

Bibliography

BIBLIOGRAPHY

- [1] V.P Kudesia, 'Water Pollution', Pragati Prakashan, Meerut, (1992) 407.
- [2] D.S. Malik, Pawan Kumar, Bharti, 'Textile Pollution', Daya Publishing House, New Delhi (2010).
- [3] N.Manivasakam, 'Physico Chemical Examination of Water, Sewage and Industrial Effluents', Pragati Prakashan Publications, Meerut, India (1985).
- [4] The complete technology book on Textile processing with effluent treatment by NIIR board, Asia pacific Business press Inc. Delhi (2004).
- [5] B.Gopal, Conservation of inland water in India: An overview. Verh. Internet. Verein. Hydrobiologia, (1994) 384-267.
- [6] M.Marcucci, G.Nosenzo, G.Capannelli, I.Ciabatti, D.Corrieri, G.Ciardelli, 'Treatment and reuse of textile effluents based on new ultrafiltration and other membrane technologies', *Desalination* 138(1-3)(2001)75-82.
- [7] Vigo & L.Tyrone, 'Textile processing and properties: preparation, dyeing, finishing, and performance', *Elsevier Science Publishers* (1994).
- [8] V.Lav, S.Jyoti, 'Analysis of Physical and Chemical Parameters of Textile Waste Water', *Int. J. Phys. Sci.* 15(2) (2011) 269-276.
- [9] A.A. Vaidge, K.V. Datye, 'Environment pollution during chemical processing of synthetic fibres', *Colourage*,14 (1982) 3-10.
- [10] H. Zoolinger ' Colour chemistry synthesis properties and application of organic dyes and pigments', New York VCH, (1987) 275.
- [11] A.Welham, 'The theory of dyeing (and the secret of life)', *J. Soc. Dyers Colour* 1(16) (2000) 140-143.
- [12] A.Berteza & A.P. Berteza, 'Decolorisation and recycling of textile wastewater (in Romanian), Performantica Ed, ISBN 978-973-730-465-0 (2008) Iasi, Romania.
- [13] P.Cooper, 'Color in dye house effluent', Society of Dyers and Colourists, West Yorkshire BDI 2JB, England. ISBN 0 901956694 (1995)

-
- [14] V.K Garg, R. Gupta, A. B Yadav, A. B. Kumar, 'Dye removal from aqueous solution by adsorption on treated sawdust', *Bioresour. Technol.* 89 (2003) 121-124.
- [15] L. Young, Y 'Lignose-catalysed decolourisation', *Water Res.* 31(1997) 1187-1193.
- [16] I.M. Banat, P.Nigam, D.Singh, R.Marchant, 'Microbial decolorization of textile-dye containing effluents: a review'. *Boiresour. Technol.* 58 (1996) 217-227.
- [17] V.Vadivelan, K.V. Kumar, 'Equilibrium, kinetics, mechanism, and process design for the sorption of methylene blue onto rice husk'. *J. Colloids Interface Sci.* 286 (2005) 90-100.
- [18] S.Ramachandani, M.Das, A.Joshi, S.K. Khanna, 'Effect of oral and parental administration of metanil yellow on some hepatic and intestinal biochemical parameters'. *J. Appl. Toxicol.* 17 (1997) 85-91.
- [19] M.Das, S. Ramchandani, R.K. Upreti, S.K. Khanna, 'Metanil Yellow: a biofunctional inducer of hepatic phase I and phase II xenoblastic-metabolising enzymes', *Food Chem. Toxicol.* 35 (1997) 835-838.
- [20] S.Gupta, M.Sundarrajan, K.V.K. Rao, 'Tumour promotion by metanil yellow and malachite green during rat hepatocarcinogenesis is associated with dye- regulated expression of cell cycle regulatory proteins'. *Teratogen. Carcin. Mut.(Suppl.1)*, (2003) 301-312.
- [21] H.Tiwari, 'Assessment of teratogenicity and embryo toxicity of dye waste- water untreated sludge from sanganer on swiss albino mice when administered during growth period of gestation', *Int. J. Water Resour. Dev.* 2 (2012) 48-53.
- [22] P.C. Jiaping, 'Decontamination of Heavy Metals: Processes, Mechanisms, and Applications' CRC Press, Print ISBN: 978-1-4398-1667-7 (2012)
- [23] R.S. Prakasham. J.S. Merrie, N.Saswathi, S.V. Ramakrishna, R.Sheela, 'Biosorption of Cr(VI) by free and immobilized *Rhizopus arrhizus*' *Environmental Pollution*, 104 (1999) 421-442.
- [24] L.K. Wang, J.P. Chen, Y.T. Hung, N.K. Shamma, 'Heavy metals in the Environment', CRC press, *Boca Raton* (2009).

