

REFERENCES

- Adams, W. J., Biddinger, G. R., Robillard, K.A., Gorsuch, J.W. (1995). A summary of the acute toxicity of 14 phthalate esters to representative aquatic organisms, *Environ Toxicol Chem* 14, 1569–1574.
- Al-Harbi, L.M., Arafa, H.M., Shah, M.A., Mossalamy, E.H., Al-Owais, A. (2011). iO₂ Nanoparticles with Tetra-pad Shape prepared by an Economical and Safe Route at very low temperature, 5(3), 130–135.
- Amin, M.T., Alazba, A.A., Manzoor, U. (2014). A Review of removal of pollutants from water/ wastewater using different type of Nanomaterials, *Advances in Materials Science and Engineering*, 2014.
- Apak, R., Tutem, E., Hugul, M., Hizal, J. (1998). Heavy metal cation retention by unconventional sorbents (red muds and fly ashes), *Wat. Res*, 32, 430–440.
- ATSDR. (1995). Agency for Toxic Substances and Disease Registry. Toxicological profile for diethyl phthalate. <http://www.atsdr.cdc.gov/toxprofiles/tp73.pdf>. (accessed August 2018).
- ATSDR. (2002). Agency for Toxic Substances and Disease Registry: Toxicological profile for Di (2-ethylhexyl) phthalate (DEHP). <http://www.atsdr.cdc.gov/toxprofiles/tp9.pdf>. (accessed August 2018).
- Abidin, A.Z., Bakar, N.H.H., Bakar, A., Ng, E.P., Tan, W.L. (2017). Rapid Degradation of Methyl Orange by Ag doped zeolite X in the presence of Borohydride,
- Ayob, A., Abdullah, A.Z., (2012). Characterization of Polymer-Stabilized Nano Zero-valent Iron Particle by Ultrasonic Irradiation-assisted Method. *J. Polym. Mater.* 29, 167–179.

- Bagheri, S., Shameli, K., Hamid, S.B. (2012). Synthesis and characterization of anatase titanium dioxide nanoparticles using egg white solution via Sol-Gel method, *Journal of Chemistry*, Article ID 848205.
- Bastos, P.M., Haglund, P. (2012). The use of comprehensive two-dimensional gas chromatography and structure-activity modeling for screening and preliminary risk assessment of organic contaminants in soil, sediment, and surface water, *J Soils Sediments*, 12(7), 1079–1088.
- Bouma, k., Schakel, D.J. (2002). Migration of phthalates from PVC toys into saliva simulants by dynamic extraction, *Food Addit Contam*, 19(6), 602–610.
- Bauer, M.J., Herrmann, R. (1997). Estimation of the environmental contamination by phthalic acid esters leaching from household wastes, *Science of the Total Environment*, 208(1-2), 49–57.
- Bauer, M.J., Herrmann, R., Martin, A., Zellmann, H. (1998). Chemodynamics, transport behaviour and treatment of phthalic acid esters in municipal landfill leachates, *Water Sci. Technol.* 38, 185–192.
- Bautista-Toledo, I., Ferro-García, M.A., Rivera-Utrilla, J., Moreno-Castilla, C., Fernández, V. F.J. (2005). Bisphenol a removal from water by activated carbon. Effects of carbon characteristics and solution chemistry. *Environmental Science & Technology*, 39(16), 6246–6250.
- Bhattacharyya, A., Kawi, S., Ray, M.B. (2004). Photocatalytic degradation of Orange II by TiO₂ catalysts supported on adsorbents, *Catalysis today*, 98, 431–439.
- Biscardi, D., Monarca, S., Fusco, R.D., Senatore, F., Poli, P., Buschini, A. Rossi, C., Zani C. (2003). Evaluation of the migration of mutagens carcinogens from

PET bottles into mineral water by Tradescantia/micronuclei test, Comet assay on leukocytes and GC/MS, *Sci Total Environ*, 302, 101–108.

Bornehag, C., Sundell, J., Weschler, C. J., Sigsgaard, T., Lundgren, B., Hasselgren, M., Hägerhed-Engman, L. (2004). The association between asthma and allergic symptoms in children and phthalates in house dust: A nested case-control study, *Environmental Health Perspectives*, 112(14), 1393–1397.

Bosnir, J., Puntaric, D., Galic, A., Skes, I., Dijanic, T., Klaric, M., Grgic, M., Curkovic, M., Smit Z. (2006). Migration of phthalates from plastic containers into soft drinks and mineral water, *Food Technology Biotechnology*, 45, 91–95.

Burton, A.L., Ong, K., Rea, T., Chan, I.Y. (2009). On the estimation of average crystallite size of zeolites from the Scherrer equation: A critical evaluation of its application to Zeolites with one-dimensional pore systems, *Micropor Mesopor Mat*, 117(1-2), 75–90.

Calafat, A.M., Needham, L.L., Silva, M.J., Lambert, G. (2004). Exposure to Di-(2-Ethylhexyl) Phthalate Among Premature Neonates in a Neonatal Intensive Care Unit. *Pediatrics*. 113, 429–434.

Canadian Water Quality Guidelines for the Protection of Aquatic Life. (1999). Canadian Council of Ministers of the Environment, Winnipeg, Manitoba.

