

# Dr. GEORGIOS BARTZAS

## Personal Information

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**Occupation:** Dr. Mining and Metallurgical Engineer, Senior Researcher  
**Date of Birth:** 4 January 1977  
**Place of Birth:** Athens, Greece  
**Nationality:** Greek  
**Marital Status:** Married (2 children)  
**Military Service:** Greek Navy, Engineer  
**Address:** 42 Eleftheriou Venizelou str.  
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## Education

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- 2002 – 2007 **PhD, Environmental Metallurgy, National Technical University of Athens**  
School of Mining and Metallurgical Engineering, Laboratory of Metallurgy,  
PhD Thesis: "Clean up of leachates generated from mining solid wastes using fly ash, red mud and zero-valent iron Permeable Reactive Barriers". (**Best PhD thesis award "Sarafi Foundation" – 2007/2008**)
- 2009 –2011 **MBA, Techno-Economic Systems, National Technical University of Athens/University of Piraeus** (part time/ 2 years),  
School of Electrical Engineering and Computer Science (NTUA) / Department of Industrial Management (UOP)
- 1996 – 2001 **Graduate Studies, National Technical University of Athens**  
School of Mining and Metallurgical Engineering,  
Diploma Thesis: "Leaching of heavy metals from contaminated soil using citrate solutions".

## Work Experience- Participation in Research Projects

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- January 2019 – LIFE17 CCM/GR/000087- CLIMAMED, "Innovative technologies for climate change mitigation by Mediterranean sector", Scientific Responsible: Prof. K. Komnitsas.
- Sep. 2018 – Dec. 2018 BalkanRoad (Interreg). "Towards farms with zero carbon-, waste- and water-footprint. Roadmap for sustainable management strategies for Balkan agricultural sector". Scientific Responsible: Dr. M. Doula.
- October 2012 – Sep.2016 LIFE+ AGROSTRAT, " Sustainable strategies for the improvement of seriously degraded agricultural areas:The example of Pistachia vera L., Environment Policy and Governance 2011, Scientific Responsible: Prof. K. Komnitsas.
- January 2012 – Sep.2015 WASTEVAL, "Development of an integrated methodology for the management, treatment and valorisation of hazardous waste

	(WasteVal), Thalys project. Scientific Responsible : Prof. K. Komnitsas.
January 2007 – Dec. 2008	PRB-Cleanup, "Optimization of Permeable Reactive Barriers performance for the Clean up of contaminated by heavy metals leachates and groundwater (PRB-Cleanup)". Project coordinator: Prof. K. Komnitsas.
January 2006 – Dec 2007	"Use of bauxite residues for carbon sequestration" funded by the Greek General Secretariat of Research and Technology (GSRT), supervised by Ass. Prof. A. Xenidis.
January 2005 – Aug 2007	INTREAT, "Integrated treatment of industrial wastes towards prevention of regional water resources contamination (INTREAT)" Scientific Responsible: Ass. Prof. K. Komnitsas.
March 2006 – Dec. 2006	"Risk assessment study at the Somika plant, Katanga province, Congo, Contrat No 48/Copirep/SE/03/2006". Scientific Responsible: Ass. Prof. K. Komnitsas
July 2005 – Dec. 2006	INDUWASTE, "Management and remediation of hazardous industrial wastes in the Western Balkan Countries (INDUWASTE)". Scientific Responsible: Ass. Prof. K. Komnitsas.
Sept. 2004 – Aug. 2006	INSWAM – AL, "Integrated industrial solid waste management in Albania". Scientific Responsible: Prof. K. Komnitsas.
March 2002 – Dec. 2004	ENVIMAN, "Environmental management of hazardous mining wastes and effluents (ENVIMAN)". Project coordinator and Scientific Responsible: Prof. I. Paspaliaris.

