

## REFERENCES

- Aloko, D. F. and Adebayo, G. A., 2007, "Production and Characterization of Activated Carbon from Agricultural Waste (Rice-husk and corn-cob)", **Journal of Engineering and Applied Sciences**, Vol. 2, pp. 440-444.
- Atkinson, T., 2007, "A review of the Role of Benzene Metabolites and Mechanisms in Malignant Transformation: Summative Evidence for a Lack of Research in Non-myelogenous Cancer Types", **International Journal of Hygiene and Environmental Health**, Vol. 212, pp. 1–10.
- Auria, R., Morales, M., Acuna, M. E., Perez, F., and Revah, S., 1996, "Biofiltration of Toluene Vapors: Startup and Gaseous Ammonia Addition", In: **ProcConf Biofiltration: an Air Pollution Control Technology**, USC, LA, pp. 134–141.
- Bagnéris C., Cammack, R., and Mason, J. R., 2004, "Subtle Difference between Benzene and Toluene Dioxygenases of *Pseudomonas putida*", **Applied and Environmental Microbiology**, pp 1570–1580.
- Barona, A., Elias, A., Arias, R., Cano, I., and Gonzalez, R., 2004, "Biofilter Response to Gradual and Sudden Variations in Operating Conditions". **Biochemical Engineering Journal**, Vol. 22, pp. 25–31.
- Beck, K. R. and Moore, L. G., 1997, "Extraction of Cotton Impurities: Supercritical CO<sub>2</sub> vs. SoxhleVTCE". **Textile Chemist and Colorist**, Vol. 29, pp. 88-70.
- Bohn, H. L., 1992, "Considering Biofiltration for Decontaminating Gases", **Chemical engineering progress**, Vol. 88, pp. 34–40.
- Bouchez, M., Blanchet, D., and Vandecasteele, J. P., 1995, "Degradation of Polycyclic Aromatic Hydrocarbons by Pure Strains and by Defined Strain Associations: Inhibition Phenomena and Cometabolism", **Applied Microbiology and Biotechnology**, Vol. 43, pp. 156-164.
- Caron Link, **Properties of Activated Carbon** [Online]. Available: <http://www.activated-carbon.com/1-3.html> (10-01-2011).
- Chablain, P. A., Zgoda, A. L., Sarde, C. O., and Truffaut, N., 2001, "Genetic and Molecular Organization of the Alkylbenzene Catabolism Operon in the Psychrotrophic Strain *Pseudomonas putida* 01G3", **Applied and Environmental Microbiology**, Vol. 67, pp. 453.
- Canadian Environmental Protection Act, 1999, **Part VII Controlling Pollution and Managing Wastes: Division 4 (Fuels)**, pp. 33.

Choi E. N., Cho, M. C., Kim, Y., Kim, C., and Lee, K., 2003, "Expansion of Growth Substrate Range in *Pseudomonas putida* F1 by Mutations in Both cymR and todS, Which Recruit a Ring-fission Hydrolase CmtE and Induce the tod Catabolic Operon, respectively", **Microbiology**, Vol. 149, pp. 795–805.

Clark, O. G., Edeogu, I., Feddes, J., Coleman, R. N., and Abolghasemi. A., 2004, "Effects of Operating Temperature and Supplemental Nutrients in a Pilot • Scale Agricultural Biofilter", **Canadian Biosystems Engineering**, Vol. 46, pp. 6.7-6.16.

Costura, R. K. and Alvarez, P. J. J., 2000, "Expression and Longevity of Toluene Dioxygenase in *Pseudomonas putida* F1 Induced at Different Dissolved Oxygen Concentrations", **Water Research**, Vol. 34, pp. 3014-3018.

Devinny, J. S., Deshusses, M. A., and Webster, T. S., 1999, **Biofiltration for Air Pollution Control**, Lewis, Boca Raton.

Edwards, E. A. and Grbic'-Galic', D., 1992, "Complete Mineralization of Benzene by Aquifer Microorganisms under Strictly Anaerobic Conditions". **Applied Environmental Microbiology**, Vol. 58, pp. 2663-2666.

Edwards, E. A., Wills, L. E., Reinhard, M., and Grbic-Galic, D., 1992, "Anaerobic Degradationof Toluene and Xylene by Aquifer Microorganisms under Sulfate-Reducing Conditions". **Applied Environmental Microbiology**, Vol. 58, pp. 794-800.