Cao, X.L. (2010). Phthalate esters in foods: sources, occurrence, and analytical methods. *Comprehensive Reviews in Food Science and Food Safety*, 9(1), 21–43.

Castillo, M., Barceló, D. (2000). Characterization of organic pollutants in textile wastewaters and landfill leachate by using toxicity-based fractionation

- methods followed by liquid and gas chromatography coupled to mass spectrometric detection, *Analytica Chimica Acta*, 426(2), 253–264.
- Cespedes, R., Lacorte, S., Raldua, D., Ginebreda, A., Barcelo, D., Pina, B. (2005). Distribution of endocrine disruptors in the Llobregat River basin (Catalonia, NE Spain), *Chemosphere*, 61(11), 1710–1719.
- Chatterjee, S., Karlovsky, P. (2010). Removal of the endocrine disrupter butyl benzyl phthalate from the environment. *Appl Microbiol Biotechnol*, 87, 61–73.
- Swan, S. H. (2008). Environmental phthalate exposure in relation to reproductive outcomes and other health endpoints in humans, *Environmental Research*, 108(2), 177–184.
- Chen, M.M., Sun, V., Qiao, Z.J., Ma, Q.Q., Wang, C.Y. (2014). Anatase-TiO₂ nanocoating of Li₄Ti₅O₁₂ nanorod anode for lithium-ion batteries, *Journal of Alloys and Compounds*, 601, 38–42.
- Chekli, L., Bayatsarmadi, B., Sekine, R., Sarkar, B., Maoz Shen, A., Scheckel, K.G., Skinner, W., Naidu, R., Shon, H.K., Lombi, E., Donner, E. (2016). Analytical characterisation of nanoscale zero-valent iron: a methodological review, *Anal. Chim. Acta*, 903, 13–35.
- Chung, Y., Chen, C. (2008). Degradation of Di-(2-ethylhexyl) phthalate (DEHP) by TiO₂ photocatalysis, *Water Air Soil Pollut*, 200, 191–198.
- Dargnat, C., Blanchard, M., Chevreuil, M., Teil, J. (2009). Occurrence of phthalate esters in the Seine River estuary (France), *Hydrological Processes*, 23(8), 192–201.
- DeFoe, L., Holcombe, G. W., Hammermeister, D. E., Beisinger, K. E. (1990). Solubility and toxicity of eight phthalate esters to four aquatic organisms, *Environ Toxicol. Chem*, 9, 623–636.

- Deng, F., Liu, Y., Luo, X., Wu, S., Luo, S., Au, C., Qi, R. (2014). Sol-hydrothermal synthesis of inorganic-framework molecularly imprinted TiO₂/SiO₂ nanocomposite and its preferential photocatalytic degradation towards target contaminant, *Hazards Materials*.
- D'Agata, A., Fasulo, S., Dallas, L.J., Fisher A.S., Maisano, M, Readman, J.M., Jha, A.N. (2014). Enhanced toxicity of bulk titanium dioxide compared to “fresh” and “aged” nano-TiO₂ in marine mussels (*Mytilus galloprovincialis*), *Nanotoxicology*, 8(5), 549–558.
- Earls, A.O., Axford, I.P., Braybrook, J.H. (2003). Gas chromatography-mass spectrometry determination of the migration of phthalate plasticizers from polyvinyl chloride toys and childcare articles, *J Chromatogr A*, 983 (1–2), 237–246.
- Edgren, D.E., Carpenter, H.A., Bhatti G.K., Ayer, A.D. (1990). Encinal Pharmaceutical investments LLC, US Patent No: US6217905, Patented May 07, 1990.
- Eijkkel, J. C. T. and Berg, A. (2005). Nanofluidics: what is it and what can we expect from it?, *Microfluidics and Nanofluidics*, 1(3), 249–267.
- Ejlertsson, J., Alnervik, M., Jonsson, S., Svensson, B.H. (1997). Influence of water solubility, side-chain degradability, and side-chain structure on the degradation of phthalic acid esters under methanogenic conditions, *Environ. Sci. Technol*, 31, 2761–2764.
- EPA Method 8061A, Phthalate esters by Gas Chromatography with Electron Capture Detection (GC/ECD) Available online:
<https://www.epa.gov/sites/production/files/2015-12/documents/8061a.pdf>
 (accessed on 10 August 2018).