### **Participation in Congresses and Advanced Courses**

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16 – 29 June 2019	7 <sup>th</sup> International conference on sustainable solid waste management, Heraklion, Crete Island, Greece.
19 – 21 June 2019	10 <sup>th</sup> IWA International Symposium on Waste Management Problems in Agro-Industries, Rhodes, Greece.
6 - 7 September 2017	ISCD 2017 - 5 <sup>th</sup> International Conference on Sustainable Development, Rome, Italy.
21 - 24 June 2017	Athens 2017 - 5 <sup>th</sup> International Conference "Sustainable Solid Waste Management", Athens, Greece.
3- 6 July 2016	PREXIII 2016 - 13 <sup>th</sup> International Conference on Protection and Restoration of the Environment, Mykonos island, Greece
23 – 25 June 2016	Cyprus 2016 - 4 <sup>th</sup> International Conference on Sustainable Solid Management, Limassol, Cyprus.
13 - 14 May 2015	Nickel Processing '15 - 4 <sup>th</sup> International Symposium on Processing of Nickel Ores & Concentrates Falmouth, Cornwall, UK.
12 - 14 June 2014	Athens 2014 - 2 <sup>nd</sup> International Conference "Sustainable Solid Waste Management", Athens, Greece.
24 - 26 September 2014	4 <sup>th</sup> International Symposium on Green Chemistry, Environment, Health and Development, Kos island, Greece.

4 – 9 October 2009	IMA '09 - 6 <sup>th</sup> International Conference on Instrumental Methods of Analysis Modern Trends and Applications Athens, Greece.
8 – 9 November 2007	3 <sup>rd</sup> International Symposium on Permeable Reactive Barriers and Reactive Zones, Rimini, Italy.
8 – 9 June 2006	NATO Advanced Research Workshop Environmental Security Threats in Urban Settings, Athens, Greece
5 - 7 September 2005	IMWA '05, 9th International Mine Water Association Congress, Oviedo, Spain
13 - 15 June 2005	PDMIW '05, Processing and disposal of Minerals industry wastes Falmouth, Cornwall, UK,
6 - 9 April 2005	5 <sup>th</sup> National conference for the Management of Water Resources, Xanthi, Greece
7 - 9 June 2004	1 <sup>st</sup> International Conference on Advances in Mineral Resources Management and Environmental Geotechnology, Chania, Crete, Greece.
8 - 10 September 2003	8 <sup>th</sup> International Conference on Environmental Science and Technology, Lemnos Island, Greece.

## Awards and Distinctions

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- **Winner of the Best PhD thesis "Sarafis Foundation"** obtained in the years 2007 and 2008 at the School of Mining and Metallurgical Engineering (NTUA), Candidate for the 8 schools of the NTUA.
- **Member of the Editorial Board** of the Journal "Science of the Total Environment" (Elsevier) (Impact Factor = 5.589, 2018)  
<https://www.journals.elsevier.com/science-of-the-total-environment/editorial-board>
- **Member of the Editorial Board of the Journal "Data in Brief"** (Elsevier) (Citescore = 0.93, 2018)  
<https://www.journals.elsevier.com/science-of-the-total-environment/editorial-board>
- **Member of the Advisory Board of the Journal "Heliyon"** (Section – Environment)  
<https://www.heliyon.com/editorial-team/editorial-sections/Environment>
- **Thomaidion Award** for Scientific Publications, 2004, 2005, 2006
- **NTUA Scholarship** (Acad. Year 2004-2005)
- **Most downloaded article** of the year 2004 in *Minerals Engineering* (Earth and Planetary Sciences)

## Participation in Professional Affiliations

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- Member of the Technical Chamber of Greece,
- Member of the National Association of Mining and Metallurgical Engineers
- Member of the American Nano society

## Languages

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- English (Proficiency in English, University of Cambridge)
- German (Zertifikat, Goethe Institute)
- Greek (mother tongue)