-
- [25] J.P.Chen, 'Decontamination of heavy metals: Processes, mechanism and Applications'. CRC press, Boca Raton (2012).
- [26] T.A. Khan, V.V.Singh 'Removal of Cadmium(II), Lead(II) and Chromium (VI) ions from aqueous solution using clay', *Toxicol Environ Chem.* 92(8) (2010)1435- 1446.
- [27] K.Mbadcam, J.S. Dongmo, D.D. Ndaghu, 'Kinetic and thermodynamic studies of the adsorption of Nickel(II) ions from aqueous solutions by smectite clay from Sabga- Cameroon', *Int J Curr Res.* 4(5) (2012) 162-167
- [28] C.E. Borba, R.Guirardello, E.A.Silva, M.T. Veit, C.R.G. Tavares, 'Removal of Nickel(II) ions from aqueous solution by biosorption in a fixed bedcolumn: Experimental and theoretical breakthrough curves', *Biochem. Eng. J.* 30 (2006) 184- 191.
- [29] F.Fu, Q.Wang, 'Removal of heavy metals ions from wastewaters: A Review', *J. Environ. Manage.* 92 (2011) 407- 418.
- [30] A.Kapoor, T.Viraraghavan., 'Use of immobilized Bentonite in Removal of Heavy Metals from Wastewater' *J. Environ. Eng.*124 (1998) 1020-1024.
- [31] Indian Standard Drinking Water- Specification (BIS 10500:1991) (2010).
- [32] Pollution Control Acts, Central Pollution Control Board, Ministry of Environment and Forests, New Delhi, India (1998)
- [33] P.I.Norman, R.Seddon, 'Pollution control in the textile industry - the chemical auxiliary manufacturer's role', *J. Soc. Dyers Colour.*107 (1991) 215-218.
- [34] N.Tapas, S.N.Kaul, S.Sunita, 'Wastewater management for small scale dyeing and printing synthetic textile industries' *jpoI*(3) (1998) 5-15
- [35] M.Parmar, L.S.Thakur, 'Heavy metal Cu, Ni and Zn: Toxicity, health hazards and their removal techniques by low cost adsorbents -A short review', *Int.J.Pl. An and Env.Sci.* 3(3) (2013) 143-157.
- [36] K.Ranganathan, K.Karunagaran, Sharma, 'Recycling of wastewaters of textile dyeing industries using advanced treatment technology and cost analysis-Case studies', *Resour. Conserv. Recycl.* 50, (DC 2007) 306–318.

-
- [37] R.Y. Ning, 'Arsenic removal by reverse osmosis', *Desalination* 143 (2002) 237- 241.
- [38] S. Rengaraj, Kyeong-Ho Yeon, Seung-Hyeon Moon, 'Removal of chromium from water and wastewater by ion exchange resins', *J. Hazard. Mater.* 87 (2001) 273- 287.
- [39] N. Kongsricharoern, C. Polprasert, 'Electrochemical precipitation of chromium (Cr^{6+}) from an electroplating wastewater', *Water Sci. Technol.* 31 (1995) 109-117.
- [40] B. Bruggen, C.Vandecasteele, 'Distillation vs membrane filtration: Overview of process evolution in sea water desalination', *Desalination* 143 (2002) 207-218.
- [41] N.Tzanetakis, W.M. Taama, K.Scott, R.J.J. Jachuck, R.S. Slade, J. Varcoe, 'Comparative performance of ion exchange membrane for electro dialysis of nickel and cobalt', *Sep. Purif. Technol.* 30 (2003) 113-127.
- [42] Guohua Chen, 'Electrochemicals technologies in wastewater treatment', *Sep. Purif. Technol.* 38 (2004) 11-41.
- [43] H.Peter, 'Advances in Treating Textile Effluent', Publisher InTech, China, ISBN: 978- 953-307-704-8 (2011).
- [44] H.Sheng, L.Ming, L.Chen, 'Treatment of textile wastewater by chemical methods for reuse', *Water Res.* 31(4) (1997) 868-876.
- [45] L.J.J. Janssen, L.Koene, 'The role of electrochemistry and electrochemical technology in environmental protection', *Open Chem. Eng. J.* 85 (2002) 137-146.
- [46] M.A. Barakat, 'New trends in removing heavy metals from industrial Wastewater', *Arab J Chem.* 4 (2011) 361-377.
- [47] Ira N.Levine, 'Physical Chemistry', 5th edition, Tata McGraw Hill Publishing Company Ltd, New Delhi, India (2001).
- [48] S.Sircar, T.C. Golden, M.B. Rao, 'Activated carbon for gas separation and storage', *Int J Sci Nat* 34(1) (1996) 1-12.
- [49] R.C. Bansal, J.B. Donnet, H.F. Stoeckli, 'Active carbon', Marcel Dekker, New York (1988).

-
- [50] Cooney, 'Adsorption design for wastewater treatment', CRC press, BocaRaton (DO 1999).
- [51] M.Smisek, Cerny, 'Active Carbon Manufacture, Properties and Applications', Elsevier Pub., Comp., New York (1970).
- [52] C.D. Lozano, M.A. Lillo-Rodenas, D.Cazorla-Amoros, A.Linares- Solano, 'Preparation of Activated Carbons from Spanish Anthracite, I. Activation by KOH', *Carbon* 39 (5) (2001), 741-749.
- [53] S.Balci, T.Dogu, H.Yucel, 'Characterization of activated carbon produced from almond shell and hazelnut shell', *J. Chem. Technol. Biotechnol.* 60(4) (1994) 419- 426.
- [54] N.Geo paul, 'Some Methods for the Utilisation of Waste from Fibre Crops and Fibre Wastes from Other Crops', *Agricultural Wastes* 2 (1980) 313-318.
- [55] Satish Patil, Sameer Renukdas, Naseema Patil , 'Removal of methylene blue, a basic dye from aqueous solution by ad-sorption using teak tree(*Tectona grandis*) bark powder', *Int. J. of Env. Sci.* 1(5), (2011)711-725.
- [56] Jia Li, Dickon H.L. Ng, Peng Song, Chao Kong, Yi Song, Ping Yang, 'Preparation and characterization of high-surface area activated carbon fibers from silkworm cocoon waste for congo red adsorption', *biomass and bio energy* 75 (2015) 189-200.
- [57] A.Umar Isah, Giwa Abdulraheem, Salisu Bala, Sallahudeen Muhammad, Mustapha Abdullahi, 'Kinetics, equilibrium and thermodynamics studies of C.I. Reactive Blue 19 dye adsorption on coconut shell based activated carbon', *Int. Biodeterior. Biodegradation.*102 (2015) 265-273.
- [58] Yun Chen, Shang-Ru Zhai, Na Liu, Yu Song, Qing-Da An, Xiao-Wei Song 'Dye removal of activated carbons prepared from NaOH-pretreated rice husks by low- temperature solution-processed carbonization and H₃PO₄ activation', *Bioresour. Technol.*144 (2013) 401-409.
- [59] P.K. Malik, 'Dye removal from wastewater using activated carbon developed from sawdust: adsorption equilibrium and kinetics', *J. Hazard. Mater.* B113 (2004) 81- 88.