Edwards, E. A. and Gribic-Galic, D., 1994, "Anaerobic Degradation of Toluene and o-Xylene by a Methanogenic Consortium". **Applied Environmental Microbiology**, Vol. 60, pp. 313–322.

Collins, C. D., Bell, J. N. B., and Crews, C., 2000, "Benzene Accumulation in Horticultural Crops". **Chemosphere**, Vol. 40, pp. 109-114.

Devinny, J. S., Deshusses, M. A., and Webster, T. S., 1999, "Biofiltration for Air Pollution Control". **CRC press. California**, pp. 6-258.

Gibson, D. T., Koch, J. R., and Kallio, R. E., 1968, "Oxidative Degradation of Aromatic Hydrocarbons by Microorganisms. I. Enzymatic Formation of Catechol from Benzene". **Biochemistry**, Vol. 7, pp. 2653–2662.

Gibson, D. T. and Parales, R. E., 2000, "Aromatic Hydrocarbon Dioxygenases in Environmental Biotechnology", **Current Opinion in Biotechnology**, Vol. 11, pp. 236–243.

Gorna-Binkul, A., Keymeulen, R., Van Langenhove, and H., Buszewski, B., 1996, "Determination of Monocyclic Aromatic Hydrocarbons in Fruit and Vegetables by Gas

- Chromatography-mass Spectrometry". **Journal of Chromatography A**, Vol. 734, pp. 297-302.
- Harwood, C. S., 1989, "A Methyl-Accepting Protein is Involved in Benzoate Taxis in *Pseudomonas putida*". **Journal of Bacteriology**, Vol. 171, pp. 4603-4608.
- Harwood, C. S., Parales, R. E., Dispensa, M., 1990, "Chemotaxis of *Pseudomonas putida* Toward Chlorinated Benzoates". **Applied Environmental Microbiology**, Vol. 56, pp. 1501-1503.
- Heald, S. C. and Jenkins, R. O., 1996, "Expression and Substrate Specificity of the Toluene Dioxygenase of *Pseudomonas putida* NCIMB 11767". **Applied Microbiology and Biotechnology**, Vol. 45, pp. 56-62.
- Hodge, D. S., Medina, V. F., Islander, R. L., and Devinny, J. S., 1991, "Treatment of Hydrocarbon Fuel Vapors in Biofilters". **Environmental Technology**, Vol. 12, pp. 655-662.
- Hoerr, C. W. and Ralstok, W., 1944, "The Solubilities of the Normal Saturated Fatty Acids", **the Journal of Organic Chemistry**, Vol. 09, pp. 329-337.
- Juteau, P., Beaudet, R., McSween, G., Lépine, F., and Bisailon, J. G., 1996, "Study of the Reductive Dechlorination of Pentachlorophenol by a Methanogenic Consortium", **Canadian Journal of Microbiology**, Vol. 41, pp. 862-868.
- Kamath, R., Rentz, J. A., Schnoor, J. L., and Alvarez, P. J. J., 2004, "Phytoremediation of Hydrocarbon-Contaminated Soils: Principles and Applications", **Vazquez-Duhalt, R. and Quintero-Ramirez, R., eds. Studies in Surface Science and Catalysis**. Elsevier, Amsterdam, pp. 447-478.
- Kenesá, C., Wuá, W. M., Bhatnagar, L., and Zeikus, J. G., 1996, "Anaerobic Dechlorination and Mineralization of Pentachlorophenol and 2,4,6-Trichlorophenol by Methanogenic Pentachlorophenol Degrading Granules", **Applied Microbiology and Biotechnology**, Vol. 44, pp. 801-806.
- Kermani, K., Pourmoghaddas, H., Bina, B., and Khazaei, Z., 2006, "Removal of Phenol from Aqueous Solutions by Rice Husk Ash and Activated Carbon", **Pakistan Journal of Biological Sciences**, Vol. 9, pp. 1905-1910.
- Kinney, K. A., Chang, D. P. Y., Schroeder, E. D., and Scow, K. M., 1996. "Performance of a Directionally-Switching Biofilter Treating Toluene Contaminated Air", **Proc 89th Annu Meet Exhibition Air and Waste Management Association**, Nashville.
- Knoll, G. and Winter, J., 1987. "Anaerobic Degradation of Phenol in Sewage Sludge: Benzoate Formation from Phenol and Carbon Dioxide in the Presence of Hydrogen", **Applied Microbiology and Biotechnology**, Vol. 25, pp. 384-391.