## Publications in Peer-Reviewed Journals

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1. Komnitsas, K., **Bartzas, G.** and Paspaliaris, I. (2004). Clean up of acidic leachates using fly ash barriers: Laboratory column studies. *Global NEST: The International Journal*, Vol.1, 81-89.
2. Komnitsas, K., **Bartzas, G.** and Paspaliaris, I. (2004). Efficiency of limestone and red mud barriers: laboratory column studies. *Minerals Engineering*, 17, 183-194.
3. **Bartzas, G.**, K. Komnitsas and I. Paspaliaris (2006). Laboratory evaluation of Fe<sup>0</sup> barrier to treat water impacted by acid mine drainage. *Minerals Engineering*, 19(5): 505-514.
4. Komnitsas, K., **Bartzas, G.** and Paspaliaris, I. (2006). Inorganic contaminant fate assessment in zero-valent iron treatment walls. *Environmental Forensics*, 7: 207-217.
5. Komnitsas, K., **Bartzas, G.** and Paspaliaris, I. (2006). Modeling of reaction front progress in fly ash permeable reactive barriers. *Environmental Forensics*, 7: 219-231.
6. Komnitsas, K., **Bartzas, G.**, Fytas, K. and Paspaliaris, I. (2007). Long-term efficiency and kinetic evaluation of ZVI barriers used for clean up of copper containing solutions. *Minerals Engineering*, 20(13): 1200-1209.
7. **Bartzas, G.**, and Komnitsas, K (2010). Solid phase studies and geochemical modelling of low-cost permeable reactive barriers. *Journal of Hazardous Materials*, 183 (1-3): 301-308.
8. Komnitsas, K., Zaharaki, D. and **Bartzas, G.** (2013). Effect of sulphate and nitrate anions on heavy metal immobilisation in ferronickel slag geopolymers. *Applied Clay Science*, 73 (1): 103-109.
9. Komnitsas, K., Bazdanis, G., **Bartzas, G.**, Sahinkaya, E., and Zaharaki, D., (2013). Removal of heavy metals from leachates using organic/inorganic permeable reactive barriers, *Desalination and Water Treatment*, 51 (13-15): 3052-3059.
11. Komnitsas, K., Bazdanis, G., **Bartzas, G.**, Sahinkaya, E. and Zaharaki, D., (2013). Removal of heavy metals from leachates using organic/inorganic permeable reactive barriers, *Desalination and Water Treatment*, 51 (13-15): 3052-3059.
12. Komnitsas, K., Zaharaki, D. and **Bartzas, G.** (2013). Effect of sulphate and nitrate anions on heavy metal immobilisation in ferronickel slag geopolymers. *Applied Clay Science*, 73 (1): 103-109.
13. Komnitsas, K., Zaharaki, D., Vlachou, A., **Bartzas, G.** and Galetakis, M. (2015). Effect of synthesis parameters on the quality of construction and demolition wastes (CDW) geopolymers. *Advance Powder Technology* 26(2): 368–376.
14. Komnitsas, K., Zaharaki, D., Piliotis, I., Vamvuka, D., **Bartzas, G.** (2015). Assessment of pistachio shell biochar quality and its potential for adsorption of heavy metals. *Waste and Biomass Valorization* 6(5): 805–816.
15. **Bartzas, G.**, Tinivella, F., Medini, L., Zaharaki, D. and Komnitsas, K. (2015). Assessment of groundwater contamination risk in an agricultural area in north Italy. *Information Processing in Agriculture* 2(2): 109–129.
16. **Bartzas G.**, Zaharaki, D., Hernández-Fernández, M.T., Moreno J.L. and K. Komnitsas (2015). Assessment of aquifer vulnerability in an agricultural area in Spain using the DRASTIC model. *Environmental Forensics* 16(4): 356–373.
17. **Bartzas G.**, Zaharaki D. and K. Komnitsas (2015). Life cycle assessment of open field and greenhouse cultivation of lettuce and barley. *Information Processing in Agriculture* 2 (3-4): 191–207.
18. Pantazopoulou, E., Zebiliadou, O., **Bartzas, G.**, Xenidis, A., Zouboulis, A. and Komnitsas, K. (2015). Industrial solid waste management in Greece: The current situation and prospects for valorization. *Journal of Solid Waste Technology & Management* 41(4): 383–394.

