

Curriculum Vitae
Dr Apostolos Giannis
Associate Professor
H-index (Scopus): 37

PERSONAL INFORMATION

First Name	APOSTOLOS
Last Name	GIANNIS
Address	SCHOOL OF CHEMICAL AND ENVIRONMENTAL ENGINEERING, TECHNICAL UNIVERSITY OF CRETE (TUC), UNIVERSITY CAMPUS, 73100 CHANIA, GREECE
Telephone	(0030)2821037819
E-mail	agiannis@tuc.gr
Nationality	Greek
Website	https://www.chenveng.tuc.gr/en/personnel/faculty/apostolos-giannis

EDUCATION / STUDIES

Date From/To	1996-2001
Institution	School of Environment, University of Aegean
Diploma	Diploma in Environmental Sciences
Date From/To	March 2001- May 2001
Institution	Oxford Brookes University
Diploma	Erasmus
Date From/To	2001-2003
Institution	School of Environmental Engineering, Technical University of Crete
Diploma	Master's in Environmental Science and Technology
Date From/To	July 2003-December 2003
Institution	Environmental Technology and Energy Economy Technical University of Hamburg-Harburg
Diploma	Marie-Curie Fellowship
Date From/To	2003-2008
Institution	School of Environmental Engineering, Technical University of Crete
Diploma	PhD in Waste Management and Soil Remediation Title of Thesis: 'Heavy metals removal from contaminated soil using electrokinetic technique and soil washing with emphasis on cadmium'

PROFESSIONAL CAREER

Date From/To	2004-2008
Institution	School of Environmental Engineering, Technical University of Crete
Position	Research Assistant
Date From/To	2009-2010
Institution	School of Environmental Engineering, Technical University of Crete
Position	Research Fellow
Date From/To	2010-2015
Institution	Residues and Resource Reclamation Centre, Nanyang Technological University
Position	Research Fellow
Date From/To	2015-2018
Institution	Residues and Resource Reclamation Centre, Nanyang Technological University
Position	Senior Research Fellow
Date From/To	2017-2018
Institution	Residues and Resource Reclamation Centre, Nanyang Technological University
Position	Assistant Director
Date From/To	2018-2024
Institution	School of Chemical and Environmental Engineering, Technical University of Crete
Position	Assistant Professor
Date From/To	2024-present
Institution	School of Chemical and Environmental Engineering, Technical University of Crete
Position	Associate Professor

TEACHING

Date From/To	2004 – 2006, 2009 – 2010
Institution	School of Environmental Engineering, Technical University of Crete
Laboratory Course	Teaching Assistant Solid waste management
Date From/To	2006-2008
Institution	School of Environmental Engineering, Technical University of Crete
Laboratory Course	Teaching Assistant Hazardous waste management
Date From/To	2009 – 2010
Institution	School of Environmental Studies, University of Aegean
Master of Science Program	Guest Lecturer Solid waste management
Date From/To	2013 – 2017
Institution	School of Civil and Environmental Engineering, Nanyang Technological University
Undergraduate studies	Guest Lecturer Course: EN3001 Solid & Hazardous Waste Management
Date From/To	2018 – current
Institution	School of Chemical and Environmental Engineering, Technical University of Crete
Courses	ENVE 338 Municipal Solid Waste: System Management and Design ENVE 438 Treatment and Management of Toxic and Hazardous Wastes ENVE 430 Field Studies II CHE 504 Natural Gas – Biogas – Hydrogen Technologies B-202 Solid and Toxic Waste Management

