

REFERENCES

- Abdel-Samad, H., & Watson, P.R. (1998). An XPS study of the adsorption of lead on goethite (α -FeOOH). **Applied Surface Science**, **136**(1-2), 46–54.
- Abdelwahab, O., & Amin, N.K. (2013). Adsorption of phenol from aqueous solutions by *Luffa cylindrica* fibers: Kinetics, isotherm and thermodynamic studies. **The Egyptian Journal of Aquatic Research**, **39**(4), 215–223.
- Al-Degs, Y., Khraisheh, M.A., & Tutunji, M.F. (2001). Sorption of lead ions on diatomite and manganese oxides modified diatomite. **Water Research**, **35**(15), 3724–3728.
- Al-Degs, Y.S., Khraisheh, M.A.M., Allen, S.J., & Ahmad, M.N. (2009). Adsorption characteristics of reactive dyes in columns of activated carbon. **Journal of Hazardous Materials**, **165**(1–3), 944–949.
- Al-Ghouti, M.A., Khraisheh, M.A.M., Ahmad, M.N.M., & Allen, S. (2009). Adsorption behaviour of methylene blue onto Jordanian diatomite: a kinetic study. **Journal of Hazardous Materials**, **165**(1-3), 589–598.
- Amuda, O.S., Giwa, A.A., & Bello, I.A. (2007). Removal of heavy metal from industrial wastewater using modified activated coconut shell carbon. **Biochemical Engineering Journal**, **36**(2), 174–181.
- An, H., Zhao, X., Jia, Z., Wu, C., & Wang, Y. (2009). Synthesis of magnetic Pb/Fe₃O₄/SiO₂ and its catalytic activity for propylene carbonate synthesis via urea and 1,2-propylene glycol. **Frontiers of Chemical Engineering in China**, **3**(2), 215–218.
- Anirudhan, T.S., Divya, L., & Suchithra, P.S. (2009). Kinetic and equilibrium characterization of uranium(VI) adsorption onto carboxylate-functionalized poly(hydroxyethylmethacrylate)-grafted lignocellulosics. **Journal of Environmental Management**, **90**(1), 549–560.
- Arancibia-Miranda, N., Baltazar, S.E., García, A., Romero, A.H., Rubio, M.A., & Altbir, D. (2014). Lead removal by nano-scale zero valent iron: Surface analysis and pH effect. **Materials Research Bulletin**, **59**, 341–348.

- Aredes, S., Klein, B., & Pawlik, M. (2012). The removal of arsenic from water using natural iron oxide minerals. **Journal of Cleaner Production**, **29–30**, 208–213.
- Arshadi, M., Soleymanzadeh, M., Salvacion, J.W.L., & Salimi, V.F. (2014). Nanoscale Zero-Valent Iron (NZVI) supported on sineguelas waste for Pb(II) removal from aqueous solution: kinetics, thermodynamic and mechanism. **Journal of Colloid and Interface Science**, **426**, 241–251.
- Artyushkova, K., Levendosky, S., Atanassov, P., & Fulghum, J. (2007). XPS Structural Studies of Nano-composite Non-platinum Electrocatalysts for Polymer Electrolyte Fuel Cells. **Topics in Catalysis**, **46**(3-4), 263–275.
- Axtell, N.R., Sternberg, S.P.K., & Claussen, K. (2003). Lead and nickel removal using *Microspora* and *Lemna minor*. **Bioresource Technology**, **89**(1), 41–48.
- Barnes, D.E., Wright, P.J., Graham, S.M., & Jones-Watson, E.A. (2000). Techniques for the Determination of Cyanide in a Process Environment: A Review. **Geostandards Newsletter**, **24**(2), 183–195.
- Başar, C.A. (2006). Applicability of the various adsorption models of three dyes adsorption onto activated carbon prepared waste apricot. **Journal of Hazardous Materials**, **135**(1–3), 232–241.
- Basu, T., & Ghosh, U.C. (2011). Arsenic(III) removal performances in the absence/presence of groundwater occurring ions of agglomerated Fe(III)–Al(III) mixed oxide nanoparticles. **Journal of Industrial and Engineering Chemistry**, **17**(5–6), 834–844.
- Bao, M.L., Griffini, O., Santianni, D., Barbieri, K., Burrini, D., & Pantani, F. (1999). Removal of bromate ion from water using granular activated carbon. **Water Research**, **33**(13), 2959–2970.
- Baysal, Z., Çinar, E., Bulut, Y., Alkan, H., & Dogru, M. (2009). Equilibrium and thermodynamic studies on biosorption of Pb(II) onto *Candida albicans* biomass. **Journal of Hazardous Materials**, **161**(1), 62–67.
- Behnamfard, A., & Salarirad, M.M. (2009). Equilibrium and kinetic studies on free cyanide adsorption from aqueous solution by activated carbon. **Journal of Hazardous Materials**, **170**(1), 127–133.