19. **Bartzas, G.** and K. Komnitsas (2015). Life cycle assessment of ferronickel production in Greece. *Resources Conservation and Recycling* 105: 113–122.
20. Komnitsas, K., Zaharaki, D., **Bartzas, G.**, Kaliakatsou, G. and Kritikaki, A. (2016). Efficiency of pecan shells and sawdust biochar on Pb and Cu adsorption. *Desalination and Water Treatment* 57(7): 3237–3246.
21. Komnitsas, K., Bazdanis, G. and **Bartzas, G.** (2016). Efficiency of composite permeable reactive barriers for the removal of Cr(VI) from leachates. *Desalination and Water Treatment* 57(19): 8990–9000.
22. Komnitsas K., **Bartzas G.** and M.T. Hernández-Fernández (2016). Assessment of groundwater vulnerability to pollution in Barrax, Albacete, Spain. *Acta Horticulturae* 1146: 221–226.
23. **Bartzas, G.**, Vamvuka, D. and Komnitsas, K. (2017). Comparative life cycle assessment of pistachio, almond and apple production. *Information Processing in Agriculture* 4: 188–198
24. **Bartzas, G.**, Zaharaki, D., Doula, D. and Komnitsas, K. (2017). Evaluation of groundwater vulnerability in a Greek island using GIS-based models. *Desalination and Water Treatment* 67: 61–73.
25. **Bartzas, G.** and K. Komnitsas (2017). Life cycle assessment of pistachio production in Greece. *Science of the Total Environment* 595: 13–24.
26. Komnitsas, K., Zaharaki, D., **Bartzas, G.**, Alevizos, G., (2017). Adsorption of scandium and neodymium on biochar derived after low-temperature pyrolysis of sawdust. *Minerals* 7 (10), 200.
27. Tsakalou, C., Papamarkou, S., Tsakiridis, P.E., **Bartzas, G.** and Tsakalakis, K. (2018). Characterization and leachability evaluation of medical wastes incineration fly and bottom ashes and their vitrification outgrowths. *Journal of Environmental Chemical Engineering* 6(1): 367–376.
28. Papamarkou, S., Christopoulos D., Tsakiridis, P.E., **Bartzas, G.** and Tsakalakis, K. (2018). Vitrified medical wastes bottom ash in cement clinkerization. Microstructural, hydration and leaching characteristics. *Science of the Total Environment* 635: 705–715.
29. **Bartzas, G.** and K. Komnitsas (2018). Energy flow analysis in agriculture; the case of irrigated pistachio production in Greece. *Sustainable Energy Technologies and Assessments* 28: 73–80.
30. Papamarkou, S., Sifaki, C., Tsakiridis, P.E., **Bartzas, G.** and Tsakalakis, K. (2018). Synthetic wollastonitic glass ceramics derived from recycled glass and medical waste incinerator fly ash. *Journal of Environmental Chemical Engineering* 6(5): 5812-5819.
31. Komnitsas, K., Petrakis, E., **Bartzas, G.** and Karmali, V. (2019). Column leaching of low-grade saprolitic laterites and valorization of leaching residues. *Science of The Total Environment* 665: 347–357.
32. Komnitsas K., **Bartzas, G.**, Karmali, V., Petrakis, E., Kurylak, W., Pietek, G. and Kanasiwicz, J. (2019). Assessment of Alkali Activation Potential of a Polish Ferronickel Slag. *Sustainability* 11(7): 1863.
33. **Bartzas, G.** and K. Komnitsas (2019). An integrated multi-criteria analysis for assessing sustainability of agricultural production at regional level. *Information Processing in Agriculture*, in press
34. Soultana, Valouma, A., **Bartzas, G.**, and Komnitsas, K., (2019). Properties of Inorganic Polymers Produced from Brick Waste and Metallurgical Slag, *Minerals*, 9(9), 551.