- Erkekoglu, P., Zeybek, N. D., Giray, B. K., Rachidi, W., Kızılgün, M., Hininger-Favier, I., and Hincal, F. (2014). The effects of di(2-ethylhexyl)phthalate on rat liver in relation to selenium status, *International Journal of Experimental Pathology*, 95(1), 64–77.
- Fettig, J., Stapel, H., Steinert, C., Geiger, M. (1996). Treatment of landfill leachate by preozonation and adsorption in activated carbon columns, *Water Sci. Technol.*, 34, 33–40.
- Ferrarini, S.F., Cardoso, A.M., Paprocki, A., Pires, M.J.R. (2016). Intergrated Synthesis of Zeolite using Coal Fly Ash:Element distribution in the products, washing waters and effluent, *J.Braz.Chem.Soc.*
- Freundlich, H.M.F., 1906. Over the adsorption in solution, *J Phys Chem.* 57, 385–471.
- Fromme, H., Kuchler, T., Otto, T., Pilz, K., Muller, J., Wenzel, A. (2002). Occurrence of phthalates and bisphenol A and F in the environment. *Water Research*, 36(6), 1429–1438
- Fujimoto, M., Koyama, H., Konagai, M., Hosoi, Y., Ishihara, K., Ohnishi, S., Awaya, N. (2006) “TiO₂anatase nanolayer on TiN thin film exhibiting high-speed bipolar resistive switching,” *Applied Physics Letters*, 89, 22,223–509.
- Furtmarm, K., (1993). Phthalate in der Aquatischen Umwelt, Landesamt für Wasser, und AbfallNordrhein -Westfalen, Dusseldorf, 197 pp and Appendices.
- Gardy, J., Hassanpour, A., Lai, X., Ahmed, M.H., Rehan, M. (2017). Biodiesel Production from used cooking oil using a novel surface functionalized TiO₂ nano-catalyst, *Applied catalysis B: Environmental.* 207, 297–310.

- Guo, Y. G. Hu, Y.S., Sigle, W., Maier, J. (2007). Superior electrodeperformance of nanostructured mesoporous TiO_2 (Anatase)through efficient hierarchical mixed conducting networks, *Advanced Materials*, 19 (16), 2087–2091.
- Guo, Y., Kannan, K. (2012). Challenges encountered in the analysis of phthalate esters in foodstuff and other biological matrices, *Analytical and Bioanalytical Chemistry*, 404(9), 2539–2554.
- Hashizume, K., Nanya, J., Toda, C., Yasui, T., Nagano, H., Kojima, N. (2002). Phthalate esters detected in various water samples and biodegradation of the phthalates by microbes isolated from river water, *Biol Pharm Bull*, 25(2), 209–214.
- Hauser, R. and Calafat, A.M. (2005). Phthalates and Human Health, *Occupational and Environmental Medicine*, 62(11), 806–818.
- Hauser, R., Meeker, J. D., Singh, N. P., Silva, M. J., Ryan, L., Duty, S., Calafat, A. M. (2007). DNA damage in human sperm is related to urinary levels of phthalate monoester and oxidative metabolites, *Human Reproduction*, 22(3), 688–695.
- He, H., Hu, G., Sun, C., Chen, S., Yang, M., Li, J., Zhao, Y., Wang, H. (2010). Trace analysis of persistent toxic substances in the main stream of Jiangsu section of the Yangtze River, China, *Environ Sci Pollut R*, 18, 638–648.
- Heudorf, U., Sundermann, V. M., Angerer, J. (2007) Phthalates: Toxicology and Exposure. *International journal of hygiene and environmental health*, 210(5), 623–34.
- Ho, Y.S., McKray, G. (1999). Pseudo-second order model for sorption processes. *Process Biochemistry*. 34(5), 451–465.

- Holub.,M., Balintova, M., Demcak, S., Hurakova, M. (2016). Characterization of natural Zeolite and determination its adsorption properties, *JCEEA*, 63(3/16), 113–122.
- Hoppin, J. A., Ulmer, R., London, S. J. (2004). Phthalate exposure and pulmonary function, *Environmental Health Perspectives*, 112(5), 571–574.
- Houlihan, J., Brody, C., Schwan, B. (2002). Not too Pretty: Phthalates, Beauty products and the FDA. Environmental Working Group, Washington DC.
- Howard, P. H., Banerjee, S., Robillard, K. H. (1985). Measurement of water solubilities, octanol/water partition coefficients and vapor pressures of commercial phthalate esters, *Environ Toxicol Chem*, 4(5), 653–661.
- Huang, Z., Wu, P., Lu, Y., Wang, X., Xhu, N., Dang, Z. (2013). Enhancement of photocatalytic degradation of dimethyl phthalate with nano-TiO₂ immobilized onto hydrophobic layered double hydroxides: A mechanism study, *J Hazard Mater*, 246–247, 70–78.
- Ito, Y., Yamanoshita, O., Asaeda, N., Tagawa, Y., Lee, C.H., Aoyama T., Ichihara, G., Furuhashi, K., Kamijima, M., Gonzalez, F.J., Nakajima, T. (2007). Di (2-ethylhexyl) phthalate induces hepatic tumorigenesis through a peroxisome proliferator-activated Receptor α - independent Pathway, *J Occup Health*, 49, 172–182.
- Ijadpanah-Saravy, H., Safari, M., Khodadadi-Darban, A.A.R. (2014). Ezaei “Synthesis of Titanium Dioxide Nanoparticles for Photocatalytic Degradation of Cyanide in Wastewater, *Analytical letters*, 47, 1172–1782.
- Jobling, S., Reynolds, T., White, R., Parker, M.G., Sumpter, J.P. (1995). A variety of environmentally persistent chemicals, including some phthalate plasticizers, are weakly estrogenic, *Environ Health Perspectives*, 103(6), 582–587.