-
- [60] Yuan Gao, Shiping Xu, Qinyan Yue, Yuwei Wu, Baoyu Gao, 'Chemical preparation of crab shell-based activated carbon with superior adsorption performance for dye removal from wastewater', *J. Taiwan Inst. Chem. Eng.* 61 (2016) 327–335.
- [61] Mohammed Nabil Mahamad, Muhammad Abbas Ahmad Zaini, Zainul Akmar Zakaria, 'Preparation and characterization of activated carbon from Pineapple waste biomass for dye removal', *Int. Biodeterior. Biodegradation* 102 (2015) 274 -280.
- [62] Azza Khaled, Ahmed El Nemr, Amany El-Sikaily, Ola Abdelwahab, 'Removal of Direct N Blue-106 from artificial textile dye effluent using activated carbon from Orange peel: Adsorption isotherm and kinetic studies', *J. Hazard. Mater.* 165 (2009) 100-110.
- [63] Jagdish Singh, Gagandeep Kaur, Freundlich, 'Langmuir adsorption isotherms and kinetics for the removal of malachite green from aqueous solutions using agricultural waste rice straw', *Int. J. of Env. Sci.* 4 (3) (2013) 250-258
- [64] C.Theivarasu, S.Chandra, 'Performance of Elephant (*Eliphas maximus*) Dung Activated Carbon for the Removal of Crystal Violet from Aqueous Solution', *Int. J. Chemtech Res.* 6(2) (2014) 1362-1376.
- [65] M. El Haddad, R.Mamouni, R.Slimani, N.Saffaj, M.Ridaoui, S.ElAntri, S. Lazar, 'Adsorptive removal of Reactive Yellow 84 dye from aqueous solutions onto animal bone meal', *J. Mater. Environ. Sci.* 3 (6) (2012) 1019-1026.
- [66] U.V. Ladhe, S.K. Wankhede, V.T. Patil and P.R. Patil, 'Adsorption of Erichrome Black T from aqueous solutions on activated carbon prepared from Mosambi Peel', *J. Appl. Sci. Environ. Sanitation.* 6(2) (2011) 149 - 154.
- [67] P.Sivakumar, P.N. Palanisamy, 'Adsorption studies of Basic Red 29 by a nonconventional activated carbon prepared from *Euphorbia Antiquorum* L', *Int J Chemtech Res.* 1(3) (2009) 502-510.

-
- [68] Sevilay Cengiz, Fatmagul Tanrikulu, Sevil Aksu, 'An alternative source of adsorbent for the removal of dyes from textile waters: *Posidonia oceanica* (L.)', *Chem. Eng. J.* 189–190 (2012) 32–40.
- [69] K.Kadirvelu, K.Thamaraiselvi, C.Namasivayam, 'Removal of heavy metals from industrial wastewaters by adsorption onto activated carbon prepared from an agricultural solid waste', *Bioresour. Technol.* 76(1) (2001) 63-65.
- [70] Hameed BH 'Equilibrium and kinetic studies of Methyl violet sorption by agricultural waste', *J. Hazard. Mater.* 151(2008)316–322.
- [71] V.Dulman, S.M. Cucu-Man, 'Sorption of some textile dyes by beech wood sawdust', *J. Hazard. Mater.* 162 (2009)1457–1464.
- [72] N.Thinakaran, P.Panneerselvam, P.Baskaralingam, M.Pulikesi, S.Sivanesan, 'Removal of acid violet 17 from aqueous solutions by adsorption onto activated carbon prepared from sunflower seed hull', *J. Hazard. Mater.* 154 (2008) 204–212.
- [73] B.H. Hameed, M.I. El-Khaiary, 'Removal of basic dye from aqueous medium using a novel agricultural waste material: pumpkin seed hull', *J. Hazard. Mater.* 155 (2008) 601–609.
- [74] Tasrina Rabia Choudhury, Khalil Miah Pathan, Md. Nurul Amin, M.Ali1, S.B Quraishi1, A.Mustafa, 'Adsorption of Cr (III) from aqueous solution by groundnut shell', *Int. J. Water Res. Environ. Eng.* 1(6). (2012) 144-150
- [75] K.K. Wong, C.K. Lee, K.S. Low, M.J. Haron, 'Removal of Cu and Pb by tartaric acid modified rice husk from aqueous solution', *Chemosphere* 50 (2003) 23–28.
- [76] G.O. El-Sayed, H.A. Dessouki, S.S. Ibrahim, 'Biosorption Of Ni (II) And Cd (II) Ions from Aqueous Solutions onto Rice Straw', *CSJ* 9 (2010) 1-11.
- [77] N.Ahalya, R.D. Kanamadiand, T.V. Ramachandra, 'Cr (VI) and Fe (III) removal using *Cajanuscajan* husk', *J. Environ .Bio* 28(4) (2007) 765-769.
- [78] H.Y. Duan, F.Chen, Ai XP, He ZK, 'The interaction between propranolol and gold nanoparticles and its analytical application'. *Chin Chem Lett* 16 (2005) 947–950.