PROJECTS

Date From/To	2000-2001
Institution	Department of Environmental Science, University of Aegean
Research Program	Monitoring Greek water resources for toxic pollutants
Date From/To	2003
Institution	Technical University of Hamburg-Harburg
Research Program	Remediation of heavy metals (with emphasis on Cadmium) contaminated soils. (European Commission - Marie Curie Fellowship)
Date From/To	2004-2007
Institution	Department of Environmental Engineering, Technical University of Crete
Research Program	Integrated investigations on heavy metals adsorption and electrokinetic remediation of contaminated soil (Ministry of Education: Financed programme "Pythagoras")
Date From/To	2009-2010
Institution	Department of Environmental Engineering, Technical University of Crete
Research Program	The Greek hazardous waste classification scheme (Ministry of the Environment and Public Works)
Date from/To	2010-2015
Institution	Residues and Resource Reclamation Centre, Nanyang Technological University
Research Program	Sustainable Urban Waste Management for 2020 (National Research Foundation)
Date from/To	2016-2019
Institution	Residues and Resource Reclamation Centre, Nanyang Technological University
Research Program	Gasification-based syngas upgrading and purification system for enhanced power generation (Environment Technology Research Programme) Co-Principal Investigator
Date from/To	2017-2018
Institution	Residues and Resource Reclamation Centre, Nanyang Technological University
Research Program	Pyrolysis of flexible laminate waste for oil and carbon nanotubes production (Nestle) Co-Principal Investigator
Date from/To	2018-2022
Institution	Residues and Resource Reclamation Centre, Nanyang Technological University
Research Program	Advanced combustion and corrosion control system for steam boilers in WtE gasification plants (Waste-to-Energy Competitive Research Programme, WtE CRP) Co-Principal Investigator
Date From/To	2019-2020
Institution	School of Chemical and Environmental Engineering, Technical University of Crete
Research Program	Monitoring of soil and groundwater quality of ELPE facilities (Hellenic Petroleum S.A.)

Date From/To
Institution
Research
Program

2023-2025

School of Chemical and Environmental Engineering, Technical University of Crete

GreenMat – Advanced materials for sustainable development: Green Energy Production and Storage,
Energy saving and pollution control
(Ministry of Development, Greece 2.0)
Co-Principal Investigator

Publications in peer-reviewed journals

1. Chazirakis P., **Giannis A.**, Gidaracos E. (2024) Positioning transfer stations for waste collection and transport using LCA modelling. *Waste Management*, (under review).
2. Kastanaki E., Rovithi A., Iatrou E., Stratakis A., **Giannis A.** (2024) Conversion of lignite fly ash into synthetic zeolite by hydrothermal, fusion-hydrothermal and hydrothermal-sonochemical processes. *Journal of Chemical Technology and Biotechnology*, 99, 70 – 80.
3. Kastanaki E., Lagoudakis E., Kalogerakis G., **Giannis A.** (2023) Hydrothermal leaching of silver and aluminum from waste monocrystalline and polycrystalline photovoltaic panels. *Applied Sciences*, 13, 3602.
4. Chazirakis P., **Giannis A.**, Gidaracos E. (2023) Material flow and environmental performance of the source segregated biowaste composting system. *Waste Management*, 160, 23 – 34.
5. Kastanaki E., **Giannis A.** (2023) Dynamic estimation of end-of-life electric vehicle batteries in the EU-27 considering reuse, remanufacturing and recycling options. *Journal of Cleaner Production*, 393, 136349.
6. Huang W., Zhang R., **Giannis A.**, Li C., He C. (2023) Sequential hydrothermal carbonization and CO₂ gasification of sewage sludge for improved syngas production with mitigated emissions of NO_x precursors. *Chemical Engineering Journal*, 454, 140239.
7. Menon A., Lyng J., **Giannis A.** (2023) Higher bacterial diversity in two-phase thermophilic anaerobic digestion of food waste after micronutrient supplementation. *Biomass Conversion and Biorefinery*, 13, 5187 – 5195.
8. Liu G., Zhao Y., Heberlein S., Veksha A., **Giannis A.**, Chan W.P., Lim T.T., Lisak G. (2022) Hydrogen and power co-production from autothermal biomass sorption enhanced chemical looping gasification: Thermodynamic modeling and comparative study. *Energy Conversion and Management*, 269, 116087.
9. Liu G., Chang C.C., Zhao Y., Veksha A., **Giannis A.**, Lim T.T., Lisak G. (2022) Effect of alkali earth metal doping on the CuO/Al₂O₃ oxygen carrier agglomeration resistance during chemical looping combustion. *Journal of Cleaner Production*, 366, 132970.
10. Kastanaki E., **Giannis A.** (2022) Energy decarbonisation in the European Union: Assessment of photovoltaic waste recycling potential. *Renewable Energy*, 192, 1 – 13.
11. Wang H., Peng X., Li H., **Giannis A.**, He C. (2022) Recent biotechnology advances in bio-conversion of lignin to lipids by bacterial cultures. *Frontiers in Chemistry*, 10, 894593.
12. Zhao Y., Liu G., Huang J., Veksha A., Wu X., **Giannis A.**, Lim T.-T., Lisak G. (2022) Sorbents for high-temperature removal of alkali metals and HCl from municipal solid waste derived syngas. *Fuel*, 321, 124058.