Citations (SCOPUS): 629

h-index: 13

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## Publications in Honourable Editions

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35. **Bartzas, G.**, Komnitsas, K. and Paspaliaris, I. (2004). The use of permeable reactive barriers for the decontamination of acidic leachates: State-of-the-art. Honourable edition for Prof. Kontopoulos, Athens, 231-240.

## Publications - Refereed Conference Proceedings (oral presentations)

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36. Komnitsas, K., **Bartzas, G.** and Paspaliaris, I. (2004). Treatment of acidic leachates using fly ash barriers: Laboratory column studies. In: *Proceedings of the 8th Conference on Environmental Science and Technology*, 8-10 Sep. 2003, Lemnos, Greece, 469-476.
37. Komnitsas, K., **Bartzas, G.** and Paspaliaris, I. (2004). Evaluation of Low-cost materials for the decontamination of acidic leachates using permeable reactive barriers. In: *Proceedings of the International Conference on Sustainable Post Mining land Management*, (eds. C. Heberstreit, J. Kudelko and J. Kulczycka), 4-6 Nov. 2004, Krakow, Poland, 161-170.
38. Komnitsas, K., **Bartzas, G.** and Paspaliaris, I. (2005). Hydraulic performance of laboratory PRBs for the decontamination of acidic mine waters. In: *Proceedings of IMWA '05-9<sup>th</sup> International Mine Water Association Congress*, (eds. J. Loredó and F. Pendás), September 5-7, Oviedo, Spain, 347-354.
39. Komnitsas, K., **Bartzas, G.**, Zaharaki D. and Fytas, K. (2007). Treatment of highly acidic mine discharges in multi-component permeable reactive barriers: Column and modelling studies. In: *Proceedings of 3<sup>rd</sup> International symposium on PRBs and RZs*, (ed. M. Petraglini-Papini), November 8-9, Rimini, Italy, 63-67.
40. Zaharaki, D., K. Komnitsas, **G. Bartzas** (2008). Geotechnical stability of slag-based inorganic polymers in several environments, *Proceedings of GeoEnv08 (International Workshop on Geoenvironment and Geotechnics*, Milos, 8-9 Sep. 2008, 187-192.
41. **Bartzas, G.** and Komnitsas, K (2009). Solid phase studies and geochemical modelling of low-cost permeable reactive barriers, 6th International Conference on Instrumental Methods of Analysis – Modern Trends and Applications, 4-8 Oct. 2009, Athens, Greece.
42. **Bartzas, G.**, Xenidis, A and Papassiopi, N (2010). Bauxite residue for Carbon Sequestration, 10<sup>th</sup> Conference on Protection and Restoration of the Environment, 5-9 July 2010, Corfu, Greece.
43. Komnitsas K., G. Bazdanis, **G. Bartzas**, D. Zaharaki and E. Sahinkaya (2012). Prevention of groundwater contamination in waste disposal sites using composite reactive barriers, International Conference “Protection and Restoration of the Environment-XI (PRE-XI)” proceedings (in CD-ROM), Editors: K.L. Katsifarakis, N. Theodossiou, C. Christodoulatos, A. Koutsospyros and Z. Mallios, Thessaloniki, Greece (3-6 July), p. 453-462, <http://www.pre11.org/>
44. Komnitsas, K., Zaharaki, D., Pylotis, I., Vamvuka, D., Bartzas, G. (2014). Assessment of pistachio shell biochar quality and its potential for adsorption of heavy metals, Athens 2014, 2nd International Conference “Sustainable Solid Waste Management”, 12-14 June 2014, <http://athens2014.biowaste.gr/>

