., Chowdhary, P. & Chaturvedi, P. Removal of methylene blue dye using rice husk, cow dung and sludge biochar: Characterization, application, and kinetic studies. *Bioresour. Technol.* **2020**, 306, 123202.
63. Uddin, M. K. & Nasar, A. Walnut shell powder as a low-cost adsorbent for methylene blue dye: isotherm, kinetics, thermodynamic, desorption and response surface methodology examinations. *Sci. Rep.* **10**, 1–13 (2020).
64. Uddin, M. T., Rahman, M. A., Rukanuzzaman, M. & Islam, M. A. A potential low cost adsorbent for the removal of cationic dyes from aqueous solutions. *Appl. Water Sci.* **2017**, 7, 2831–2842.
65. Uddin, M. T., Islam, M. A., Mahmud, S. & Rukanuzzaman, M. Adsorptive removal of methylene blue by tea waste. *J. Hazard. Mater.* **2009**, 164, 53–60.
66. Kekes, T. & Tzia, C. Adsorption of indigo carmine on functional chitosan and β -cyclodextrin/chitosan beads: Equilibrium, kinetics and mechanism studies. *J. Environ. Manage.* **2020**, 262.
67. Kocaman, S. Removal of methylene blue dye from aqueous solutions by adsorption on levulinic acid-modified natural shells. *Int. J. Phytoremediation.* **2020**, 22, 885–895.
68. Jin, Y., Zeng, C., Lü, Q. F. & Yu, Y. Efficient adsorption of methylene blue and lead ions in aqueous solutions by 5-sulfosalicylic acid modified lignin. *Int. J. Biol. Macromol.* **2019**, 123, 50–58.
69. Annadurai, G., Juang, R. S. & Lee, D. J. Use of cellulose-based wastes for adsorption of dyes from aqueous solutions. *J. Hazard. Mater.* **2002**, 92, 263–274.
70. Bulut, Y. & Aydin, H. A kinetics and thermodynamics study of methylene blue adsorption on wheat shells. *Desalination.* **2006**, 194, 259–267.
71. Banat, F., Al-Asheh, S. & Al-Makhadmeh, L. Evaluation of the use of raw and activated date pits as potential adsorbents for dye containing waters. *Process Biochem.* **2003**, 39, 193–202.