- Johns, L.E., Cooper, G.S., Galizia, A., Meeker, J.D. (2015). Exposure assessment issues in epidemiology studies of phthalates, *Environ Int*, 85, 27–39.
- Jones, H.A., Fla, O., Bushland, R.C. (1947). Pyrethrin and Dibenzyl phthalate insecticide. Patented Oct. 7, 1947, Patent No. 2428494.
- Jouni, J.K., Jaakkola, Knight, T.L. (2008). The role of exposure to phthalates from polyvinyl chloride products in the development of asthma and allergies: A systematic review and meta-analysis, *Environ Health Perspect*, 116, 845–853.
- Juneson, C., Ward, O.P. Singh, A. (2001) Biodegradation of bis (2-ethylhexyl) phthalate in a soil slurry-sequencing batch reactor Process, *Biochem*, 37, 305–313.
- Joseph, C.G., Puma, G. L., Bono, A., Krishnaiah, D. (2009). Sono photocatalysis in advanced oxidation process: a short review, *Ultrason. Sonochem.* 16. 583–589.
- Jianlong, W., Lujun, C., Hanchang, S., Yi, Q. (2000). Microbial degradation of phthalic acid esters under anaerobic digestion of sludge, *Chemosphere*, 41, 1245–1248.
- Kakavandi, B., Jonidi, A., Rezaei, R., Nasser, S., Ameri, A., Esrafiy, A. (2013). Synthesis and properties of Fe₃O₄-activated carbon magnetic nanoparticles for removal of aniline from aqueous solution: equilibrium, kinetic and thermodynamic studies, *Iranian Journal of Environmental Health Science & Engineering*, 10 (1).
- Kaneco, S., Katsumata, H., Suzuki, T., Ohta, K. (2006). Titanium dioxide mediated photocatalytic degradation of dibutyl phthalate in aqueous solution-kinetics, mineralization and reaction mechanism, *Chem Eng J*, 125, 59–66.

- Kargi, F., Pamukoglu, M.Y. (2004). Adsorbent supplemented biological treatment of pre-treated landfill leachate by fed-batch operation, *Bioresource technology*, 94 (3), 285–291.
- Keresztes, S., Tatar, E., Czegeny, Z., Zaray, G., Mihucz, V. G. (2013). Study on the leaching of phthalates from polyethylene terephthalate bottles into mineral water. *Sci Total Environment*, 458-460, 451–458.
- Kitchloo, P.V., Sallavanti, R.A., inventors, Gentex Optics, Inc, assignee, (2000). Infusion of dye using plasticizer. US patent US6719812B1.
- Koch, H. M., and Calafat, A. M. (2009). Human body burdens of chemicals used in plastic manufacture, *Philosophical Transactions of the Royal Society B: Biological Sciences*, 364(1526), 2063–2078.
- Kokotailo, G.T., Fyfe, C.A. (1995). Zeolite structure analysis with powder x-ray diffraction and solid-state nmr techniques, *Rigaku Journal*, 12 (1).
- Konieczni, D., Wang, R., Moody, R.P., Zhu, J. (2011). Phthalates in cosmetic and personal care products: Concentrations and possible dermal exposure. *Environ Res*, 111(3), 329–336.
- Lagergren, S., Kungliga Svenska Ventenskapsakademiens, S., Handlingar, Band, (1898). 24(4)
- Lai, Y., Tang, Y., Gong, J., Gong, D., Chi, L., Chen, Z., (2012). Transparent superhydrophobic/superhydrophilic TiO₂ based coatings for self-cleaning and anti-fogging, *Mater. Chem*, 22, 7420–7426.
- Langmuir, I. (1918). The adsorption of gases on plane surfaces of glass, mica and platinum, *J Am Chem Soc*. 40, 1361–1403.

- Latini, G., Felice, C.D., Presta, G., Vecchio, A.D., Paris, I., Ruggieri, F., Mazzeo, P. (2003). In utero exposure to di-(2-ethylhexyl) phthalates and duration of human pregnancy, *Environmental Health Perspectives*, 111(14), 1783–1785.
- Latini, G. (2005). Monitoring phthalate exposure in humans, *Clinica Chimica Acta*, 361(1), 20-29.
- Latini, G., Knipp, G., Mantovani, A., Macrovecchio, M.L., Chiarelli, F., Soder, O. (2010). Endocrine disruptors and human health, *Mini- Rev Med Chem*, 10, 1–10.
- Lee, B. M., and Koo, H. J. (2007). Hershberger assay for antiandrogenic effects of phthalates, *Journal of Toxicology and Environmental Health, Part A*, 70(15-16), 1365–1370.
- Lertsirisopon, R., Soda, S., Sei, K., Ike, M., 2009. Abiotic degradation of four phthalic acid esters in aqueous phase under natural sunlight irradiation. *J. Environ. Sci.* 21, 285–290.
- Lin, H., Ji, X., Chen, Q., Zhou, Y., Banks, C.E., Wu, K. (2009). Mesoporous-TiO₂ nanoparticles base carbon paste electrodes exhibit enhanced electrochemical sensitivity for phenols, *Electrochem. Commun*, 11, 1990–1995.
- Lippmann, D.C., Conn, G. (1942). Wearing apparel, Patented Oct. 24. 1942, Patent No: 2360953.
- Durdzinski, P.T., Dunant, C.F., Haha, M.B., Scrivener, K.L. (2015). A new quantification method based on SEM-EDX to assess fly ash composition and study the reaction of its individual components in hydrating cement phase, *Cement and concrete research*, 73, 111–122.