13. Fathima A., Tang J.Y.B., **Giannis A.**, Ilankoon I.M.S.K., Chong M.N. (2022) Catalysing electrowinning of copper from e-waste: a critical review. *Chemosphere*, 298, 134340.
14. Chazirakis P., **Giannis A.**, Gidarakos E. (2022) Modeling the life cycle inventory of a centralized composting facility in Greece. *Applied Sciences*, 12, 2047.
15. Kastanaki E., **Giannis A.** (2022) Forecasting quantities of critical raw materials in obsolete feature and smart phones in Greece: A path to circular economy. *Journal of Environmental Management*, 307, 114566.
16. Huang J., Veksha A., Chan W.P., **Giannis A.**, Lisak G. (2022) Chemical recycling of plastic waste for sustainable material management: A prospective review on catalysts and processes. *Renewable and Sustainable Energy Reviews*, 154, 111866.
17. Liu G., Wu X., Zhao Y., Veksha A., **Giannis A.**, Lim T.-T., Lisak G. (2022) Thermal behavior of Cu-Mg-Al-Ba/Sr bifunctional composites during chemical looping combustion and HCl adsorption of MSW syngas. *Chemical Engineering Journal*, 430, 132871.
18. Heberlein S., Chan W.P., Veksha A., **Giannis A.**, Hupa L., Lisak G. (2022) High temperature slagging gasification of municipal solid waste with biomass charcoal as a greener auxiliary fuel. *Journal of Hazardous Materials*, 423, 127057.
19. Veksha A., Ahamed A., Wu X.Y., Liang L., Chan W.P., **Giannis A.**, Lisak G. (2022) Technical and environmental assessment of laboratory scale approach for sustainable management of marine plastic litter. *Journal of Hazardous Materials*, 421, 126717.
20. Kastanaki E., **Giannis A.** (2021) Dynamic estimation of future obsolete laptop flows and embedded critical raw materials: The case study of Greece. *Waste Management*, 132, 74 – 85.
21. Liliou A.M., Saru M.L., Veksha A., Lisak G., **Giannis A.** (2021) Selective leaching of scandium and yttrium from red mud induced by hydrothermal treatment. *Journal of Chemical Technology and Biotechnology*, 96(9), 2620 – 2629.
22. Ahamed A., Veksha A., **Giannis A.**, Lisak G. (2021) Flexible packaging plastic waste – environmental implications, management solutions, and the way forward. *Current Opinion in Chemical Engineering*, 32, 100684.
23. Kolosionis A., Kastanaki E., Veksha A., Wang H., He C., Lisak G., **Giannis A.** (2021) The effects of washing techniques on thermal combustion properties of sewage sludge chars. *International Journal of Environmental Research*, 15, 285 – 297.
24. Liu G., Wang H., Veksha A., **Giannis A.**, Lim T.-T., Lisak G. (2021) Chemical looping combustion-adsorption of HCl-containing syngas using alkaline-earth coated iron ore composites for simultaneous purification and combustion enhancement. *Chemical Engineering Journal*, 417, 129226.
25. Wang H., Liu G., Veksha A., **Giannis A.**, Lim T.-T., Lisak G. (2021) Effective H₂S control during chemical looping combustion by iron ore modified with alkaline earth metal oxides. *Energy*, 218, 119548.

