

# EVANGELOS A. VOUDRIAS

## Professor Emeritus of Environmental Engineering

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Since 1 September 2022, Dr. **Evangelos A. Voudrias** has been a retired Professor of *Solid and Hazardous Waste Management* in the *Department of Environmental Engineering*, Democritus University of Thrace, Xanthi, Greece. On 28 September 2023, he was awarded the title of **Professor Emeritus** in the same Department by the Senate of Democritus University of Thrace. He was the first elected Professor of the Department and the first Director of the Laboratory for Solid and Hazardous Waste Technology and Management.

After receiving his *PhD in Environmental Engineering* from the *Department of Civil and Environmental Engineering of the University of Illinois at Urbana-Champaign*, he spent two years as a post-doctoral research fellow in the Department of Civil and Environmental Engineering at *Stanford University*, followed by two years as a Research Scientist at *Battelle Memorial Institute*, Columbus, Ohio. In 1988, he joined the Civil Engineering Faculty (rank of Assistant Professor) at *Georgia Institute of Technology*, Atlanta, Georgia, where he taught courses on hazardous waste management, advanced physical/chemical treatment processes and processes affecting the fate and transport of contaminants in subsurface systems.

In 1996, he was appointed Associate Professor in the Department of Environmental Engineering of Democritus University of Thrace and in 2001 he was promoted to the rank of the Professor at the same Department. From June 2009 to June 2020, Professor Voudrias was the first *Director* of the Graduate Program “*Environmental Engineering and Science*” of the Department of Environmental Engineering of Democritus University of Thrace. His research and teaching interests focused on: (1) Engineering and management of solid and hazardous waste. (2) Management of medical waste. (3) Management of construction and demolition

waste. (4) Fate and transport of contaminants in subsurface systems (aquifers, unsaturated soils, landfills) and their remediation.

He has been a Principal Investigator and Research Associate in more than 20 research projects funded by private and public funding agencies in the United States and in Greece, such as: National Science Foundation, U.S. Environmental Protection Agency, U.S. Department of Interior, U.S. Department of Energy, U.S. Air Force, Electric Power Research Institute, DuPont, Battelle Memorial Institute, General Secretariat for Research and Technology of Greece and Ministry of National Education and Religious Affairs of Greece. The results of the research work of Professor Voudrias have been presented in international conferences and published in **80** peer-reviewed publications in well-respected international journals, such as: *Journal of Environmental Engineering-ASCE*, *Environmental Science and Technology*, *Waste Management*, *Journal of Hazardous Materials*, *Journal of Cleaner Production*, *Energy Conversion and Management*, *Waste Management and Research*, *Journal of Contaminant Hydrology*, *Ground Water*, *Water Research*, *Chemosphere*, *Journal of American Water Works Association*, *Transport in Porous Media* and *Environmental Progress*.

He was included twice in the **Stanford/Elsevier list**, highlighting the **top 2%** of the most cited scientists across the globe, based on Scopus citation data, for his total published work through 2021 and 2022, respectively. He received more than 4520 Google Scholar citations with h-index=36 (as of March 2024).

He has been an **Associate Editor of Waste Management (Elsevier)** from May 2016 to January 2018, handling mostly papers on healthcare waste and **member of the Editorial Advisory Board of the Journal Detritus (International Waste Working Group – IWWG)** since March 2018.

### SELECTED PEER-REVIEWED PUBLICATIONS

1. Voudrias, E.A. (2023). Management of COVID-19 healthcare waste based on the circular economy hierarchy: A critical review. *Waste Management & Research*, 0(0), doi:[10.1177/0734242X231198424](https://doi.org/10.1177/0734242X231198424)
2. Soultanidis, V., Voudrias, E.A. (2023). Modelling of demolition waste generation: Application to Greek residential buildings. *Waste Management and Research*, 0(0), <https://doi.org/10.1177/0734242X231155818>
3. Soultanidis, V., Papaspyros, I., Voudrias, E.A., Moutsopoulos, K.N. (2022). Release of heavy metals from conventional and reflective cool cement pavements. *Journal of Cleaner Production*, 336, 130434, <https://doi.org/10.1016/j.jclepro.2022.130434>
4. Mavridis, S., Voudrias, E.A. (2021). Using biogas from municipal solid waste for energy production: Comparison between anaerobic digestion and sanitary landfilling. *Energy Conversion and Management*, 247, 114613, <https://doi.org/10.1016/j.enconman.2021.114613>
5. Tsioka, M., Voudrias, E.A. (2020). Comparison of alternative management methods for phosphogypsum waste using life cycle analysis. *Journal of Cleaner Production* 266, 121386, <https://doi.org/10.1016/j.jclepro.2020.121386>
6. Kermenidou M., Voudrias E.A. and Konstantoula A.C. (2019). Composition and production rate of cytostatic pharmaceutical waste from a Greek Cancer Treatment Hospital. *Global NEST Journal*, 21(2), 131-140.