- Main, K. M., Mortensen, G. K., Kaleva, M. M., Boisen, K. A., Damgaard, I. N., Chellakooty, M., Skakkebæk, N. E. (2006). Human breast milk contamination with phthalates and alterations of endogenous reproductive hormones in infants three months of age, *Environmental Health Perspectives*, 114(2), 270–276.
- Manafi, S.S.A., Joughehdoust, S. (2008). Production of Zeolite using different methods, Iran international zeolite conference, Tehran-Iran.
- Masciangioli, T., and Zhang, W.X. (2003). Peer reviewed: environmental technologies at the nanoscale, *Environmental Science & Technology*, 37(5) 102A–108A.
- Meeker, J. D., Calafat, A. M., and Hauser, R. (2007). Di(2-ethylhexyl) phthalate metabolites may alter thyroid hormone levels in men, *Environmental Health Perspectives*, 115(7), 1029-1034.
- Metcalf, Eddy, Inc. Wastewater Engineering: Treatment, Disposal, and Reuse (third ed.), McGraw-Hill, New York (2003)
- Méndez-Díaz, J.D., Prados-Joya, G., Rivera-Utrilla, J., Leyva-Ramos, R., Sánchez-Polo, M., Ferro-García, M.A. Medellín-Castillo, N.A. (2010). Kinetic study of the adsorption of nitroimidazole antibiotics on activated carbons in aqueous phase, *J. Colloid Interface Sci.*, 345, 481–490.
- Mikula, P., Svobodova, Z., Smutna, M. (2005). Phthalates: Toxicology and food safety - a review, *Journal of food sciences*, 23(6), 217–223
- Mittermeier, A., Volkel, W., Fromme, H. (2016). Kinetics of the phthalate metabolites mono-2-ethylhexyl phthalate (MEHP) and mono-*n*-butyl phthalate (MnBP) in male subjects after a single oral dose, *Toxicol Lett*, 252, 22–28.

- Mozgawa, W., Krol, M., Bajda, T., (2011). IR spectra in the studies of anion sorption on natural sorbents, *Journal of Molecular Structure*, 993 (1), 109–114.
- Nakamura, R., Imanishi, A., Murakoshi, K., Nakato, Y. (2002). In Situ FTIR Studies of Primary Intermediates of Photocatalytic Reactions on Nanocrystalline TiO₂ Films in Contact with Aqueous Solutions, *JACS Articles*. 125, 7443–7450.
- Olujimi, O.O., Fatoki, O.S., Odendaal, J.P., Daso, A.P. (2012). Chemical monitoring and temporal variation in levels of endocrine disrupting chemicals (priority phenols and phthalate esters) from selected wastewater treatment plant and freshwater systems in Republic of South Africa, *Microchem J*, 101, 11–23.
- Osipoff, R.J., Hutzler, N.J., Crittenden, J.C. (1981). Interaction of Specific Organic Chemicals Percolating through a Soil. Proceedings of the 35th Industrial Waste Conference. May 13-15, Purdue University 35:17–23.
- Oh, B.S., Jung, Y.J., Oh, Y.J., Yoo, Y.S., Kang, J., 2006. Application of ozone, UV and ozone/UV processes to reduce diethyl phthalate and its estrogenic activity, *Sci. Total Environ*. 367, 681–693.
- Palcheva, R., Dimitrov, L., Tyuliev, G., Spojakina, A., Jiratova, K. (2013). TiO₂nanotubes supported NiW hydrodesulphurizationcatalysts: characterization and activity, *Applied Surface Science*, 265, 309–316.
- Paluselli, A., Fauvelle, V., Schmidt, N., Galgani, F., Net. S., Sempéré, R. (2018). Distribution of phthalates in Marseille Bay (NW Mediterranean Sea), *Sci Total Environ*, 621, 578–587.
- Pant, N., Pant, A., Shukla, M., Mathur, N., Gupta, Y., Saxena, D. (2011). Environmental and experimental exposure of phthalate esters: The

- toxicological consequence on human sperm, *Hum Exp Toxicol*, 30(6), 507–514.
- Peijnenburg, W.J.G.M., Struijs, J. (2006). Occurrence of phthalate esters in the environment of the Netherlands, *Ecotoxicology and Environmental Safety*, 63(2), 204–215.
- Pereira, C., Mapuskar, K., Rao, C.V. (2006). Chronic toxicity of diethyl phthalate in male Wistar rats-A dose- response study, *Regul Toxicol Pharm*, 45, 169–177.
- 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, *J Hazard Mater*. 193, 70–81.
- Radovic, L.R., Moreno-Castilla, C., Rivera-Utrilla, J. (2001). Carbon materials as adsorbents in aqueous solutions, *Chem. Phys. Carbon*, 27, 227–405.
- Rance, G. A., Marsh, D. H., Bourne, S. J., Reade, Khlobystov, A.N. (2010). Van-der Waals Interactions between Nanotubes and Nanoparticles for Controlled Assembly of Composite Nanostructures, *ACS Nano*, 4, 4920–4928.
- Regueiro, J., Liompart, M., Garcia-Jares, C., Garcia-Monteagudo, J.C., Cela, R., (2008). Ultrasound-assisted emulsification–microextraction of emergent contaminants and pesticides in environmental waters, *J. Chromatogr A*, 1190, 27–38.
- Reynolds, P.A., inventor, Eco Solutions Ltd., assignee, (1995). Aqueous composition for plasticizing paint prior to strip. US patent US6468952B1.
- Ritsema, R., Cofino, W. P., Frintrop, P. C. M., Brinkman, U. A. (1989). Trace-Level Analysis of Phthalate Esters in surface water and suspended particulate