- Bessbousse, H., Rhallou, T., Verchère, J.F., & Lebrun, L. (2008). Removal of heavy metal ions from aqueous solutions by filtration with a novel complexing membrane containing poly(ethyleneimine) in a poly(vinyl alcohol) matrix. **Journal of Membrane Science**, **307**(2), 249–259.
- Bera, A., Kumar, T., Ojha, K., & Mandal, A. (2013). Adsorption of surfactants on sand surface in enhanced oil recovery: Isotherms, kinetics and thermodynamic studies. **Applied Surface Science**, **284**, 87–99.
- Bernardin, F.E. (1973). Cyanide Detoxification Using Adsorption and Catalytic Oxidation on Granular Activated Carbon. **Journal (Water Pollution Control Federation)**, **45**(2), 221–231.
- Boparai, H.K., Joseph, M., & O'Carroll, D.M. (2011). Kinetics and thermodynamics of cadmium ion removal by adsorption onto nano zerovalent iron particles. **Journal of Hazardous Materials**, **186**(1), 458–465.
- Bhowmick, S., Chakraborty, S., Mondal, P., Van Renterghem, W., Van den Berghe, S., Roman-Ross, G. et al. (2014). Montmorillonite-supported nanoscale zero-valent iron for removal of arsenic from aqueous solution: Kinetics and mechanism. **Chemical Engineering Journal**, **243**, 14–23.
- Caliskan, N., Kul, A.R., Alkan, S., Sogut, E.G., & Alacabey, İ. (2011). Adsorption of Zinc(II) on diatomite and manganese-oxide-modified diatomite: A kinetic and equilibrium study. **Journal of Hazardous Materials**, **193**, 27–36.
- Cao, J., Wu, Y., Jin, Y., Yilihan, P., & Huang, W. (2014). Response surface methodology approach for optimization of the removal of chromium(VI) by NH₂-MCM-41. **Journal of the Taiwan Institute of Chemical Engineers**, **45**(3), 860–868.
- Chang, F., Qu, J., Liu, H., Liu, R., & Zhao, X. (2009). Fe–Mn binary oxide incorporated into diatomite as an adsorbent for arsenite removal: Preparation and evaluation. **Journal of Colloid and Interface Science**, **338**(2), 353–358.
- Chang, Q., Lin, W., & Ying, W. (2010). Preparation of iron-impregnated granular activated carbon for arsenic removal from drinking water. **Journal of Hazardous Materials**, **184**(1–3), 515–522.

- Chao, H.P., & Chang, C.C. (2012). Adsorption of copper(II), cadmium(II), nickel(II) and lead(II) from aqueous solution using biosorbents. **Adsorption**, **18**(5-6), 395–401.
- Chen, Q., Luo, Z., Hills, C., Xue, G., & Tyrer, M. (2009). Precipitation of heavy metals from wastewater using simulated flue gas: sequent additions of fly ash, lime and carbon dioxide. **Water Research**, **43**(10), 2605–2614.
- Chen, S., Yue, Q., Gao, B., Li, Q., Xu, X., & Fu, K. (2012). Adsorption of hexavalent chromium from aqueous solution by modified corn stalk: a fixed-bed column study. **Bioresource Technology**, **113**, 114–120.
- Chen, Z., Zhang, J., Fu, J., Wang, M., Wang, X., Han, R., & Xu, Q. (2014). Adsorption of methylene blue onto poly(cyclotriphosphazene-co-4,4'-sulfonyldiphenol) nanotubes: Kinetics, isotherm and thermodynamics analysis. **Journal of Hazardous Materials**, **273**, 263–271.
- Chen, Z., Wang, T., Jin, X., Chen, Z., Megharaj, M., & Naidu, R. (2013). Multifunctional kaolinite-supported nanoscale zero-valent iron used for the adsorption and degradation of crystal violet in aqueous solution. **Journal of Colloid and Interface Science**, **398**, 59–66.
- Cheung, W.H., Szeto, Y.S., & McKay, G. (2007). Intraparticle diffusion processes during acid dye adsorption onto chitosan. **Bioresource Technology**, **98**(15), 2897–2904.
- Chowdhury, S.R., Yanful, E.K., & Pratt, A.R. (2010). Arsenic removal from aqueous solutions by mixed magnetite–maghemite nanoparticles. **Environmental Earth Sciences**, **64**(2), 411–423.
- Dash, R.R., Balomajumder, C., & Kumar, A. (2009). Removal of cyanide from water and wastewater using granular activated carbon. **Chemical Engineering Journal**, **146**(3), 408–413.
- Depci, T. (2012). Comparison of activated carbon and iron impregnated activated carbon derived from Gölbaşı lignite to remove cyanide from water. **Chemical Engineering Journal**, **181-182**, 467–478.
- Do, S.H., Jo, Y.H., Park, H.D., & Kong, S.H. (2012). Synthesis of iron composites on nano-pore substrates: identification and its application to removal of cyanide. **Chemosphere**, **89**(11), 1450–1456.