7. Voudrias, E.A., Topalidis, A., Mandalidis, A. and Iosifidis, N. (2018). Variability of Greek dental solid waste production by different dentist groups. *Environmental Monitoring and Assessment*, 190: 418 <https://doi.org/10.1007/s10661-018-6803-3>
8. Voudrias, E.A. (2018). Healthcare waste management from the point of view of circular economy. Editorial in *Waste Management*, 75, 1-2.
9. Mandalidis, A., Topalidis, A., Voudrias, E.A. and Iosifidis, N. (2018). Composition, production rate and characterization of Greek dental solid waste. *Waste Management*, 75, 124-130.
10. Zarkadas, I., Angeli, E., Sainis, I., Voudrias, E.A., and Pilidis, G.A. (2018). Food waste composting in a high-rate continuous feed drum reactor: Start up and carbon balance analysis. *CLEAN – Soil, Air, Water*, 46(2), Article number 1700622.
11. Mantzaras, G. and Voudrias, E.A. (2017). An optimization model for collection, haul, transfer, treatment and disposal of infectious medical waste: Application to a Greek region. *Waste Management*, 69, 518-534.
12. Voudrias, E.A. (2016). Technology selection for infectious medical waste management using the Analytic Hierarchy Process. *Journal of the Air and Waste Management Association*, 66:7, 663-672, DOI: 10.1080/10962247.2016.1162226.
13. Athanasiou, C.J., Tsalkidis, D.A., Kalogirou, E. and Voudrias, E.A. (2015). Feasibility analysis of municipal solid waste mass burning in the Region of East Macedonia – Thrace in Greece. *Waste Management and Research*, 33, 561-569.
14. Zarkadas, I.S., Sofikiti, A.S., Voudrias, E.A., and Pilidis, G.A. (2015). Thermophilic anaerobic digestion of pasteurized food wastes and dairy cattle manure in batch and large volume laboratory digesters: Focusing on mixing ratios. *Renewable Energy*, 80, 432-440.
15. Fytanidis, D.K. and Voudrias, E.A. (2014). Numerical simulation of landfill aeration using computational fluid dynamics. *Waste Management*, 34, 804-816.
16. Voudrias, E. and Graikos, A. (2014). Infectious medical waste management at the regional level. *Journal of Hazardous, Toxic and Radioactive Waste*, ASCE, ISSN 2153-5493/04014020(9).
17. Diamantis, V., Erguder, T.H., Aivasidis, A., Verstraete, W., and Voudrias, E. (2013). Wastewater disposal to landfill-sites: A synergistic solution for centralized management of olive mill wastewater and enhanced production of landfill gas. *Journal of Environmental Management*, 128, 427-434.
18. Voudrias, E., Goudakou, L., Kermenidou, M. and Softa, A. (2012). Composition and production rate of pharmaceutical and chemical waste from Xanthi General Hospital in Greece. *Waste Management*, 32, 1442-1452.
19. Komilis, D., Evangelou, A. and Voudrias, E. (2011). Monitoring and optimizing the co-composting of dewatered sludge: A mixture experimental design approach. *Journal of Environmental Management*, 92, 2241-2249.
20. Graikos, A., Voudrias, E., Papazachariou, A., Iosifidis, N. and Kalpakidou, M. (2010). Composition and production rate of medical waste from a small producer in Greece. *Waste Management*, 30, 1683-1689.
21. Karamalidis A. K., Evangelou A. C., Karabika E., Koukkou A. I., Drinas C. and Voudrias E. A. (2010). Laboratory scale bioremediation of petroleum-contaminated soil by indigenous microorganisms and added *Pseudomonas aeruginosa* strain Spet. *Bioresource Technology*, 101(16), 6545-6552.
22. Komilis, D.P., Vrohidou, A.-E.K. and Voudrias, E.A. (2010). Kinetics of aerobic bioremediation of a diesel-contaminated sandy soil: Effect of nitrogen addition. *Water, Air and Soil Pollution*, 208, 193-208.