45. Zaharaki, D., Kaliakatsou, G., Kritikaki, A., Bartzas, G., Komnitsas, K. (2014). Quality of biochar produced from pyrolysis of pecan shells and sawdust, 4th International Symposium on Green Chemistry, Environment, Health and Development, September 24-26, 2014, Kos Island, Greece, <http://www.greenchem4.prd.uth.gr/>
46. Komnitsas, K., Bartzas, G. (2014). Life cycle assessment of process options for FeNi production in Greece, Minerals in Circular Economy (MINCE) Conference, Espoo, Finland, 26-27 November 2014, <http://www.mince.fi/index.html>
47. Komnitsas, K. and G. Bartzas (2015). Assessment of groundwater vulnerability to pollution in Barrax, Albacete, Spain, III International Symposium on Organic Matter Management and Compost Use in Horticulture, 20-24th April 2015, Murcia, Spain <http://www.verticesur.es/congresos/CFH2015/program.php>.
48. Bartzas, G. and K. Komnitsas (2015). Life cycle assessment of FeNi production in Greece: A case study, 4th International Symposium on Processing of Nickel Ores & Concentrates (Nickel Processing '15), May 13-14, 2015, Falmouth, Cornwall, UK. <http://www.min-eng.com/nickelprocessing15/paps.html>
49. Zaharaki D., Komnitsas, K. and G. Bartzas (2015). Use of analytical techniques for the identification of the morphology of geopolymers, Proceedings of the 3rd International Conference on Sustainable Solid Waste Management, Tinos island, Greece (2-4 July), <http://www.tinos2015.uest.gr/>.
50. Pantazopoulou, E., Zebiliadou, O., Bartzas, G., Xenidis, A., Zouboulis, A. and K. Komnitsas (2015). Industrial solid waste management in Greece: The current situation and prospects for valorization. The 30<sup>th</sup> International Conference on Solid Waste Technology and Management, March 15-18, 2015, Philadelphia, USA.
51. Komnitsas K., Bartzas, G. and M.T. Hernández-Fernández (2015). Assessment of groundwater vulnerability to pollution in Barrax, Albacete, Spain, III International Symposium on Organic Matter Management and Compost Use in Horticulture, Murcia, Spain (20-24 April), <http://www.verticesur.es/congresos/CFH2015/index.php>, p 39-48.
52. Bartzas, G., Zaharaki, D., Doula, M. and K. Komnitsas (2016). Evaluation of groundwater vulnerability in a Greek island using GIS-based models, 4th International Conference on Sustainable Solid Waste Management, 23-25 June 2016, Limassol, Cyprus. <http://cyprus2016.uest.gr/>
53. Bartzas, G., Zaharaki, D. and K. Komnitsas (2016). Life cycle analysis of pistachio production in Greece, 4th International Conference on Sustainable Solid Waste Management, 23-25 June 2016, Limassol, Cyprus. <http://cyprus2016.uest.gr/>
54. Komnitsas, K. and G. Bartzas, (2016). The environmental footprint of pistachio production in Aegina island, Greece. 4th International Conference on Sustainable Solid Waste Management, 23-25 June 2016, Limassol, Cyprus. <http://cyprus2016.uest.gr/>
55. Komnitsas, K., Bartzas, G., Zaharaki D. and D. Vamvuka (2016). Comparative life cycle assessment of three water-intensive tree cropping systems, 13th International Conference on Protection and Restoration of the Environment, 3-8 July 2016, Mykonos island, Greece. <http://pre13.civil.auth.gr/>
56. Bartzas, G. Komnitsas, K. Energy flow analysis of irrigated pistachio production in Aegina, Greece. 5th International Conference on Sustainable Solid Waste Management 21–24 June 2017, Athens, Greece, in CD-ROM, <http://athens2017.uest.gr/>
57. Bartzas, G. and K. Komnitsas (2017). A composite indicator-based methodology to assess the sustainability of agriculture in small islands: The case of Pistacia vera L. cultivation in Aegina, Greece. 5th ICSD, 6-7 September 2017, Rome, Italy. <https://ecsdev.org/index.php/conference>