- [79] R.D. Ambashta, M.Sillanpaa, 'Water purification using magnetic assistance: a Review', *J. Hazard. Mater.* 180(2010) 38–49.
- [80] C.A. Luiz, Oliveiraa, Rachel, V.R.A. Riosa, Jose´ D. Fabrisa, V. Gargc, Karim Sapagb, Rochel M. Lagoa, 'Activated carbon/ iron oxide magnetic composites for the adsorption of contaminants in water', *Carbon* 40 (2002) 2177–2183.
- [81] Lunhong Ai, Haiyan Huang, Zhonglan Chen, Xing Wei, J. Jiang, 'Activated carbon/CoFe₂O₄ composites: Facile synthesis, magnetic performance and their potential application for the removal of malachite green from water', *Open Chem.Eng. J.*156 (2010) 243–249.
- [82] V.Ranjithkumar, A.Nizarul Hazeen, M.Thamilselvan, S.Vairam, 'Magnetic Activated Carbon-Fe₃O₄ Nanocomposites - Synthesis and Application in the Removal of Acid Yellow Dye 17 from Water', *J. Nanosci. Nanotechnol* 14, (2014)1–11.
- [83] Na Yang, Shenmin Zhu, Di Zhang, Shi Xu, 'Synthesis and properties of magnetic Fe₃O₄-activated carbon nanocomposite particles for dye removal', *Mater. Lett.* 62 (2008) 645-647.
- [84] Lixia Wang, Jianchen Li, Yingqi Wang, Lijun Zhao, Qing Jiang, 'Adsorption capability for Congo red on nanocrystalline MFe₂O₄ (M = Mn, Fe, Co, Ni) spinel ferrites', *Open Chem. Eng. J.* 181– 182 (2012) 72– 79.
- [85] V.Ranjithkumar, S.Sangeetha, S.Vairam, 'Synthesis of magnetic activated carbon/ -Fe₂O₃ nanocomposite and its application in the removal of acid yellow 17 dye from water', *J.Hazard. Mater.* 273 (2014) 127–135.
- [86] N.Kamila Banu,T.Santhi, 'Development of tri-metal oxide nano composite adsorbents for the removal of reactive yellow-15 from aqueous solution', *Int J Sci Nat* 4(3) (2013) 381-389.
- [87] Jing Hu, Irene M.C. Lo, Guohua Chen, 'Comparative study of various magnetic nanoparticles for Cr(VI) removal', *Sep. Purif. Technol.* 56 (2007) 249–256.

- [88] K.M. Joshi, V.S. Shrivastava, 'Removal of hazardous textile dyes from aqueous solution by using commercial activated carbon with TiO₂ and ZnO as photocatalyst', *Int J Chemtech Res.* 2(1) (2012) 427- 435.
- [89] Puja Rai, Ravindra Kumar Gautam, Sushmita Banerjee, Vandani Rawat, M.C. Chattopadhyaya, 'Synthesis and characterization of a novel SnFe₂O₄@activated carbon magnetic nanocomposite and its effectiveness in the removal of crystal violet from aqueous solution', *J. Environ. Chem. Eng.* 3 (2015) 2281–2291.
- [90] Jurex Gallo, Josephine Borja, Susan Gallardo, Cris Salim, Pailin Ngaotrakanwivat, Hirofumi Hinode, 'optimization for photocatalytic colour removal of turquoise blue dye C.I 199 in immobilized AC/TiO₂ and UV - system using response surface methodology', *Alexandria Eng.J* 1 (2012) 14-27
- [91] Jatinder Kumar, Ajay Bansal, 'Dual Effect of Photocatalysis and Adsorption in Degradation of Azorubine Dye Using Nanosized TiO₂ and Activated Carbon Immobilized with Different Techniques', *Int J Chemtech Res* 2(3) (2010) 1537- 1543.
- [92] Jolly Pal and Manas Kanti Deb, 'Efficient adsorption of Congo red dye from aqueous solution using green synthesized coinage nanoparticles coated activated carbon beads', *Appl. Nanosci.* 4 (2014) 967–978.
- [93] Coffey Linda, Margo Hale, and Ann "Goats: Sustainable Production Overview. Attra publications (2004)
- [94] M.Kumar, R.Tamilarasan, 'Modeling of experimental data for the adsorption of methyl orange from aqueous solution using a low cost activated carbon prepared from *Prosopis juliflora*', *Polish J.of Che.Tech.*, 15 (2) (2013) 9-39.
- [95] Hirst, K. Kris. "The History of the Domestication of Goats". About.com. Accessed August, 18 (2008).
- [96] Methods of sampling and tests for activated carbon used for decolourising vegetable oils and sugar solutions, ISI, Indian standard Institute (1977).
- [97] S.A. Wilde, G.K. Voigt, JJ Iyer, 'Soil and plant analysis for tree culture' Ed: G.Chesters, 4th edition, Oxford and IBH Publishing Co., New Delhi, India (1972).