26. He C., Zhang Z., Xie C., **Giannis A.**, Chen Z., Tang Y., Qiu R. (2021) Transformation behaviors and environmental risk assessment of heavy metals during resource recovery from *Sedum plumbizincicola* via hydrothermal liquefaction. *Journal of Hazardous Materials*, 410, 124588.
27. Wang H., Liu G., Boon Y.Z., Veksha A., **Giannis A.**, Lim T.-T., Lisak G. (2021) Dual-functional witherite in improving chemical looping performance of iron ore and simultaneous adsorption of HCl in syngas at high temperature. *Chemical Engineering Journal*, 413, 127538.
28. Wang H., Liu G., Veksha A., Dou X., **Giannis A.**, Lim T.-T., Lisak G. (2021) Iron ore modified with alkaline earth metals for the chemical looping combustion of municipal solid waste derived syngas. *Journal of Cleaner Production*, 282, 124467.
29. Liu G., Wang H., Deplazes S., Veksha A., Wirz-Töndury C., **Giannis A.**, Lim T.-T., Lisak G. (2021) Ba-Al-decorated iron ore as bifunctional oxygen carrier and HCl sorbent for chemical looping combustion of syngas. *Combustion and Flame*, 223, 230 – 242.
30. Wang H., Dou X., Veksha A., Liu W., **Giannis A.**, Ge L., Lim T.-T., Lisak G. (2020) Barium aluminate improved iron ore for the chemical looping combustion of syngas. *Applied Energy*, 272, 115236.
31. Chan W.P., Yussof S., Veksha A., **Giannis A.**, Lisak G., Lim T.-T. (2020) Analytical assessment of tar generated during gasification of municipal solid waste: distribution of GC-MS detectable tar compounds, undetectable tar residues and inorganic impurities. *Fuel*, 268, 117348.
32. Pan Z., Chan W.P., Oh W.D., Veksha A., **Giannis A.**, Tamilselvam K.S.O., Lei J., Mohamed D.K.B., Wang H., Lisak G., Lim T.-T. (2020) Regenerable Co-ZnO-based nanocomposites for high-temperature syngas desulfurization. *Fuel Processing Technology*, 201, 106344.
33. Ahamed A., Veksha A., Yin K., Weerachanchai P., **Giannis A.**, Lisak G. (2020) Environmental impact assessment of converting flexible packaging plastic waste to pyrolysis oil and multi-walled carbon nanotubes. *Journal of Hazardous Materials*, 390, 121449.
34. Veksha A., Yin K., Moo J.G.S., Oh W.D., Ahamed A., Chen W.Q., Weerachanchai P., **Giannis A.**, Lisak G. (2020) Processing of flexible plastic packaging waste into pyrolysis oil and multi-walled carbon nanotubes for electrocatalytic oxygen reduction. *Journal of Hazardous Materials*, 387, 121256.
35. Pan Z., Chan W.P., Veksha A., **Giannis A.**, Dou X., Wang H., Lisak G., Lim T.-T. (2019) Thermodynamic analyses of synthetic natural gas production via municipal solid waste gasification, high-temperature water electrolysis and methanation. *Energy Conversion and Management*, 202, 112160.
36. Veksha A., Moo J.G.S., Krikstolaityte V., Oh W.D., Udayanga C.W.D., **Giannis A.**, Lisak G. (2019) Synthesis of CaCr₂O₄/carbon nanoplatelets from non-condensable pyrolysis gas of plastics for oxygen reduction reaction and charge storage. *Journal of Electroanalytical Chemistry*, 849, 113368.