- Knoll, G. and Winter, J., 1989. "Degradation of Phenol via Carboxylation to Benzoate by a Defined, Obligate Syntrophic Consortium of Anaerobic Bacteria", **Applied and Environmental Microbiology**, Vol. 30, pp. 318–324.
- Kobayashi, T., Hashinaga, T., Mikami, E., and Suzuki, T., 1989. "Methanogenic Degradation of Phenol and Benzoate in Acclimated Sludges". **Water science and technology**, Vol. 21, pp. 55–65.
- Kragelund, L. and Nybroe, O., 1994. "Culturability and Expression of Outer Membrane Proteins during Carbon, Nitrogen, or Phosphorus Starvation of *Pseudomonas fluorescens* DF57 and *Pseudomonas putida* DF14", **Applied and Environmental Microbiology**, Vol. 60, pp. 2944-2948.
- Kvesitadze, G., and Kvesitadze, E., 2009. "Potential of Higher Plants as Environmental Remediaters", **Bulletin of the Georgian National Academy of Sciences**, Vol. 175.
- Kvesitadze, E., Sadunishvili, T., and Kvesitadze, G., 2009, "Mechanisms of organic Contaminants Uptake and Degradation in Plants", **Engineering and technology**, Vol. 55, pp. 458-468.
- Kylin, H., Grimvall, E., and Ostman, C., 1994. "Environmental Monitoring of Polychlorinated Biphenyls using Pine Needles as Passive Samples", **Environmental Science and Technology**, Vol. 28, pp. 1320-1324.
- Leson, G. and winter A. M., 1991, "Biofiltration: an Innovative Air Pollution Control Technology for VOC Emissions", **Journal of the Air and Waste Management Association**, Vol. 41, pp. 1045–1054.
- Liu, Y., Mu, Y., Zhu, Y., Ding, H., and Arens, N., 2007. "Which Ornamental Plant Species Effectively Remove Benzene from Indoor Air?", **Atmospheric Environment**, Vol. 41, pp. 650–654.
- Marsh, A., 1994, "Biofiltration for Emission Abatement", **European Coatings Journal**, Vol. 7, pp. 528–536.
- McMurry J., 2003, "**Fundamentals of Organic Chemistry (Fifth ed.)**", Agnus McDonald, 409, ISBN 0-534-39573-2.
- Michel P., **Adsorption** [Online], <http://perso.limsi.fr/mpons/indexENG.html>, 09/2008.
- Morgenroth, E., Schoreder, E. D., Chang D. P. Y., and Scow, K. M., 1996, "Nutrient Limitation in a Compost Biofilter Degradation Hexane", **Journal of the Air and Waste Management Association**, Vol. 46, pp. 300-308.

Morsen, A. and Rehm, H. J., 1987, "Degradation of Phenol by a Mixed Culture of *Pseudomonas putida* and *Cryptococcus elinovi* Adsorbed on Activated Carbon", **Applied Microbiology and Biotechnology**, Vol. 26, pp. 283-288.

Orwell, R. L., Wood, R., Tarran, J., Torpy, F., and Burchett, M., 2004. **Removal of Benzene by the Indoor Plants/ Substrate Microcosm and Implications for Air Quality.** **Plants and Environmental Quality Group**, Faculty of Science, University of Technology, Sydney, Westbourne St, Gore Hill, NSW 2065, Australia.

Ottengraf, S. P. P., Meesters, J. J. P., Van Den Oever, A. H. C., and Rozema, H. R., 1986, "Biological Elimination of Volatile Xenobiotic Compounds Using Biofilters", **Bioprocess Eng.**, Vol. 1, pp. 61.

Parales, R. E., Ditty, J. L., and Harwood, C. S., 2000, "Toluene -Degrading Bacteria are Chemotactic towards the Environmental Pollutants Benzene, Toluene, and Trichloroethylene", **Applied and Environmental Microbiology**, Vol. 66, pp. 4098.

Poborski, P., 1988, "Pollutant Penetration through the Cuticle". In " Air Pollution and Plant Metabolism", S. Schulte-Hostede et al. (Eds.), **Elsevier**, London, UK, 19-35.

Pollution Control Department, 2007, **"Development of Environmental and Emission Standards of Volatile Organic Compounds (VOCs) in Thailand"**, Bangkok, Thailand.