- Dorathi, P.J., & Kandasamy, P. (2012). Dechlorination of chlorophenols by zero valent iron impregnated silica. **Journal of Environmental Sciences (China)**, **24**(4), 765–773.
- Dou, C., & Zhang, J. (2011). Effects of lead on neurogenesis during zebrafish embryonic brain development. **Journal of Hazardous Materials**, **194**, 277–282.
- Dou, X., Li, R., Zhao, B., & Liang, W. (2010). Arsenate removal from water by zero-valent iron/activated carbon galvanic couples. **Journal of Hazardous Materials**, **182**(1-3), 108–114.
- Du, Q., Zhang, S., Pan, B., Lv, L., Zhang, W., & Zhang, Q. (2013). Bifunctional resin-ZVI composites for effective removal of arsenite through simultaneous adsorption and oxidation. **Water Research**, **47**(16), 6064–6074.
- El-Aila, H.J., Elsousy, K.M., & Hartany, K.A. [n.d.]. Kinetics, equilibrium, and isotherm of the adsorption of cyanide by MDFSD. **Arabian Journal of Chemistry**.
- Elizalde-González, M.P., Mattusch, J., Wennrich, R., & Morgenstern, P. (2001). Uptake of arsenite and arsenate by clinoptilolite-rich tuffs. **Microporous and Mesoporous Materials**, **46**(2–3), 277–286.
- Eren, E. (2009). Removal of lead ions by Unye (Turkey) bentonite in iron and magnesium oxide-coated forms. **Journal of Hazardous Materials**, **165**(1–3), 63–70.
- Fan, T., Liu, Y., Feng, B., Zeng, G., Yang, C., Zhou, M. et al. (2008). Biosorption of cadmium(II), zinc(II) and lead(II) by *Penicillium simplicissimum*: Isotherms, kinetics and thermodynamics. **Journal of Hazardous Materials**, **160**(2-3), 655–661.
- Feng, Q., Lin, Q., Gong, F., Sugita, S., & Shoya, M. (2004). Adsorption of lead and mercury by rice husk ash. **Journal of Colloid and Interface Science**, **278**(1), 1–8.
- Febrianto, J., Kosasih, A.N., Sunarso, J., Ju, Y.H., Indraswati, N., & Ismadji, S. (2009). Equilibrium and kinetic studies in adsorption of heavy metals using biosorbent: a summary of recent studies. **Journal of Hazardous Materials**, **162**(2-3), 616–645.

- Fermoso, J., Gil, M.V., Arias, B., Plaza, M.G., Pevida, C., Pis, J.J., & Rubiera, F. (2010). Application of response surface methodology to assess the combined effect of operating variables on high-pressure coal gasification for H₂-rich gas production. **International Journal of Hydrogen Energy**, **35**(3), 1191–1204.
- Fu, F., Ma, J., Xie, L., Tang, B., Han, W., & Lin, S. (2013). Chromium removal using resin supported nanoscale zero-valent iron. **Journal of Environmental Management**, **128**, 822–827.
- Ghafari, S., Aziz, H.A., Isa, M.H., & Zinatizadeh, A.A. (2009). Application of response surface methodology (RSM) to optimize coagulation–flocculation treatment of leachate using poly-aluminum chloride (PAC) and alum. **Journal of Hazardous Materials**, **163**(2–3), 650–656.
- Goel, J., Kadirvelu, K., Rajagopal, C., & Kumar Garg, V. (2005). Removal of lead(II) by adsorption using treated granular activated carbon: Batch and column studies. **Journal of Hazardous Materials**, **125**(1–3), 211–220.
- Gupta, K., & Ghosh, U.C. (2009). Arsenic removal using hydrous nanostructure iron(III)–titanium(IV) binary mixed oxide from aqueous solution. **Journal of Hazardous Materials**, **161**(2–3), 884–892.
- Gupta, N., Balomajumder, C., & Agarwal, V.K. (2012). Adsorption of cyanide ion on pressmud surface: A modeling approach. **Chemical Engineering Journal**, **191**, 548–556.
- Gupta, V.K., Saini, V.K., & Jain, N. (2005). Adsorption of As(III) from aqueous solutions by iron oxide-coated sand. **Journal of Colloid and Interface Science**, **288**(1), 55–60.
- Guo, H., Stüben, D., & Berner, Z. (2007). Removal of arsenic from aqueous solution by natural siderite and hematite. **Applied Geochemistry**, **22**(5), 1039–1051.
- Gutierrez-Muñiz, O.E., García-Rosales, G., Ordoñez-Regil, E., Olguin, M.T., & Cabral-Prieto, A. (2013). Synthesis, characterization and adsorptive properties of carbon with iron nanoparticles and iron carbide for the removal of As(V) from water. **Journal of Environmental Management**, **114**, 1–7.
- Gürses, A., Karaca, S., Doğar, Ç., Bayrak, R., Açıkyıldız, M., & Yalçın, M. (2004). Determination of adsorptive properties of clay/water system: methylene blue sorption. **Journal of Colloid and Interface Science**, **269**(2), 310–314.