-
- [98] D.G. Kinniburg, J.K. Syeres, M.L. Jackson, 'Specific adsorption of trace amounts of calcium and strontium by hydrous oxides of iron and aluminium', *Soil Sci.Soc. Am. Proc.* 39 (1975) 464-490.
- [99] Tarun Kumar Naiya, Ashim Kumar Bhattacharya, Sailendranath Mandal, Sudip Kumar Das, 'The sorption of lead(II) ions on rice husk ash', *J. Hazard. Mater.* 163 (2009) 1254-1264.
- [100] H.Yamaguchi, Y.Iura, M.Higuchi, I.Sakata, 'Adsorption of heavy metal ions on micro spherical tannin resins', *Mokuzai Gakkaishi*, 37(1991) 815 – 820.
- [101] Cooney, 'Adsorption design for waste water treatment', Lavis publishers, Bola Raton, USA (D 1998).
- [102] Cooney, 'Adsorption design for wastewater treatment', CRC press, Boca Raton(DO 1999).
- [103] H.P. Boehm, 'Some aspects of the surface chemistry of carbon blacks and other Carbons', *Carbon*. 32 (1994) 759-769.
- [104] M. Zabihi et al., 'Removal of mercury from water by carbonaceous sorbents derived from walnut shell', *J. Hazard. Mater.*167, (2009) 230-236.
- [105] S.Sugashini, K.M. Meera Sheriffa Begum, 'Column Adsorption Studies from the Removal of Cr(VI) Ions by Ethylamine Modified Chitosan Carbonized Rice Husk Composite Beads with Modelling and Optimization', *J.of Chem.* 2013 (2012) 1-11
- [106] S.H. Hasan, K.K. Singh, O.Prakash, M.Talat, Y.S. Ho, 'Removal of Cr(VI) from aqueous solutions using agricultural waste maize bran', *J. Hazard. Mater.*152 (2008) 356-365.
- [107] D.Ozdes, C.Duran,H.B. Senturk, 'Adsorptive removal of Cd(II) and Pb(II) ions from aqueous solutions by using Turkish illitic clay', *J. Environ. Manage.* 92 (2011) 3082-3090.
- [108] Ahmet Sari, Mustafa Tuzen, 'Biosorption of Pb(II) and Cd(II) from aqueous solution using green alga (*Ulva lactuca*) biomass', *J. Hazard. Mater.* 152 (2008) 302-308.

- [109] Langmuir I. 'The adsorption of gases on plane surfaces of glass, mica and platinum'. *J Am Chem Soc*, 40 (1918)1361–1403.
- [110] K.R. Hall, L.C. Eagleton, A.Acrivos, T.Vermeulen, T. 'Pore and solid Diffusion kinetics in fixed - bed adsorption under constant-pattern conditions'. *Ind. Eng. Chem. Fundam.* 5(2) (1966) 212-223.
- [111] S.Arfaoui, N.F. Srasra, E. Srasra, 'Modelling of the adsorption of the Chromium ion by modified clays'. *Desalination* 222 (2008) 474-481.
- [112] E.Demirbas, M.Kobyas, A.E.S. Konukman, 'Error analysis of equilibrium studies for the almond shell activated carbon adsorption of Cr(VI) from aqueous solutions', *J. Hazard. Mater.* 154 (2008) 787-794.
- [113] Manjeet Bansal, Umesh Garg, Diwan Singh, VK Garg, 'Removal of Cr(VI) from aqueous solutions using pre-consumer processing agricultural waste : A case study of rice husk', *J. Hazard. Mater.*162 (2009) 312-320.
- [114] Ozgur Dogan Uluozlu, Ahmet Sari, Mustafa Tuzen, Mustafa Soylak, 'Biosorption of Pb(II) and Cr(III) from aqueous solution by lichen (*Parmelia tiliaceae*)' *biomass, Bioresour. Technol.* 99 (2008) 2972-2980.
- [115] Ting Fan, Yunguo Liu, Baoying Feng, Guangming Zeng, Chunping Yang, Ming Zhou, Haizhou Zhou, Zhenfeng Tan, Xin Wang, 'Biosorption of cadmium (II), zinc(II)and lead(II) by *Penicillium simplicissimum*: Isotherms, kinetics and thermodynamics', *J. Hazard. Mater.* 160 (2008) 655-661.
- [116] N.Bektas, S.Aydin, M.S. Oncel, 'The adsorption of Arsenic ions using beidellite, zeolite, and sepiolite clays: A study of kinetic, equilibrium and thermodynamics'. *Sep. Sci. Technol.* 46 (2011) 1005-1016.
- [117] Y.H. Magdy, H. Altaher, 'Kinetic analysis of the adsorption of dyes from high strength wastewater on cement kiln dust', *J. Environ. Chem. Eng.* (6)1 (2018) 834- 841.

- [118] L.U. Min, Y.M. Zhang, X.H. Guan, X.H. Xu, T.T. Gao, 'Thermodynamics and kinetics of adsorption for heavy metal ions from aqueous solutions onto surface amino-bacterial cellulose', *Trans. Nonferrous Met. Soc. China.* 24 (2014) 1912–1917.
- [119] J. Raffiea Baseri, P. N. Palanisamy and P. Sivakumar, Preparation and characterization of activated carbon from *Thevetia peruviana* for the removal of dyes from textile waste water *Advances in Appl.Sci. Res.* 3(1) (2012) 377-383.
- [120] H.Marsh, F.Rodriguez-Reinoso, 'Activated Carbon', Elsevier Science & Technology Books. (2006) 401- 462.
- [121] S.R. Sugunadevi, M.Sathishkumar, K.Shanthi, K.Kadirvelu, S.Pattabhi, 'Removal of Direct T-blue R from aqueous solution onto carbonised sugarcane baggase waste'. *Indian J. Environ. Protection.* 22 (2002) 500-505.
- [122] Lyklema, J 'Colloid Interface' Sci.Academic Press, New York (1995).
- [123] R.Malik, D.S. Ramkete & S.R. Wate, 'Physico-chemical and surface characterization of adsorbent prepared from groundnut shell by $ZnCl_2$ activation and its ability to absorb colour', *Indian J. Chem.* 13 (2006) 319-328.
- [124] W.Shaobin, Z.H. Zhu, 'Effects of acidic treatment of activated carbons on dye Adsorption', *Dyes and Pigments.* 75(2) (2007) 306-314.
- [125] D.K.V. Ramana, A.V.R. Seshaiyah Reddy, 'Biosorp-tion of Ni(II) from aqueous phase by *Moringa oleifera* bark, a low cost biosorbent'. *Desalination* 268 (2011) 150-157.
- [126] Gulsum Karacetin, Sezen Sivrikaya, Mustafa Imamo glu,' Adsorption of methylene blue from aqueous solutions by activated carbon prepared from hazelnut husk using zinc chloride', *J. Anal. Appl. Pyrolysis.*110 (2014) 270–276.
- [127] Umran Tezcan Un, Funda Ates, Nihal Erginel, Oznur Ozcan, Emre Oduncu, 'Adsorption of Disperse Orange 30 dye onto activated carbon derived from Holm Oak (*Quercus Ilex*) acorns: A 3k factorial design and analysis', *J. Environ. Manage.*155 (2015) 89-96.