37. Udayanga C.W.D., Veksha A., **Giannis A.**, Lisak G., Lim T.-T. (2019) Effect of sewage sludge organic and inorganic constituents on the properties of pyrolysis products. *Energy Conversion and Management*, 196, 1410 – 1419.
38. Udayanga C.W.D., Veksha A., **Giannis A.**, Liang Y.N., Lisak G., Hu X., Lim T.-T. (2019) Insights into the speciation of heavy metals during pyrolysis of industrial sludge. *Science of the Total Environment*, 691, 232 – 242.
39. Teoh F., Veksha A., Chia V.W.K., Udayanga C.W.D., Mohamed D.K.B., **Giannis A.**, Lim T.-T., Lisak G. (2019) Nickel-based catalysts supported on gasification slag from municipal solid waste for steam reforming of naphthalene. *Fuel*, 254, 115561.
40. Phua Z.H., **Giannis A.**, Dong Z.-L., Lisak G., Ng W.J. (2019) Characteristics of incineration ash for sustainable treatment and reutilization. *Environmental Science and Pollution Research*, 26(17), 16974 – 16997.
41. Moo J.G.S., Veksha A., Oh W.D., **Giannis A.**, Udayanga C.W.D., Lin S.X., Ge L., Lisak G. (2019) Plastic derived carbon nanotubes for oxygen reduction reaction: Effects of plastic feedstock and synthesis temperature. *Electrochemistry Communications*, 101, 11 – 18.
42. Maharjan M., Wai N., Veksha A., **Giannis A.**, Lim T.M., Lisak G. (2019) Sal wood sawdust derived highly mesoporous carbon as prospective electrode material for vanadium redox flow batteries. *Journal of Electroanalytical Chemistry*, 834, 94 – 100.
43. Oh W.D., Lee M.G.H., Udayanga C.W.D., Veksha A., Bao Y., **Giannis A.**, Lim J.-W., Lisak G. (2019) Insights into the single and binary adsorption of copper(II) and nickel(II) on hexagonal boron nitride: Performance and mechanistic studies. *Journal of Environmental Chemical Engineering*, 7, 102872.
44. Chan W.P., Veksha A., Lei J., Oh W.D., Dou X., **Giannis A.**, Lisak G., Lim T.-T. (2019) A hot syngas purification system integrated with downdraft gasification of municipal solid waste. *Applied Energy*, 237, 227 – 240.
45. Chan W.P., Veksha A., Lei J., Oh W.D., Dou X., **Giannis A.**, Lisak G., Lim T.-T. (2019) A novel real-time monitoring and control system for waste-to-energy gasification process employing differential temperature profiling of a downdraft gasifier. *Journal of Environmental Management*, 234, 65 – 74.
46. Dou X., Veksha A., Chan W.P., Oh W.D., Liang Y.N., Teoh F., Mohamed D.K.B., **Giannis A.**, Lisak G., Lim T.-T. (2019) Poisoning effects of H₂S and HCl on the naphthalene steam reforming and water-gas shift activities of Ni and Fe catalysts. *Fuel*, 241, 1008 – 1018.
47. Udayanga C.W.D., Veksha A., **Giannis A.**, Lim T.-T. (2019) Pyrolysis derived char from municipal and industrial sludge: Impact of organic decomposition and inorganic accumulation on the fuel characteristics of char. *Waste Management*, 83, 131 – 141.