Rahul, Mathur, A. K., and Balomajumder, C., 2013, "Biological Treatment and Modeling Aspect of BTEX Abatement Process in a Biofilter", **Bioresource Technology**, Vol. 142, pp. 9–17.

Ramírez, C., Adelung, R., Kunz, R., Kipp, L., and Schattke, W., 2005, "Lithium Adsorption by TiSe<sub>2</sub> of Varying Concentration via Density Functional Theory", **Physical Review B**, Vol. 71, pp. 035426.

Rappaport, S. M., Kim, S., Thomas, R., Johnson, B. A., Bois, F. Y., and Kupper, L. L., 2013, "Low-Dose Metabolism of Benzene in Humans: Science and Obfuscation", **Carcinogenesis**, Vol. 34, pp. 2-9.

Reardon, K. F., Mosteller, D. C., and Bull Rogers, J. D., 2000, "Biodegradation Kinetics of Benzene, Toluene, and Phenol as Single and Mixed Substrates for *Pseudomonas putida* F1", **Biotechnology and bioengineering**, Vol. 69, pp. 385-400.

Ribera, R. G., 2001, "Production of Poly-hydroxyal kanoates by *Pseudomonas putida* KT2442 Harbouring pSK2665 in Wastewater from Olive Oil Mills (alpechín)", **Electronic Journal of Biotechnology**, Vol. 4.

Riederer, M., 1990, Estimating Partitioning and Transport of Organic Chemicals in the Foliage Atmosphere System-Discussion of a Fugacity-Based Model. **Environmental Science and Technology**, Vol. 24, pp. 829-937.

Rozwadowski, M. and Wojsz R., 1987, Microporous Adsorbent Sieve Effect on Thermodynamic Functions for State of Perturbation in Adsorbed Molecules, **Journal of Inclusion Phenomena**, Vol. 5, pp. 297-305.

Sapref, (ND). **Oil Refining**, <http://www.sapref.com/about/WhatWeDo>.

Sato, M., 1966, "Metabolism of Phenolic Substances by the Chloroplasts. II. Conversion by the Isolated Chloroplasts of p-Coumaric Acid to Caffeic Acid", **Phytochemistry**, Vol. 5, pp. 385–389.

Schnatter, A., Rosamili, K., and Wojcik, N., 2005, "Review of the Literature on Benzene Exposure and Leukemia Subtypes", **Chemico-Biological Interactions**, Vol. 153-154, pp. 9-21.

Scienclab, 2001, **Benzene**. <http://www.scienclab.com/msds.php?msdsId=9927339>.

Sechneska, M., Tomova, N., and Dechev, G., 1968, "Ascorbate Oxidase Activity of Spinach Chloroplasts", **Comptes Rendus de Academie Bulgare des Sciences**, Vol. 21, pp. 277-280.

Shields, M. S., Montgomery, S. O., Chapman, P. J., Cuskey, S. M., and Pritchard, P. H., 1989, "Novel Pathway of Toluene Catabolism in Trichloroethylene-Degrading Bacterium G4", **Applied and Environmental Microbiology**, Vol. 55, pp. 1624-1629.

Shimko, I. G., Spasov, V. A., Chinenna, S. K., Zakirova, R. I., Tananina, I. N., Perchugor, G. Y., and Pavlova, O. I., 1988, "Biochemical Method Soffreeing Gas-Air Mixture from Sulphur Containing Compounds", **Fibre Chemistry**, Vol. 19, pp. 373-378.

Singh, O. V. and Jain, R. K., 2003, "Phytoremediation of Toxic Aromatic Pollutants from Soil", **Applied Microbiology and Biotechnology**, Vol. 63, pp. 128–135.

Slaski, J. J., Archambault, D. J., and Li, X., 2000, **The Potential Use of PAH Accumulation as a Marker of Exposure to Air Emission from Oil and Gas Flares**, Air Research Users Group, Alberta Environment, Edmonton, Alberta.

Sripat, W., and Thiravetyan, P., 2013, "Phytoremediation of BTEX from Indoor Air by *Zamioculcas zamiifolia*", **Water Air Soil Pollution**, Vol. 224, pp. 1482.

Stoeckli, F., Moreno, C., Carrasco, F., and López, V. M., 2001, "Distribution of Oxygen Complexes on Activated Carbons from Immersion Calorimetry, Titration and Temperature-Programmed Desorption Techniques", **Carbon**, Vol. 39, pp. 2235-2237.