- [128] Yujiao Kan, Qinyan Yue, Jiaojiao Kong, Baoyu Gao, Qian Li, 'The application of activated carbon produced from waste printed circuit boards (PCBs) by H₃PO₄ and steam activation for the removal of malachite green', *Chem. Eng. J.* 260 (2015) 541–549.
- [129] Arumugam Geetha & Nachimuthu Palanisami, 'Studies on adsorptive removal of Direct Green6 using a non-conventional activated carbon and polypyrrole Composite', *Desalin. Water Treat.* (2015) 1-10.
- [130] Nasiru Abdus and Magaji Buhari, 'Adsorption of Alizarin and Fluorescein Dyes on Adsorbent prepared from Mango Seed', *Pac. j. sci. Technol.* 15(1) (2014) 232-244.
- [131] Roozbeh Hoseinzadeh Hesas, Arash Arami- Niya, Wan Mohd Ashri Wan Daud, 'Preparation and characterisation of Activated carbon from Apple waste by microwave assisted phosphoric acid activation: Application in Methylene blue adsorption', *BioResources.* 8(2) (2013) 2950-2966.
- [132] P.S. Kumar, S.Ramalingam, S.D. Kirupha, A. Murugesan, T. Vidyadevi, S. Sivanesan, 'Adsorption behaviour of nickel(II) onto cashew nut shell: equilibrium, thermodynamic, mechanism and process design'. *Chem Eng J.* 167 (2011) 122-131.
- [133] F.A. Lopez, T.A. Centeno, I.Garcia-Diaz, F.J. Alguacil, 'Texture and fuel characteristics of the char produced by the pyrolysis of waste wood and the properties of activated carbons prepared from them'. *J. Anal. Appl. Pyrolysis.* 10 (2013) 551–558.
- [134] Azza Khaled, Ahmed El Nemr, Amany El-Sikaily, Ola Abdelwahab, 'Removal of Direct N Blue-106 from artificial textile dye effluent using activated carbon from orange peel: Adsorption isotherm and kinetic studies', *J. Hazard. Mater.* 165 (2009) 100–110.
- [135] M. Otero, F. Rozada, L.F. Calvo, A.I. Garcia, A. Morán, 'Elimination of organic water pollutants using adsorbents obtained from sewage sludge', *Dyes Pigm.* 57 (2003) 55–65.

- [136] Z. Aksu, A.B. Akın, Comparison of Remazol Black B, 'Biosorptive properties of live and treated activated sludge', *Chem. Eng. J.* 165 (2010) 184–193.
- [137] F.Taghizadeh, M. Ghaedi, K. Kamali, E. Sharifpour, R. Sahraie, M.K. Purkait, 'Comparison of nickel and/or zinc selenide nanoparticle loaded on activated carbon as efficient adsorbents for kinetic and equilibrium study of removal of Arsenazo (III) dye', *Powder Technol.* 245 (2013) 217–226.
- [138] N.K. Amin, 'Removal of reactive dye from aqueous solutions by adsorption onto activated carbons prepared from sugarcane bagasse pith', *Desalination* 223 (2008) 152–161.
- [139] Jordana Georgin, Guilherme Luiz Dotto, Marcio Antonio Mazutti, Edson Luiz Foletto, 'Preparation of activated carbon from peanut shell by conventional pyrolysis and microwave irradiation- pyrolysis to remove organic dyes from aqueous solutions', *J. Environ. Chem. Eng.* 4 (2016) 266–275
- [140] C.T. Weber, G.C. Collazzo, M.A. Mazutti, E.L. Foletto, G.L. Dotto, 'Removal of hazardous pharmaceutical dyes by adsorption onto papaya seeds', *Water Sci. Technol.* 70 (2014) 102–107.
- [141] P.Saha, S.Chowdhury, S.Gupta, KumaI, 'Insight into adsorption equilibrium, kinetics and thermodynamics of malachite green onto clayey soil of Indian origin'. *J. Environ. Chem Eng.* 165 (2012) 874–882.
- [142] C.Raji, T.S. Anirudhan, 'Removal Hg(II) from aqueous solution by sorption on polymerized sawdust', *Ind. J. Chem. Technol.* 3 (1996) 49-54.
- [143] T.S. Anirudhan, L. Divya, M. Ramachandran, 'Mercury (II) Removal from aqueous solutions and wastewaters using a novel cation exchanger derived from coconut coir pith and its recovery', *J. Hazard. Mater.* 157 (2008) 620-627.
- [144] I.Langmuir. 'The adsorption of gases on plane surfaces of glass, mica and Platinum'. *J Am Chem Soc.* 40 (1918)1361–1403.
- [145] Behzad Heibati, Susana Rodriguez-Couto, Mohammad A. Al-Ghouti, Mohammad Asif, Inderjeet Tyagi, Shilpi Agarwal, Vinod Kumar Gupta, 'Kinetics and thermodynamics of enhanced adsorption of the dye AR 18 using activated carbons prepared from walnut and poplar woods', *J Mol. Liq.* 208 (2015) 99 –105.