- matter by means of capillary gas chromatography with electron capture and mass selective detection, *Chemosphere*, 18, 2161–2175.
- Rivera-Utrilla, J., Prados-Joya, G., Sánchez-Polo, M., Ferro-García, M.A., Bautista-Toledo, I. (2009). Removal of nitroimidazole antibiotics from aqueous solution by adsorption/bioadsorption on activated carbon, *J. Hazard. Mater.*, 170, 298–305.
- Rodgers, K.M., Rudel, R.A., Just, A.C. (2014). Phthalates in food packaging, consumer products, and indoor environments, in: Snedeker, S.M. (Ed.), *Toxicants in Food Packaging and Household Plastics, Molecular and Integrative Toxicology*. Springer-Verlag, London, 31–59.
- Roslev, P., Vorkamp, K., Aarup, J., Frederiksen, K., Nielsen, P.H. (2007). Degradation of phthalate esters in an activated sludge wastewater treatment plant, *Water Res.*, 41, 969–976.
- Rudel, R. A., Gray, J. M., Engel, C. L., Rawsthorne, T. W., Dodson, R. E., Ackerman, J. M., Brody, J. G. (2011). Food Packaging and Bisphenol A and Bis(2-Ethyhexyl) Phthalate Exposure: Findings from a Dietary Intervention, *Environmental Health Perspectives*, 119(7), 914–920.
- Russell, D.J., McDuffie, B. (1986). Chemo dynamic Properties of Phthalates: Partitioning and Soil Mimation, *Chemosphere*, 15, 1003–1021.
- Salim, C.J., Liu, H., Kennedy, J.F. (2010). Comparative study of the adsorption on chitosan beads of phthalate esters and their degradation products. *Carbohydr. Polym.* 81, 640–644.
- Sánchez-Avila, J., Fernandez-Sanjuan, M., Vicente, J., Lacorte, S. (2011). Development of a multi residue method for the determination of organic

- micro pollutants in water, sediment and mussels using gas chromatography–tandem mass spectrometry, *J Chromatogr A*, 1218, 6799–6811.
- Schechter, A., Lorber, M., Guo, Y., Wu, Q., Yun, S. H., Kannan, K., Birnbaum, L. S. (2013). Phthalate concentrations and dietary exposure from food purchased in New York State, *Environmental health perspectives*, 121(4), 473–479.
- Schettler, T. (2006). Human exposure to phthalates via consumer products, *International Journal of Andrology*, 29(1), 134–139
- Schripp, T., Salthammer, T., Fauck, C., Beko, G., Weschler, C.J. (2014). Latex paint as a delivery vehicle for diethylphthalate and di-n-butylphthalate: predictable boundary layer concentrations and emission rates, *Science of the Total Environment*, 494-495, 299–305.
- Sekizawa, J., Dobson, S., Touch, R. J. (2003). Diethyl phthalate. Geneva: World Health Organization.
- Sello, G., Bernasconi, S., Orsini, F., Tansi, M., Galli, E., Gennaro, P.D. Bestetti, G. (2004). Organic phase effect in the biphasic bioconversion of substituted naphthalenes by engineered *E. coli* containing *P. fluorescens* N₃ dioxygenase. *J. Mol. Cat. B*, 29, 181–186.
- Shen, X., Zhu, L., Huang, C., Tang, H., Yu, Z., Deng, F. (2009). Inorganic molecular imprinted titanium dioxide photocatalyst: synthesis, characterization and its application for efficient and selective degradation of phthalate esters, *J Mater Chem*, 19, 4843–4851.
- Skrzypek, J., Lachowska, M., Kulawska, M., and Moroz, H. (2008). Synthesis of bis(2-ethylhexyl) phthalate over methane sulfonic acid catalyst. kinetic investigations, *Reaction Kinetics and Catalysis Letters*, 93(2), 281–286.