Swift, R. J., Carter, S. E., Widdowson, D. A., Mason, J. R., and Leak, D. J., 2001, "Expression of Benzene Dioxygenase from *Pseudomonas putida* ML2 in is-1,2-Cyclohexanediol-Degrading *Pseudomonads*", **Applied Microbiology and Biotechnology**, Vol. 55, pp. 721-726.

Tarran, J., Torpy, F., and Burchett, M., 2007, **Use of Living Pot-Plants to Cleanse Indoor Air-Review**, Faculty of Science, University of Technology Sydney (UTS) PO Box 123, Broadway, NSW 2007, Sydney, Australia.

Topp, E., Scheunert, I., Attar, A., and Korte, F., 1986, "Factors Affecting the Uptake of C-14-Labelled Organic Chemicals by Plants from Soil", **Ecotoxicology and Environmental Safety**, Vol. 11, pp. 219–228.

Tsiros, I. X., and Ambrose, R. B., Chronopoulou-sereli, A., 1999, "Air Vegetation Soil Partition of Toxic Chemicals in Environmental Simulation Modeling", **GlobalNEST International Journal**, Vol. 1, pp. 177-184.

Ugrelkhelidze, D., Korte, F., and Kvesitadz, G., 1997, "Uptake and Transformation of Benzene and Toluene by Plant Leaves". **Ecotoxicology and environmental Safety**, vol. 37, pp. 24-29.

U.S. Environmental Protection Agency, 2007, **EPA Region 6: Human Health Medium-Specific Screening Levels**. Texas, USA.

U.S. Environmental Protection Agency, 200, **Benzene**, <http://www.epa.gov/teach/> [Online] 2/27/2009.

Van Lith, C., David, S. L., and Marsh, R., 1990, "Design Criteria for Bio filters". In: VanLith, C., David, S. L., Marsh, R. (eds) "Effluent Treatment and Waste Disposal". Clair Tech, Utrecht, **Netherlands Institution of Chemical Engineers SympSer**, Vol. 116, pp. 127–132.

Weckhuysen, B., Vriens, L., and Verachtert, H., 1993, "The Effect of Nutrient Supple Mentation on the Biofiltration Removal of Butanol Contaminated Air", **Applied Microbiology and Biotechnology**, Vol. 39, pp. 395–399.

Weckhuysen, B., Vriens, L., and Verachtert, H., 1994, "Biotreatment of Ammonia and Butanal Containing Waste Gases", **Applied Microbiology and Biotechnology**, Vol. 42, pp. 147–152.

Wever, H. D., Cort, S. D., Noots, I., and Verachtert, H., 1997, "Isolation and Characterization of *Rhodococcus rhodochrous* for The Degradation of the Wastewater Component 2-hydroxybenzothiazole", **Applied Microbiology and Biotechnology**, Vol. 47, pp. 458-461.

Whited, G. M. and Gibson, D. T., 1991, "Toluene-4-Monooxygenase, a Three Component Enzyme System That Catalyzes the Oxidation of Toluene to p-Cresol in *Pseudomonas mendocina* KR1", **Journal of Bacteriology**, pp. 3010-3016.

Wolverton, B. C., 1996, **How to grow fresh air.** penguin book, New York.

Wolverton, B.C., Johnson, A., and Bounds, K., 1989, **Interior Landscape Plants for Indoor Air Pollution Abatement, Final Report**, September N.A.S.A., Stennis Space Centre MS.

Wood, R., Orwell, R., Tarran, J., and Burchett, M., 2001, **Pot-Plants Really Do Clean Indoor Air**. The Nursery Papers, 2001/2, NIAA (Nursery Ind. Assocn. Aust.) Sydney, Australia.

Wu, W-M., Bhatnagar, L., and Zeikus, J. G., 1993, Performance of Anaerobic Granules for Degradation of Pentachlorophenol, **Applied and Environmental Microbiology**, Vol. 59, pp. 389-397.

Yu, H., Kim, B. J., and Rittmann, B. E., 2001, "The Roles of Intermediates in Biodegradation of Benzene, Toluene, and p-Xylene by *Pseudomonas putida* F1", **Biodegradation**, Vol. 12, pp. 455–463.

Zarook, S., 2005, **Biotechnology for odor and air pollution control**, Germany, pp. 29-168.