- [146] Marwa S. Embaby, Saber D. Elwany, Widiastuti Setyaningsih, Mohamed R.Saber, 'The adsorptive Properties of UiO-66 towards Organic Dyes: A Record, Adsorption Capacity for the Anionic Dye Alizarin Red S'. *Chin. J. Chem. Eng* 26(4) (2018) 731-739.
- [147] Bulut Yasemin, Tez Zeki, 'Removal of heavy metals from aqueous solution by sawdust adsorption', *J. Environ. Sci.* 19 (2007) 160-166.
- [148] M.F. Yardim, T. Budinova, E. Ekinici, N. Petrov, M. Razvigorova, V. Minkoba, 'Removal of Mercury(II) from aqueous solution by activated carbon obtained from Furfural', *Chemosphere.* 52 (2003) 835-841.
- [149] Ali Gundogdu, Duygu Ozdes, Celal Duran, Volkan Numan Bulut, Mustafa Soylak, Hasan Basri Senturk, Biosorption of Pb(II) ions from aqueous solution by pine bark (*Pinus brutia Ten.*), *Chem. Eng. J.* 153 (2009) 62-69.
- [150] Y.S. Ho, G. McKay, 'Kinetic models for the sorption of dye from aqueous solution by Wood', *Journal of Environmental. Science. Health Part B: Process Saf. Environ. Prot.* 76 (1998)183–191.
- [151] Ru-Ling T Seng, Feng-Chin Wu, Ruey-Shin Juang, 'Liquid-phase adsorption of dyes and phenols using pinewood-based activated carbons', *Carbon.* 41 (2003) 487-495.
- [152] O.S. Amuda, F.E. Adelowo, M.O. Ologunde, 'Kinetics and equilibrium studies of adsorption of chromium(VI) ion from industrial wastewater using *Chrysophyllum albidum* (Sapotaceae) seed shells', *Colloids and Surfaces B: Biointerfaces.* 68 (2009) 184-192.
- [153] T.S. Anirudhan, L. Divya, M. Ramachandran, 'Mercury(II) Removal from aqueous solutions and wastewaters using a novel cation exchanger derived from coconut coir pith and its recovery', *J. Hazard. Mater.* 157 (2008) 620-627.
- [154] VK Gupta, A Rastogi, 'Biosorption of lead from aqueous solutions by green algae *Spirogyra* species: Kinetics and equilibrium studies', *J. Hazard. Mater.*152 (2008) 407- 414.

-
- [155] Ozgul Gercel, H. Ferdi Gercel, 'Adsorption of lead(II) ions from aqueous solutions by activated carbon prepared from biomass plant material of *Euphorbia rigida*', *Chem. Eng. J.* 132 (2007) 289-297.
- [156] P.K. Malik, 'Dye removal from wastewater using activated carbon developed from sawdust: adsorption and kinetics', *J. Hazard. Mater.*, B 113 (2004) 81-88.
- [157] A.A. Ahmed, B.H. Hameed, N. Aziz, 'Adsorption of direct dye on palm ash: kinetic and equilibrium modeling', *J. Hazard. Mater.* 141 (2007) 70-76.
- [158] S Arivoli, M. Hema, S Parthasarathy and N Manju, 'Adsorption dynamics of methylene blue by acid activated carbon', *J. Chem. Pharm. Res.*, 2(5) (2010) 626-641.
- [159] Bhatnagar, A., Minocha, A.K., Sillanpaa, M. 'Adsorptive removal of cobalt from aqueous solution by utilizing lemon peel as biosorbent', *Biochem. Eng. J.* 48 (2010) 181-186.
- [160] Sagnik Chakraborty., Shamik Chowdhury., Papita Das Saha. 'Adsorption of Crystal Violet from aqueous solution onto NaOH-modified rice husk', *Carbohydr Polym.* 86 (2011) 1533-1541.
- [161] Vadivel Sivakumar, Manickam Asaithambi and Ponnusamy Sivakumar, 'Physico-chemical and adsorption studies of activated carbon from Agricultural wastes', *Advances in Appl.Sci.Res.*, 3(1) (2012) 219-226.
- [162] Atul Kumar, Pratibha Chaudhary, Poonam Verma, 'Adsorption of Reactive Red 194 Dye from Textile Effluent by Using Class F Fly Ash', *Sch. J. App. Med. Sci.* 1(2) (2013) 111-116.
- [163] Mustafa T. Yagub, Tushar Kanti Sen, Sharmeen Afroze, H.M. Ang, 'Dye and its removal from aqueous solution by adsorption: A review', *Advances in Colloid and Interf. Sci.* 209 (2014) 172 -184.
- [164] Daryosuh Zareyee, Habib Tayebi and Seyed Hossein Javadi, 'Preparation of polyaniline/ activated carbon composite for removal of reactive red 198 from aqueous solution', *Iran J. Org. Chem.* 4(1) (2012) 799-802.