- Sorathiya, K., Mishra, B., Kalarikka, A., Prabhakar, K., Chinnakonda, R., Gopinath, S., Khushalani, D. (2016).” Enhancement in Rate of Photocatalysis Upon Catalyst Recycling,” *Scientific reports*.
- Stahlhut, R. W., Wijngaarden, E. V., Dye, T. D., Cook, S., and Swan, S. H. (2007). Concentrations of urinary phthalate metabolites are associated with increased waist circumference and insulin resistance in adult US males, *Environmental health perspectives*, 115(6), 876–882.
- Staples C.A., Parkerton T.F., Peterson D.R. (2000). A risk assessment of selected phthalate esters in North American and Western European surface waters, *Chemosphere*, 40(8):885–891
- Staples, C.A., Peterson, D.R., Parkerton, T.F., Adams, W.J. (1997). The environment fate of phthalate esters: A literature review, *Chemosphere*, 35(4), 667–749.
- Stringer, R., Labunska, I., Santillo, D., Johnston, P., Siddorn, J., Stephenson, A. (2000). Concentration of phthalate esters and identification of other additives in PVC children’s toys, *Environmental Science and Pollution Research*, 7(1), 27–36.
- Sun, G., Liu, K. (2017). Developmental toxicity and cardiac effects of butyl benzyl phthalate in zebrafish embryos, *Aquat Toxicol*, 192, 165–170.
- Swan, S. H. (2008). Environmental phthalate exposure in relation to reproductive outcomes and other health endpoints in humans, *Environmental Research*, 108(2), 177–184.
- Thomsen, M., Carlsen, L., Hvidt, S. (2001). Solubilities and surface activities of phthalates investigated by surface tension measurements, *Environ. Toxicol. Chem.* 20, 127–132.

- Timmusk, S., Seisenbaeva, G., Behers, L. (2017). Titania (TiO₂) nanoparticles enhance the performance of growth-promoting rhizobacteria, 8.
- Thamaphat, K., Limsuwan, P., Ngotawornchai, B. (2008). Phase Characterization of TiO₂ Powder by XRD and TEM, *Nat. Sci.* 42, 357–361.
- Turner, A., Rawling, M.C. (2001). The influence of salting out on the sorption of neutral organic compounds in estuaries, *Water Res.* 35(18), 4379–4389.
- Ventrice, P., Ventrice, D., Russo, E., Sarro, G.D. (2013). Phthalates: European regulation, chemistry, pharmacokinetic and related toxicity, *Environ Toxicol Phar.* 36, 88–96.
- Wallner, P., Kundi, M., Hohenblum, P., Scharf, S., Hutter, H. (2016). Phthalates Metabolites, Consumer Habits and Health Effects, *Int J Environ Res Public Health*, 13, 717.
- Wang, J., Liu, P., Shi, H., Qian, Y., 1997. Kinetics of phthalic acid ester degradation by acclimated activated sludge, *Process Biochem.* 32, 567–571.
- Wang, F., Xia, X., Sha, Y. (2007). Distribution of phthalic acid esters in Wuhan section of the Yangtze River, China, *J. Hazard. Mater.* 154, 317–324.
- Weber, T.W., Chakravorti, R.K., 1974. Pore and solid diffusion models for fixed bed adsorbers, *Ai Che J.* 20, 228–238.
- Wei, X., Shi, Y., Fei, Y., Chen, J., Lv, B., Chen, Y., Zheng, H., Shen, J., Zhu, L. (2017). Removal of trace phthalate esters from water by thin-film composite nanofiltration hollow fiber membranes, *Chem Eng J.* 292, 382–388.

- Wen, G., Ma, J., Liu, Z., Zhao, L. (2011). Ozonation kinetics for the degradation of phthalate esters in water and the reduction of toxicity in the process of O_3/H_2O_2 , *J. Hazard. Mater.* 195, 371–377.
- Wen, Z., Huang, X., Gao, D., Liu, G., Fang, C., Shang, Y., Du, J., Lv, L., Song, K. (2018). Phthalate esters in surface water of Songhua river watershed associated with land use types, Northeast China, *Environ Sci Pollut R*, 25, 7688–7698.
- Wentzel, R.S., LaPoint, T.W., Simini, M., Checkail, R.T., Ludwig, D., Brewer, L. (1996). Tri-service Procedural Guidelines for Ecological Risk Assessment. US Army Edgewood Research, Development, and Engineering Center, Aberdeen Proving Ground, MD
- Wolfe, N.L., Bums, L.A., Steen. W.C. (1980). Use of Linear Free Energy Relationships and an Evaluative Model to Assess the Fate and Transport of Phthalate Esters in the Aquatic Environment, *Chemosphere*, 9, 393–402.
- Wittassek, M., Koch, H. M., Angerer, J., Brüning, T. (2011). Assessing exposure to phthalates - The human biomonitoring approach, *Molecular Nutrition and Food Research*, 55 (1), 7–31.
- Wormuth, M., Scheringer, M., Vollenweider, M., Hungerbühler, K. (2006). What Are the Sources of Exposure to Eight Frequently Used Phthalic Acid Esters in Europeans?, *Risk Analysis*, 26(3), 803–824.
- Wong, C. C., Chu, W. (2003). The direct photolysis and photocatalytic degradation of alachlor at different TiO_2 and UV sources, *Chemosphere*, 50, 981–987.
- Wu, D., Mahmood, Q., Wu, L., Zheng, P. (2008). Activated sludge-mediated biodegradation of dimethyl phthalate under fermentative conditions, *J. Environ. Sci*, 20, 922–926.