48. Veksha A., **Giannis A.**, Yuan G., Tng J., Chan W.P., Chang V.W.C., Lisak G., Lim T.-T. (2019) Distribution and modeling of tar compounds produced during downdraft gasification of municipal solid waste. *Renewable Energy*, 136, 1294 – 1303.
49. Oh W.D., Lei J., Veksha A., **Giannis A.**, Chan W.P., Lisak G., Lim T.-T. (2018) Ni-Zn-based nanocomposite loaded on cordierite mullite ceramic for syngas desulfurization: Performance evaluation and regeneration studies. *Chemical Engineering Journal*, 351, 230 – 239.
50. Veksha A., **Giannis A.**, Oh W.D., Lisak G. (2018) Catalytic processing of non-condensable pyrolysis gas from plastics: Effects of calcium supports on nickel-catalyzed decomposition of hydrocarbons and HCl sorption. *Chemical Engineering Science*, 189, 311 – 319.
51. Udayanga C.W.D., Veksha A., **Giannis A.**, Lisak G., Chang V.W.C., Lim T.-T. (2018) Fate and distribution of heavy metals during thermal processing of sewage sludge. *Fuel*, 226, 721 – 741.
52. Oh W.D., Lisak G., Webster R., Liang Y.-N., Veksha A., **Giannis A.**, Moo J.G.S., Lim J.-W., Lim T.-T. (2018) Insights into the thermolytic transformation of lignocellulosic biomass waste to redox-active carbocatalyst: Durability of surface active sites. *Applied Catalysis B: Environmental*, 233, 120 – 129.
53. Veksha A., **Giannis A.**, Oh W.D., Chang V.W.C., Lisak G., Lim T.-T. (2018) Catalytic activities and resistance to HCl poisoning of Ni-based catalysts during steam reforming of naphthalene. *Applied Catalysis A: General*, 557, 25 – 38.
54. Hu C.C., Choy S.-Y., **Giannis A.** (2018) Evaluation of lighting systems, carbon sources and bacteria cultures on photo fermentative hydrogen production. *Applied Biochemistry and Biotechnology*, 185(1), 257 – 269.
55. Oh W.D., Lok L.-W., Veksha A., **Giannis A.**, Lim T.-T. (2018) Enhanced photocatalytic degradation of bisphenol A with Ag-decorated S-doped g-C₃N₄ under solar irradiation: Performance and mechanistic studies. *Chemical Engineering Journal*, 333, 739 – 749.
56. Veksha A., **Giannis A.**, Oh W.D., Chang V.W.C., Lisak G. (2018) Upgrading of non-condensable pyrolysis gas from mixed plastics through catalytic decomposition and dechlorination. *Fuel Processing Technology*, 170, 13 – 20.
57. Oh W.D., Lei J., Veksha A., **Giannis A.**, Lisak G., Chang V.W.C., Hu X., Lim T.-T. (2018) Influence of surface morphology on the performance of nanostructured ZnO-loaded ceramic honeycomb for syngas desulfurization. *Fuel*, 211, 591 – 599.
58. **Giannis A.**, Chen M., Yin K., Tong H.H., Veksha A. (2017) Application of system dynamics modeling for evaluation of different recycling scenarios in Singapore. *Journal of Material Cycles and Waste Management*, 19, 1177 – 1185.
59. Yin K., Li L., **Giannis A.**, Weerachanchai P., Ng B.J.H., Wang J.-Y. (2017) High quality fuel from food waste - investigation of a stepwise process from the perspective of technology development. *Environmental Technology*, 13-14, 1735 – 1741.

60. Veksha A., **Giannis A.**, Chang V.W.C. (2017) Conversion of non-condensable pyrolysis gases from plastics into carbon nanomaterials: Effects of feedstock and temperature. *Journal of Analytical and Applied Pyrolysis*, 124, 16 – 24.
61. Liu B., **Giannis A.**, Chen A., Zhang J., Chang V.W.C., Wang J.-Y. (2017) Determination of urine-derived odorous compounds in a source separation sanitation system. *Journal of Environmental Sciences*, 52, 240 – 249.
62. Yin K., Tong H.H., **Giannis A.**, Wang J.-Y., Chang V.W.C. (2017) Multiple geophysical surveys for old landfill monitoring in Singapore. *Environmental Monitoring and Assessment*, 189(20), 1 – 13.
63. Menon A., Wang J.-Y., **Giannis A.** (2017) Optimization of micronutrient supplement for enhancing biogas production from food waste in two-phase thermophilic anaerobic digestion. *Waste Management*, 59, 465 – 475.
64. Zhao L., **Giannis A.**, Lam W.E., Lin S., Yin K., Yuan G., Wang J.-Y. (2016) Characterization of Singapore RDF resources and analysis of their heating value. *Sustainable Environment Research*, 26, 51 – 54.
65. Yin K., Tong H.H., **Giannis A.**, Chang V.W.C., Wang J.-Y. (2016) Insights for contaminant transformation via monitored natural attenuation - Effects of DOC, time and hydrogeology. *Waste Management*, 53, 105 – 115.
66. Menon A., Ren F., Wang J.-Y., **Giannis A.** (2016) Effect of pretreatment techniques on food waste solubilization and biogas production during thermophilic batch anaerobic digestion. *Journal of Material Cycles and Waste Management*, 18(2), 222 – 230.
67. Liu B., **Giannis A.**, Zhang J., Chang V.W.C., Wang J.-Y. (2015) Air stripping process for ammonia recovery from source-separated urine: modeling and optimization. *Journal of Chemical Technology and Biotechnology*, 90(12), 2208 – 2217.
68. Tong H.H., Yin K., **Giannis A.**, Ge L., Wang J.-Y. (2015) Influence of temperature on carbon and nitrogen dynamics during in situ aeration of aged waste in simulated landfill bioreactors. *Bioresource Technology*, 192, 149 – 156.
69. Yang L., **Giannis A.**, Chang V.W.C., Liu B., Zhang J., Wang J.-Y. (2015) Application of hydroponic systems for the treatment of source-separated human urine. *Ecological Engineering*, 81, 182 – 191.
70. He C., Wang K., **Giannis A.**, Yang Y., Wang J.-Y. (2015) Products evolution during hydrothermal conversion of dewatered sewage sludge in sub- and near-critical water: Effects of reaction conditions and calcium oxide additive. *International Journal of Hydrogen Energy*, 40, 5776 – 5787.
71. Yin K., Tong H.H., Noh O., Wang J.-Y., **Giannis A.** (2015) Mapping refuse profile in Singapore old dumping ground through electrical resistivity, S-wave velocity and geotechnical monitoring. *Bulletin of Environmental Contamination and Toxicology*, 94, 275 – 281.
72. Tong H.H., Yin K., Ge L., **Giannis A.**, Chuan V.W.L., Wang J.-Y. (2015) Monitoring transitory profiles of leachate humic substances in landfill aeration reactors. *Journal of Hazardous Materials*, 287, 342 – 348.