- Hameed, B.H., Mahmoud, D.K., & Ahmad, A.L. (2008). Equilibrium modeling and kinetic studies on the adsorption of basic dye by a low-cost adsorbent: Coconut (*Cocos nucifera*) bunch waste. **Journal of Hazardous Materials**, **158**(1), 65–72.
- Hameed, B.H., Salman, J.M., & Ahmad, A.L. (2009). Adsorption isotherm and kinetic modeling of 2,4-D pesticide on activated carbon derived from date stones. **Journal of Hazardous Materials**, **163**(1), 121–126.
- Han, B., Runnells, T., Zimbron, J., & Wickramasinghe, R. (2002). Arsenic removal from drinking water by flocculation and microfiltration. **Desalination**, **145** (1–3), 293–298.
- Hermas, A.A. (2008). XPS analysis of the passive film formed on austenitic stainless steel coated with conductive polymer. **Corrosion Science**, **50**(9), 2498–2505.
- Ho, Y.S., & McKay, G. (1998). Sorption of dye from aqueous solution by peat. **Chemical Engineering Journal**, **70**(2), 115–124.
- Hokkanen, S., Repo, E., Lou, S., & Sillanpää, M. (2015). Removal of arsenic(V) by magnetic nanoparticle activated microfibrillated cellulose. **Chemical Engineering Journal**, **260**, 886–894.
- Hong, H., Kim, H., Baek, K., & Yang, J.W. (2008). Removal of arsenate, chromate and ferricyanide by cationic surfactant modified powdered activated carbon. **Desalination**, **223**(1–3), 221–228.
- Hu, J., Lo, I.M.C., & Chen, G. (2007). Performance and mechanism of chromate (VI) adsorption by δ -FeOOH-coated maghemite (γ -Fe₂O₃) nanoparticles. **Application of Nanotechnologies in Separation and Purification**, **58**(1), 76–82.
- Hutson, N.D., & Yang, R.T. (1997). Theoretical basis for the Dubinin-Radushkevitch (D-R) adsorption isotherm equation. **Adsorption**, **3**(3), 189–195.
- Irani, M., Amjadi, M., & Mousavian, M.A. (2011). Comparative study of lead sorption onto natural perlite, dolomite and diatomite. **Chemical Engineering Journal**, **178**, 317–323.
- Jeon, C.S., Baek, K., Park, J.K., Oh, Y.K., & Lee, S.D. (2009). Adsorption characteristics of As(V) on iron-coated zeolite. **Journal of Hazardous Materials**, **163**(2–3), 804–808.

- Jeong, G.T., Yang, H.S., & Park, D.H. (2009). Optimization of transesterification of animal fat ester using response surface methodology. **Bioresource Technology**, **100**(1), 25–30.
- Kaewkannetra, P., Imai, T., Garcia-Garcia, F.J., & Chiu, T.Y. (2009). Cyanide removal from cassava mill wastewater using *Azotobacter vinelandii* TISTR 1094 with mixed microorganisms in activated sludge treatment system. **Journal of Hazardous Materials**, **172**(1), 224–228.
- Kanel, S.R., Grenèche, J.M., & Choi, H. (2006). Arsenic(V) Removal from Groundwater Using Nano Scale Zero-Valent Iron as a Colloidal Reactive Barrier Material. **Environmental Science & Technology**, **40**(6), 2045–2050.
- Kanel, S.R., Manning, B., Charlet, L., & Choi, H. (2005). Removal of Arsenic(III) from Groundwater by Nanoscale Zero-Valent Iron. **Environmental Science & Technology**, **39**(5), 1291–1298.
- Katlego, S. (2012). Removal of Pb(II) from aqueous solution using hydrotalcite-like nanostructured material. **International Journal of the Physical Sciences**, **7**(1), 63-72.
- Karagöz, S., Tay, T., Ucar, S., & Erdem, M. (2008). Activated carbons from waste biomass by sulfuric acid activation and their use on methylene blue adsorption. **Bioresource Technology**, **99**(14), 6214–6222.
- Kartinen Jr., E.O., & Martin, C.J. (1995). An overview of arsenic removal processes. **Desalination**, **103**(1–2), 79–88.
- Kazi, T.G., Jalbani, N., Kazi, N., Jamali, M.K., Arain, M.B., Afridi, H.I. et al. (2008). Evaluation of toxic metals in blood and urine samples of chronic renal failure patients, before and after dialysis. **Renal Failure**, **30**(7), 737–745.
- Keenan, C.R., & Sedlak, D.L. (2008). Factors Affecting the Yield of Oxidants from the Reaction of Nanoparticulate Zero-Valent Iron and Oxygen. **Environmental Science & Technology**, **42**(4), 1262–1267.
- Khraisheh, M.A.M., Al-Degs, Y.S., Allen, S.J., & Ahmad, M.N. (2002). Elucidation of Controlling Steps of Reactive Dye Adsorption on Activated Carbon. **Industrial & Engineering Chemistry Research**, **41**(6), 1651–1657.

- Khraisheh, M.A.M., Al-degs Yahya S., & Mcminn, W.A.M. (2004). Remediation of wastewater containing heavy metals using raw and modified diatomite. **Chemical Engineering Journal**, **99**(2), 177–184.
- Kim, S.A., Kamala-Kannan, S., Lee, K.J., Park, Y.J., Shea, P.J., Lee, W.H. et al. (2013). Removal of Pb(II) from aqueous solution by a zeolite–nanoscale zero-valent iron composite. **Chemical Engineering Journal**, **217**, 54–60.
- Maji, S.K., Pal, A., Pal, T., & Adak, A. (2007). Modeling and fixed bed column adsorption of As(III) on laterite soil. **Separation and Purification Technology**, **56**(3), 284–290.
- Malkoc, E., Nuhoglu, Y., & Dundar, M. (2006). Adsorption of chromium(VI) on pomace—An olive oil industry waste: Batch and column studies. **Journal of Hazardous Materials**, **138**(1), 142–151.
- Moussavi, G., & Khosravi, R. (2010). Removal of cyanide from wastewater by adsorption onto pistachio hull wastes: Parametric experiments, kinetics and equilibrium analysis. **Journal of Hazardous Materials**, **183**(1–3), 724–730.
- Köseoglu, R., Köksal, F., Çiftçi, E., & Akkurt, M. (2005). Identification of paramagnetic radicals in γ -irradiated natural diatomite minerals by electron paramagnetic resonance. **Journal of Molecular Structure**, **733**(1–3), 151–154.
- Kul, A.R., & Koyuncu, H. (2010). Adsorption of Pb(II) ions from aqueous solution by native and activated bentonite: kinetic, equilibrium and thermodynamic study. **Journal of Hazardous Materials**, **179**(1–3), 332–339.
- Kundu, S., & Gupta, A.K. (2006). Adsorptive removal of As(III) from aqueous solution using iron oxide coated cement (IOCC): Evaluation of kinetic, equilibrium and thermodynamic models. **Separation and Purification Technology**, **51**(2), 165–172.
- Kundu, S., & Gupta, A.K. (2007). Adsorption characteristics of As(III) from aqueous solution on iron oxide coated cement (IOCC). **Journal of Hazardous Materials**, **142**(1–2), 97–104.
- Lakshmipathiraj, P., Narasimhan, B.R.V., Prabhakar, S., & Bhaskar, R.G. (2006). Adsorption studies of arsenic on Mn-substituted iron oxyhydroxide. **Journal of Colloid and Interface Science**, **304**(2), 317–322.