23. Dolaptsoglou, C., Karpouzas, D.G., Menkissoglou-Spiroudi, U., Eleftherohorinos, I. and Voudrias, E.A. (2009). Influence of different organic amendments on the leaching and dissipation of Terbutylazine in a column and field study. *Journal of Environmental Quality*, 38(2), 782-791.
24. Komilis, D., Voudrias, E.A., Anthoulakis, S. and Iosifidis, N. (2009). Composition and production rate of solid waste from dental laboratories in Xanthi, Greece. *Waste Management*, 29, 1208-1212.
25. Karamalidis, A. and Voudrias, E.A. (2009). Leaching and immobilization behavior of Zn and Cr from cement-based stabilization/solidification of ash produced from incineration of refinery oily sludge. *Environmental Engineering Science*, 26(1), 81-96.
26. Karamalidis, A. and Voudrias, E.A. (2008). Anion leaching from refinery oily sludge and ash from incineration of oily sludge stabilized/solidified with cement. Part I. Experimental results. *Environmental Science and Technology*, 42, 6116-6123.
27. Karamalidis, A. and Voudrias, E.A. (2008). Anion leaching from refinery oily sludge and ash from incineration of oily sludge stabilized/solidified with cement. Part II. Modeling. *Environmental Science and Technology*, 42, 6124-6130.
28. Karamalidis, A. and Voudrias, E.A. (2008). Leaching behavior of metals released from cement-stabilized/solidified refinery oily sludge by means of sequential toxicity characteristic leaching procedure. *Journal of Environmental Engineering, ASCE*, 134(6), 493-504.
29. Karamalidis, A.K., Psycharis, V., Nicolis, I., Pavlidou, E., Benazeth, S. and Voudrias, E.A. (2008). Characterization of stabilized/solidified refinery oily sludge and incinerated refinery sludge with cement using XRD, SEM and EXAFS. *Journal of Environmental Science and Health, Part A*, 43:10, 1144-1156.
30. Batziaka, V., Fytianos, K. and Voudrias, E.A. (2008). Leaching of nitrogen, phosphorus, TOC and COD from the biosolids of the municipal wastewater treatment plant of Thessaloniki. *Environmental Monitoring and Assessment*, 140(1-3), 331-338.
31. Diamantis, V. and Voudrias, E.A. (2008). Laboratory and pilot studies on reclamation of a salt-affected alluvial soil. *Environmental Geology*, 54(3), 643-651.
32. Chatzikosma, D., Panagiotakopoulos, D. and Voudrias, E.A. (2007). Assessment of alternative technologies for remediation of an uncontrolled landfill in Greece. In *Landfill Aeration*, iwwg monograph series, Edited by R. Stegmann and M. Ritzkowski, 350 pages.
33. Karamalidis, A. and Voudrias, E.A. (2007). Cement-based stabilization/solidification of oil refinery sludge: Leaching behavior of alkanes and PAHs. *Journal of Hazardous Materials*, 148, 122-135.
34. Karamalidis, A. and Voudrias, E.A. (2007). Leaching of VOCs from cement-based stabilized/solidified refinery oily sludge, using solid phase microextraction. *Environmental Technology*, 28, 1173-1185.
35. Chatzikosma, D. and Voudrias, E.A. (2007). Simulation of polychlorinated biphenyls transport in the vadose zone. *Environmental Geology*, 53(1), 211-220.
36. Dolaptsoglou, C., Karpouzas, D.G., Menkissoglou-Spiroudi, U., Eleftherohorinos, I. and Voudrias, E.A. (2007). Influence of different organic amendments on the degradation, metabolism, and adsorption of Terbutylazine. *Journal of Environmental Quality*, 36, 1793-1802.
37. Karamalidis, A. and Voudrias, E.A. (2007). Release of Zn, Ni, Cu,  $\text{SO}_4^{2-}$  and  $\text{CrO}_4^{2-}$  as a function of pH from cement-based stabilized/solidified refinery oily sludge and ash from incineration of oily sludge. *Journal of Hazardous Materials*, 141, 591-606.

38. Gemitzi, A., Tsihrintzis, V.A., Voudrias, E.A., Petalas, C. and Stravodimos, G. (2007). Combining geographic information system, multicriteria evaluation techniques and fuzzy logic in siting MSW landfills. *Environmental Geology*, 51, 797-811.
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42. Voudrias, E.A. and Theodoseli, M. (2002) An Excel spreadsheet for computing leachate production from municipal solid waste landfills. Proceedings of International Solid Waste Association Congress, Istanbul, Turkey, vol. 2, pp. 875-882.
43. Voudrias, E.A. (2001). Pump-and-treat remediation of groundwater contaminated by hazardous waste: Can it really be achieved? *Global Nest: the International Journal*, 3(1), 1-10, <https://doi.org/10.30955/gnj.000199>
44. Nzengung, V.A., Nkedi-Kizza, P. and Voudrias, E.A. (1997). Organic co-solvent effects on sorption kinetics of hydrophobic organic chemicals by organoclays. *Environmental Science and Technology*, 31(5), 1470-1475.
45. Pearce, A.E., Voudrias, E.A. and Whelan, M.P. (1994). Dissolution of TCE and TCA Pools in saturated subsurface systems. *Journal of Environmental Engineering, ASCE*, 120(5), 1191-1206.
46. Chrysikopoulos, C.V., Voudrias, E.A. and Fyrrillas, M.M. (1994). Modeling the transport of contaminants from non-aqueous phase liquid pool dissolution in saturated porous media. *Transport in Porous Media*, 16, 125-145.