- Wu, Q., Liu, M., Ma, X., Wang, W., Wang, C., Zang, X., Wang, Zhi. (2012). Extraction of phthalate esters from water and beverages using a grapheme-based magnetic nanocomposite prior to their determination by HPLC, *Microchimacta*, 177, 23–30.
- Wu, W., Hu, J., Wang, J., Chen, X., Yao, N., Tao, J., Zhou, Y.K. (2015). Analysis of phthalates esters in soil near and electronic manufacturing facility and from a non-industrialized area by gas purge micro syringe extraction and gas chromatography, *Sci Total Environment*, 508, 445–451.
- Wypych, G. (2004). *Plasticizers use and selection for specific polymers*. Chem Tec Publishing: Toronto, Canada.
Retrieved from
[http://books.google.com/books?hl=en&id=EHhoakl6cvoC&oi=fnd&pg=PA273&dq=%22least+8+phr+are+needed+to+meet+typical+flame+resistance+requirements.+The%22+%22increase+in+melt+flow+index+over+control+\(no%22+%22soft+and+would+not+perform+its+protective+functions.+This+requires+that+the%22+andots=pW5VlkOn+randsig=qtMyhjVLyanx8BuUlfWrpmSD-ag](http://books.google.com/books?hl=en&id=EHhoakl6cvoC&oi=fnd&pg=PA273&dq=%22least+8+phr+are+needed+to+meet+typical+flame+resistance+requirements.+The%22+%22increase+in+melt+flow+index+over+control+(no%22+%22soft+and+would+not+perform+its+protective+functions.+This+requires+that+the%22+andots=pW5VlkOn+randsig=qtMyhjVLyanx8BuUlfWrpmSD-ag)
- Xu, X., Li, X. (2008). Adsorption behavior of dibutyl phthalate on marine sediments. *Mar Pollut Bull*, 57, 403–408.
- Xu, J., Li, K., Shi, W., Li, R., Peng, T. (2014). Rice-like brookite titania as an efficient scattering layer for nanosized anatase titania film based dye-sensitized solar cells, *Journal of Power Sources*, 260, 233–242.
- Xu, X., Li, X. (2009). Sorption behavior of benzyl butyl phthalate on marine sediments: Equilibrium assessments, effects of organic carbon content, temperature and salinity, *Mar Chem*, 115, 66–71.

- Xu, X.R., Li, H.B., Gu, J.D. (2005). Biodegradation of an endocrine-disrupting chemical di-n-butyl phthalate ester by *Pseudomonas fluorescens* B-1. *Int. Biodeter.* 55, 9–15.
- Yang, C.Z., Yaniger, S.I., Jordan, V.C., Klein, D.J., Bittner, G.D. (2011). Most plastic products release estrogenic chemicals: a potential health problem that can be solved, *Environmental Health Perspective*, 119(7), 989–996.
- Yang, C., Zhang, M., Dong, W., Cui, G., Ren, Z., Wang, W. (2017). Highly efficient photocatalytic degradation of methylene blue by PoPD/TiO₂nanocomposite, *Journal pone*.
- Yang, T.C., Peterson, K.E., Meeker, J.D., Sanchez, B.N., Zhang, Z., Cantoral, A., Solano, M., Tellez-Rojo, M.M. (2017). Bisphenol A and phthalates in utero and in childhood: association with child BMI z-score and adiposity, *Environ res*, 156, 326–333.
- Yin, L., Lin, Y., Jia, L. (2014). Graphene oxide functionalized magnetic nanoparticles as adsorbents for removal of phthalate esters, *Microchim Acta*, 181, 957–965.
- Yuan, S.Y., Liu, C., Liao, C.S., Chang, B.V. (2002). Occurrence and microbial degradation of PAEs esters in Taiwan river sediments, *Chemosphere*, 49(10), 1295–1299.
- Zamora, R.M.R., Moreno, A.D., Velásquez, M.T.O.D., Ramirez, I.M. (2000). Treatment of landfill leachates by comparing advanced oxidation and coagulation–flocculation processes coupled with activated carbon adsorption, *Water Sci. Technol*, 41, 231-235.

- Zeng, F., Cui, K., Li, X., Fu, J., Sheng, G., 2004. Biodegradation kinetics of phthalate esters by *Pseudomonas fluorescens* FS1, *Process Biochem*, 39, 1125–1129.
- Zia, A.I., Rahman, M.S.A., Mukhopadhyay, S.C., Yu, P., Al-Bahadly, I.H., Gooneratne, C.P., Kosel, J., Liao, T. (2013). Technique for rapid detection of phthalates in water and beverages, *J Food Eng*, 116, 515–523.
- Zhang, C., Wang, Y. (2009). Removal of dissolved organic matter and phthalic acid esters from landfill leachate through a complexation–flocculation process, *Waste Manage*, 29, 110–116
- Zhang, Y. H., Zheng, L. X., and Chen, B. H. (2006). Phthalate exposure and human semen quality in Shanghai: a cross-sectional study, *Biomedical and environmental sciences: BES*, 19 (3), 205–209.
- Zheng, R., Wang, W., Shi, X., Yu, X., Li, M., Xiao, L., Cui, Y. (2011). Health risk of semi-volatile organic pollutants in Wujin river inflow into Taihu Lake, *Ecotoxicology*, 20, 1083–1089.
- Zheng, Z., Zhang, H., He, P. L. Shao, Y., Chen, Pang, L. (2009). Co-removal of phthalic acid esters with dissolved organic matter from landfill leachate by coagulation and flocculation process, *Chemosphere*, 75, 180–186.