- Laurindo, E.A., Bocchi, N., & Rocha-Filho, R.C. (2000). Production and characterization of Ti/PbO₂ electrodes by a thermal-electrochemical method. **Journal of the Brazilian Chemical Society**, **11**(4), 429–433.
- Li, X., Elliott, D.W., & Zhang, W. (2006). Zero-Valent Iron Nanoparticles for Abatement of Environmental Pollutants: Materials and Engineering Aspects. **Critical Reviews in Solid State and Materials Sciences**, **31**(4), 111–122.
- Li, Y., Li, J., & Zhang, Y. (2012). Mechanism insights into enhanced Cr(VI) removal using nanoscale zerovalent iron supported on the pillared bentonite by macroscopic and spectroscopic studies. **Journal of Hazardous Materials**, **227-228**, 211–218.
- Liao, C.J., Chung, T.L., Chen, W.L., & Kuo, S.L. (2007). Treatment of pentachlorophenol-contaminated soil using nano-scale zero-valent iron with hydrogen peroxide. **Journal of Molecular Catalysis A: Chemical**, **265**(1–2), 189–194.
- Liu, T., Wang, Z.L., Zhao, L., & Yang, X. (2012). Enhanced chitosan/Fe⁰-nanoparticles beads for hexavalent chromium removal from wastewater. **Chemical Engineering Journal**, **189-190**, 196–202.
- Liu, T., Wang, Z.L., Yan, X., & Zhang, B. (2014). Removal of mercury (II) and chromium (VI) from wastewater using a new and effective composite: Pumice-supported nanoscale zero-valent iron. **Chemical Engineering Journal**, **245**, 34–40.
- Leupin, O.X., & Hug, S.J. (2005). Oxidation and removal of arsenic(III) from aerated groundwater by filtration through sand and zero-valent iron. **Water Research**, **39**(9), 1729–1740.
- Luther, S., Borgfeld, N., Kim, J., & Parsons, J.G. (2012). Removal of arsenic from aqueous solution: A study of the effects of pH and interfering ions using iron oxide nanomaterials. **Microchemical Journal**, **101**, 30–36.
- LV, X., Xu, J., Jiang, G., Tang, J., & Xu, X. (2012). Highly active nanoscale zero-valent iron (nZVI)-Fe₃O₄ nanocomposites for the removal of chromium(VI) from aqueous solutions. **Journal of Colloid and Interface Science**, **369**(1), 460–469.

- Ma, W., Lv, T., Song, X., Cheng, Z., Duan, S., Xin, G. et al. (2014). Characteristics of selective fluoride adsorption by biocarbon-Mg/Al layered double hydroxides composites from protein solutions: kinetics and equilibrium isotherms study. **Journal of Hazardous Materials**, **268**, 166–176.
- Mahmoodi, N.M., Sadeghi, U., Maleki, A., Hayati, B., & Najafi, F. (2014). Synthesis of cationic polymeric adsorbent and dye removal isotherm, kinetic and thermodynamic. **Journal of Industrial and Engineering Chemistry**, **20**(5), 2745–2753.
- Mahmood, T., Din, S.U., Naeem, A., Mustafa, S., Waseem, M., & Hamayun, M. (2012). Adsorption of arsenate from aqueous solution on binary mixed oxide of iron and silicon. **Chemical Engineering Journal**, **192**, 90–98.
- Mak, M.S.H., Rao, P., & Lo, I.M.C. (2011). Zero-valent iron and iron oxide-coated sand as a combination for removal of co-present chromate and arsenate from groundwater with humic acid. **Environmental Pollution (Barking, Essex: 1987)**, **159**(2), 377–382.
- Manning, B.A., Hunt, M.L., Amrhein, C., & Yarmoff, J.A. (2002). Arsenic(III) and Arsenic(V) Reactions with Zerovalent Iron Corrosion Products. **Environmental Science & Technology**, **36**(24), 5455–5461.
- Mekki, A., Holland, D., McConville, C.F., & Salim, M. (1996). An XPS study of iron sodium silicate glass surfaces. **Journal of Non-Crystalline Solids**, **208**(3), 267–276.
- Mishra, P.C., & Patel, R.K. (2009). Removal of lead and zinc ions from water by low cost adsorbents. **Journal of Hazardous Materials**, **168**(1), 319–325.
- Momcilovic, M., Purenovic, M., Bojic, A., Zarubica, A., & Randelovic, M. (2011). Removal of lead(II) ions from aqueous solutions by adsorption onto pine cone activated carbon. **Desalination**, **276**(1–3), 53–59.
- Mondal, P., Balomajumder, C., & Mohanty, B. (2007). Quantitative Separation of As(III) and As(V) from a Synthetic Water Solution Using Ion Exchange Columns in the Presence of Fe and Mn Ions. **CLEAN – Soil, Air, Water**, **35**(3), 255–260.