- [165] V.K. Garg, R.Gupta, A.B. Yadav, R. Kumar, 'Dye removal from aqueous solution by adsorption on treated sawdust'. *Bioresour Technol*, 89 (2003) 121–124.
- [166] N.K. Amin, 'Removal of reactive dye from aqueous solutions by adsorption onto activated carbons prepared from sugarcane bagasse pith'. *Desalination*, 223(1-3) (2008) 152-161.
- [167] J.Raffica Baseri, P.N Palanisamy and P.Sivakumar,' Adsorption of reactive dye by a novel activated carbon prepared from Thevetia peruviana', *Int.J.Chem. Res.* 3(2) (2012) 36 - 41.
- [168] R.Apiratikul, T.F.Marhaba, S.Wattanachira, P.Pavasant, 'Biosorption of binary mixtures of heavy metals by green macro alga *Caulerpa lentillifera*'. *J Sci Technol.* 26 (2004) 199–207.
- [169] Renmin Gong, Rui Guan, Jiajing Zhao, Xingyan Liu and Shoujun Ni,'Citric acid Functionalizing Wheat straw as sorbent for Copper Removal from Aqueous Solution', *J Health Sci.* 54(2) (2008)174-178.
- [170] B.H. Hameed, M.I El-Khaiary, 'Removal of basic dye from aqueous medium using a novel agricultural waste material: pumpkin seed hull', *J. Hazard. Mater.*155 (2008a) 601- 609.
- [171] G. Akkaya, A. Özer, 'Biosorption of Acid Red 274 (AR 274) on *Dicranella varia*: Determination of equilibrium and kinetic model parameters', *Process Biochem.*,40 (2005) 3559-3568.
- [172] A.O.Dada, A.P.Olalekan, A.M.Olatunya and O.Dada,' Langmuir, Freundlich, Temkin and Dubinin-Radushkevich Isotherms Studies of Equilibrium Sorption of Zn^{2+} unto Phosphoric Acid Modified Rice Husk'. *IOSR Journal of Applied Chemistry*, 3 (2012) 38-45.
- [173] Bulut Yasemin, Tez Zeki, 'Removal of heavy metals from aqueous solution by sawdust adsorption', *J. Environ. Sci.* 19 (2007) 160-166.
- [174] L.Monser, N. Adhoum, 'Tartrazine modified activated carbon for the removal of Pb(II), Cd(II) and Cr(III)', *J.Hazard.Mater* 16 (2009) 263-269.

- [175] Q. Ma, F. Shen, X. Lu, W. Bao, H. Ma, 'Studies on the adsorption behaviour of methyl orange from dye wastewater onto activated clay', *Desalin. Water Treat.* 51 (2013) 3700-3709.
- [176] E.C. Lima, B. Royer, J.C.P. Vaghetti, N.M. Simona, B.M. da Cunha, F.A. Pavana, E.V. Benvenuttia, R. Cataluña-Vesesa, C. Airoidib, 'Application of Brazilian pine- fruit shell as a biosorbent to removal of reactive red 194 textile dye from aqueous solution Kinetics and equilibrium study', *J. Hazard. Mater.* 155 (2008) 536 - 550.
- [177] S.Qadri, A.Ganoe, Y.Haik, 'Removal and recovery of acridine orange from solutions by use of magnetic nanoparticles'. *J. Hazard. Mater.* 169 (2009) 318-323.
- [178] Na Yang, Shenmin Zhu, Di Zhang, Shi Xu, 'Synthesis and properties of magnetic Fe₃O₄- activated carbon Nanocomposite particles for dye removal', *Mater. Lett.* 62 (2008) 645 - 647.
- [179] G.Zhang, J. Qu, H.Liu, A.T. Cooper, R.Wu, 'CuFe₂O₄ / activated carbon composite: a magnetic adsorbent for the removal of acid orange II and catalytic regeneration, *Chemosphere.* 68 (2008) 643-647.
- [180] Hu.Jing, M.C. Irene, Lo,Guohua Chen, 'Comparative study of various magnetic nanoparticles for Cr(VI) removal', *Sep. Purif. Technol.* 56 (2007) 249 - 256.
- [181] J.Arana, JAH Melian, JMD Rodriguez, OG Diaz, A.Viera, JP Pena, PMM Sosa, V E Jimenez. 'TiO₂- photocatalysis as a tertiary treatment of naturally treated wastewater'. *Catal Today.* 76 (2002) 279-289.
- [182] L.G.Devi, R. Kavitha, 'A review on plasmonic metal-TiO₂ composite for generation, trapping, storing and dynamic vectorial transfer of photo generated electrons across the Schottky junction in a photocatalytic system'. *Appl. Surf. Sci.* 360 (2016) 601-622.
- [183] H. Slimen, A. Houas, and J. P. Nogier, 'Elaboration of stable anatase TiO₂ through activated carbon addition with high photocatalytic activity under visible light', *Journal of Photochemistry and Photobiology A: Chemistry*, 221(1) (2011) 13-21.

- [184] YJ Li, XM Zhou, W Chen, et al. 'Photo decolorization of Rhodamine B on tungsten- doped TiO₂ /activated carbon under visible-light irradiation'. *J Hazard Mater*; 227– 228 (2012) 25–33.
- [185] N. Kannan, A. Vijayakumar and P. Subramaniam, 'Studies on the Removal of Red Industrial Dye Using Teak Leaf, Maize Corn and Babool Tree Bark Carbons –A Comparison', *E-J.Chem*, 7(3) (2010) 770-774.
- [186] Conrad K. Enenebeaku, Nnaemeka J. Okorochoa, Uchechi E. Enenebeaku, Benedict. Onyeachu, 'Adsorption of Methylene Blue Dye onto Bush Cane Bark Powder', *Int. lett. chem*, 76 (2017) 12-26.
- [187] Rakesh Chauhan, Jitender Pal, 'Removal of Dyes from Aqueous Solution Using Activated Carbon of Poplar Tree', *International Journal of Science, Engineering and Technology*, 4(2) (2016) 473-480.