- Mondal, P., Majumder, C.B., & Mohanty, B. (2008). Effects of adsorbent dose, its particle size and initial arsenic concentration on the removal of arsenic, iron and manganese from simulated ground water by Fe^{3+} impregnated activated carbon. **Journal of Hazardous Materials**, **150**(3), 695–702.
- Moussavi, G., & Khosravi, R. (2010). Removal of cyanide from wastewater by adsorption onto pistachio hull wastes: Parametric experiments, kinetics and equilibrium analysis. **Journal of Hazardous Materials**, **183**(1–3), 724–730.
- Mosaferi, M., Nemati, S., Khataee, A., Nasser, S., & Hashemi, A.A. (2014). Removal of Arsenic(III, V) from aqueous solution by nanoscale zero-valent iron stabilized with starch and carboxymethyl cellulose. **Journal of Environmental Health Science and Engineering**, **12**(1), 74.
- Naeem, A., Saddique, M.T., Mustafa, S., Kim, Y., & Dilara, B. (2009). Cation exchange removal of Pb from aqueous solution by sorption onto NiO. **Journal of Hazardous Materials**, **168**(1), 364–368.
- Ng, C., Losso, J.N., Marshall, W.E., & Rao, R.M. (2002). Freundlich adsorption isotherms of agricultural by-product-based powdered activated carbons in a geosmin–water system. **Bioresource Technology**, **85**(2), 131–135.
- Onal, O.T., & Frigi Rodrigues, D. (2014). Optimized carbonate micro-particle production by *Sporosarcina pasteurii* using response surface methodology. **Ecological Engineering**, **62**, 168–174.
- Oubagaranadin, J.U.K., & Murthy, Z.V.P. (2009). Adsorption of Divalent Lead on a Montmorillonite–Illite Type of Clay. **Industrial & Engineering Chemistry Research**, **48**(23), 10627–10636.
- Ozdes, D., Gundogdu, A., Kemer, B., Duran, C., Senturk, H.B., & Soylak, M. (2009). Removal of Pb(II) ions from aqueous solution by a waste mud from copper mine industry: Equilibrium, kinetic and thermodynamic study. **Journal of Hazardous Materials**, **166**(2–3), 1480–1487.
- Ozmen, M., Can, K., Arslan, G., Tor, A., Cengeloglu, Y., & Ersoz, M. (2010). Adsorption of Cu(II) from aqueous solution by using modified Fe_3O_4 magnetic nanoparticles. **Desalination**, **254**(1–3), 162–169.

- Ornek, A., Ozacar, M., & Şengil, I.A. (2007). Adsorption of lead onto formaldehyde or sulphuric acid treated acorn waste: Equilibrium and kinetic studies. **Biochemical Engineering Journal**, **37**(2), 192–200.
- Ozacar, M., Sengil, I.A., & Turkmenler, H. (2008). Equilibrium and kinetic data, and adsorption mechanism for adsorption of lead onto valonia tannin resin. **Chemical Engineering Journal**, **143**(1–3), 32–42.
- Ozcan, A.S., Gok, O., & Ozcan, A. (2009). Adsorption of lead(II) ions onto 8-hydroxy quinoline-immobilized bentonite. **Journal of Hazardous Materials**, **161**(1), 499–509.
- Ozlem, K.A.Z., & Yurum, Y. (2013). Synthesis and characterization of anatase nanoadsorbent and application in removal of lead, copper and arsenic from water. **Chemical Engineering Journal**, **225**, 625–635.
- Ozturk, N., & Kavak, D. (2005). Adsorption of boron from aqueous solutions using fly ash: Batch and column studies. **Journal of Hazardous Materials**, **127**(1–3), 81–88.
- Pan, Y.F., Chiou, C.T., & Lin, T.F. (2010). Adsorption of arsenic(V) by iron-oxide-coated diatomite (IOCD). **Environmental Science and Pollution Research International**, **17**(8), 1401–1410.
- Pojananukij, N., Wantala, K., Neramittagapong, S., & Neramittagapong, A. (2014). Parameter Screening for the Important Factors Influencing the As(V) Adsorption Using a Plackett-Burman Design. **Advanced Materials Research**, **931-932**, 178–182.
- Ponder, S.M., Darab, J.G., Bucher, J., Caulder, D., Craig, I., Davis, L. et al. [n.d.]. Surface chemistry and electrochemistry of supported zerovalent iron nanoparticles in the remediation of aqueous metal contaminants. **Chemistry of Materials**, **13**(2), 479–486.
- Qiu, X., Fang, Z., Liang, B., Gu, F., & Xu, Z. (2011). Degradation of decabromodiphenyl ether by nano zero-valent iron immobilized in mesoporous silica microspheres. **Journal of Hazardous Materials**, **193**, 70–81.

- Rakhshaei, R., Khosravi, M., & Ganji, M.T. (2006). Kinetic modeling and thermodynamic study to remove Pb(II), Cd(II), Ni(II) and Zn(II) from aqueous solution using dead and living *Azolla filiculoides*. **Journal of Hazardous Materials**, **134**(1-3), 120–129.
- Rahmani, A.R., Ghaffari, H.R., & Samadi, M.T. (2011). A comparative study on arsenic(III) removal from aqueous solution using nano and micro sized zero-valent iron. **Iranian Journal of Environmental Health Science & Engineering**, **8**(2), 157–166.
- Ramos, M.A.V., Yan, W., Li, X., Koel, B.E., & Zhang, W. (2009). Simultaneous Oxidation and Reduction of Arsenic by Zero-Valent Iron Nanoparticles: Understanding the Significance of the Core–Shell Structure. **The Journal of Physical Chemistry C**, **113**(33), 14591–14594.
- Ryu, A., Jeong, S.W., Jang, A., & Choi, H. (2011). Reduction of highly concentrated nitrate using nanoscale zero-valent iron: Effects of aggregation and catalyst on reactivity. **Applied Catalysis B: Environmental**, **105**(1–2), 128–135.
- Saadi, Z., Saadi, R., & Fazaeli, R. (2013). Fixed-bed adsorption dynamics of Pb(II) adsorption from aqueous solution using nanostructured γ -alumina. **Journal of Nanostructure in Chemistry**, **3**(1), 48.
- Salameh, Y., Al-Lagtah, N., Ahmad, M.N.M., Allen, S.J., & Walker, G.M. (2010). Kinetic and thermodynamic investigations on arsenic adsorption onto dolomitic sorbents. **Chemical Engineering Journal**, **160**(2), 440–446.
- Sari, A., Tuzen, M., Citak, D., & Soylak, M. (2007). Adsorption characteristics of Cu(II) and Pb(II) onto expanded perlite from aqueous solution. **Journal of Hazardous Materials**, **148**(1-2), 387–394.
- Saxena, S., Prasad, M., Amritphale, S.S., & Chandra, N. (2001). Adsorption of cyanide from aqueous solutions at pyrophyllite surface. **Separation and Purification Technology**, **24**(1–2), 263–270.
- Senthil, K.P. (2014). Adsorption of lead(II) ions from simulated wastewater using natural waste: A kinetic, thermodynamic and equilibrium study. **Environmental Progress & Sustainable Energy**, **33**(1), 55–64.

- Sirianuntapiboon, S., Chairattanawan, K., & Rarunroeng, M. (2008). Biological removal of cyanide compounds from electroplating wastewater (EPWW) by sequencing batch reactor (SBR) system. **Journal of Hazardous Materials**, **154**(1–3), 526–534.
- Sheng, G., Wang, S., Hu, J., Lu, Y., Li, J., Dong, Y., & Wang, X. (2009). Adsorption of Pb(II) on diatomite as affected via aqueous solution chemistry and temperature. **Colloids and Surfaces A: Physicochemical and Engineering Aspects**, **339**(1–3), 159–166.
- Straif, K., Benbrahim-Tallaa, L., Baan, R., Grosse, Y., Secretan, B., El Ghissassi, F. et al. (2009). A review of human carcinogens—Part C: metals, arsenic, dusts, and fibres. **The Lancet Oncology**, **10**(5), 453–454.
- Su, J., Huang, H.G., Jin, X.Y., Lu, X.Q., & Chen, Z.L. (2011). Synthesis, characterization and kinetic of a surfactant-modified bentonite used to remove As(III) and As(V) from aqueous solution. **Journal of Hazardous Materials**, **185**(1), 63–70.
- Sugashini, S., & Sheriffa Begum, K.M.M. (2012). Column Adsorption Studies for the Removal of Cr(VI) Ions by Ethylamine Modified Chitosan Carbonized Rice Husk Composite Beads with Modelling and Optimization. **Journal of Chemistry**.
- Sun, Z., Zheng, S., Ayoko, G.A., Frost, R.L., & Xi, Y. (2013). Degradation of simazine from aqueous solutions by diatomite-supported nanosized zero-valent iron composite materials. **Journal of Hazardous Materials**, **263**, Part 2, 768–777.
- Tatineni, R., Doddapaneni, K.K., Potumarthi, R.C., & Mangamoori, L.N. (2007). Optimization of keratinase production and enzyme activity using response surface methodology with streptomyces sp7. **Applied Biochemistry and Biotechnology**, **141**(2-3), 187–201.
- Tu, Y.J., You, C.F., Chang, C.K., & Wang, S.L. (2013). XANES evidence of arsenate removal from water with magnetic ferrite. **Journal of Environmental Management**, **120**, 114–119.

- Wang, C., Luo, H., Zhang, Z., Wu, Y., Zhang, J., & Chen, S. (2014). Removal of As(III) and As(V) from aqueous solutions using nanoscale zero valent iron-reduced graphite oxide modified composites. **Journal of Hazardous Materials**, **268**, 124–131.
- Wantala, K., Sthiannopkao, S., Srinameb, B., Grisdanurak, N., Kim, K.W., & Han, S. (2012). Arsenic Adsorption by Fe Loaded on RH-MCM-41 Synthesized from Rice Husk Silica. **Journal of Environmental Engineering**, **138**(1), 119–128.
- WHO. [n.d.]. **Guidelines for drinking-water quality - Volume 1: Recommendations**. Retrieved February 20, 2015, from http://www.who.int/water_sanitation_health/dwq/gdwq3rev/en
- WHO. [n.d.]. **Guidelines for drinking-water quality**. Retrieved November 10, 2012, from http://www.who.int/water_sanitation_health/dwq/guidelines/en
- WHO. [n.d.]. **Water sanitation and health**. Retrieved October 15, 2013, from http://www.who.int/water_sanitation_health/en
- Woo, H., Park, J., Lee, S., & Lee, S. (2014). Effects of washing solution and drying condition on reactivity of nano-scale zero valent irons (nZVIs) synthesized by borohydride reduction. **Chemosphere**, **97**, 146–152.
- Wu, Y., Jin, Y., Cao, J., Yilihan, P., Wen, Y., & Zhou, J. (2014). Optimizing adsorption of arsenic(III) by NH₂-MCM-41 using response surface methodology. **Journal of Industrial and Engineering Chemistry**, **20**(5), 2792–2800.
- Xi, Y., Mallavarapu, M., & Naidu, R. (2010). Reduction and adsorption of Pb²⁺ in aqueous solution by nano-zero-valent iron-A SEM, TEM and XPS study. **Materials Research Bulletin**, **45**(10), 1361–1367.
- Xu, X., Gao, B., Wang, W., Yue, Q., Wang, Y., & Ni, S. (2009). Adsorption of phosphate from aqueous solutions onto modified wheat residue: Characteristics, kinetic and column studies. **Colloids and Surfaces B: Biointerfaces**, **70**(1), 46–52.
- Yan, W., Ramos, M.A.V., Koel, B.E., & Zhang, W. (2012). As(III) Sequestration by Iron Nanoparticles: Study of Solid-Phase Redox Transformations with X-ray Photoelectron Spectroscopy. **The Journal of Physical Chemistry C**, **116**(9), 5303–5311.

- Yan, W., Vasic, R., Frenkel, A.I., & Koel, B.E. (2012). Intraparticle Reduction of Arsenite (As(III)) by Nanoscale Zerovalent Iron (nZVI) Investigated with In Situ X-ray Absorption Spectroscopy. **Environmental Science & Technology**, **46**(13), 7018–7026.
- Yazıcı, E.Y., Deveci, H., & Alp, İ. (2009). Treatment of cyanide effluents by oxidation and adsorption in batch and column studies. **Journal of Hazardous Materials**, **166**(2–3), 1362–1366.
- Yun, D.M., Cho, H.H., Jang, J.W., & Park, J.W. (2013). Nano zero-valent iron impregnated on titanium dioxide nanotube array film for both oxidation and reduction of methyl orange. **Water Research**, **47**(5), 1858–1866.
- Zhang, W., & Houlachi, G. (2010). Electrochemical studies of the performance of different Pb–Ag anodes during and after zinc electrowinning. **Hydrometallurgy**, **104**(2), 129–135.
- Zhang, W., Liu, W., Lv, Y., Li, B., & Ying, W. (2010). Enhanced carbon adsorption treatment for removing cyanide from coking plant effluent. **Journal of Hazardous Materials**, **184**(1-3), 135–140.
- Zhang, X., Lin, S., Chen, Z., Megharaj, M., & Naidu, R. (2011). Kaolinite-supported nanoscale zero-valent iron for removal of Pb^{2+} from aqueous solution: reactivity, characterization and mechanism. **Water Research**, **45**(11), 3481–3488.
- Zhang, Y., Li, Y., Li, J., Hu, L., & Zheng, X. (2011). Enhanced removal of nitrate by a novel composite: Nanoscale zero valent iron supported on pillared clay. **Chemical Engineering Journal**, **171**(2), 526–531.
- Zhang, Y.Y., Jiang, H., Zhang, Y., & Xie, J.F. (2013). The dispersity-dependent interaction between montmorillonite supported nZVI and Cr(VI) in aqueous solution. **Chemical Engineering Journal**, **229**, 412–419.
- Zhao, Z., Jia, Y., Xu, L., & Zhao, S. (2011). Adsorption and heterogeneous oxidation of As(III) on ferrihydrite. **Water Research**, **45**(19), 6496–6504.
- Zheng, Y.M., Yu, L., Wu, D., & Paul, C.J. (2012). Removal of arsenite from aqueous solution by a zirconia nanoparticle. **Chemical Engineering Journal**, **188**, 15–22.

- Zhou, J., Yu, X., Ding, C., Wang, Z., Zhou, Q., Pao, H. et al. (2011). Optimization of phenol degradation by *Candida tropicalis* Z-04 using Plackett-Burman design and response surface methodology. **Journal of Environmental Sciences**, **23**(1), 22–30.
- Zhuang, Y., Ahn, S., Seyfferth, A.L., Masue-Slowey, Y., Fendorf, S., & Luthy, R.G. (2011). Dehalogenation of polybrominated diphenyl ethers and polychlorinated biphenyl by bimetallic, impregnated, and nanoscale zerovalent iron. **Environmental Science & Technology**, **45**(11), 4896–4903.
- Zhu, H., Jia, Y., Wu, X., & Wang, H. (2009). Removal of arsenic from water by supported nano zero-valent iron on activated carbon. **Journal of Hazardous Materials**, **172**(2–3), 1591–1596.
- Zhu, K., Sun, C., Chen, H., Baig, S.A., Sheng, T., & Xu, X. (2013). Enhanced catalytic hydrodechlorination of 2,4-dichlorophenoxyacetic acid by nanoscale zero valent iron with electrochemical technique using a palladium/nickel foam electrode. **Chemical Engineering Journal**, **223**, 192–199.