73. Yin K., **Giannis A.**, Wong A.S.Y., Wang J.-Y. (2014) EDTA enhanced thermal washing of contaminated dredged marine sediments for heavy metal removal. *Water, Air, and Soil Pollution*, 225(8), 2024.
74. Hu C.C., **Giannis A.**, Chen C.-L., Wang J.-Y. (2014) Evaluation of hydrogen producing cultures using pretreated food waste. *International Journal of Hydrogen Energy*, 39, 19337 – 19342.
75. He C., Chen C.-L., **Giannis A.**, Yang Y., Wang J.-Y. (2014) Hydrothermal gasification of sewage sludge and model compounds for renewable hydrogen recovery: A review. *Renewable & Sustainable Energy Reviews*, 39, 1127 – 1142.
76. Ng B., Zhou J., **Giannis A.**, Chang V.W.C., Wang J.-Y. (2014) Environmental life cycle assessment of different domestic wastewater streams: Policy effectiveness in a tropical urban environment. *Journal of Environmental Management*, 140, 60 – 68.
77. Liu B., **Giannis A.**, Zhang J., Chang V.W.C, Wang J.-Y. (2013) Characterization of induced struvite formation from source-separated urine using seawater and brine as magnesium sources. *Chemosphere*, 93, 2738 – 2747.
78. Hu C.C., **Giannis A.**, Chen C.-L., Qi W., Wang J.-Y. (2013) Comparative study of biohydrogen production by four dark fermentative bacteria. *International Journal of Hydrogen Energy*, 38, 15686 – 15692.
79. He C., **Giannis A.**, Wang J.-Y. (2013) Conversion of sewage sludge to clean solid fuel using hydrothermal carbonization: Hydrochar fuel characteristics and combustion behavior. *Applied Energy*, 111, 257 – 266.
80. Zhang J., **Giannis A.**, Chang V.W.C., Ng B.J.H., Wang J.-Y. (2013) Adaptation of urine source separation in tropical cities: Process optimization and odor mitigation. *Journal of Air and Waste Management Association*, 63(4), 472 – 481.
81. Zhang J., **Giannis A.**, Chang V.W.C., Wang J.-Y. (2013) Removal of cytostatic drugs from aquatic environment: A review. *Science of the Total Environment*, 445-446, 281 – 298.
82. Chen M., **Giannis A.**, Wang J.-Y. (2012) Application of system dynamics model for municipal solid waste generation and landfill capacity evaluation in Singapore. *The Macrotheme Review*, 1(1), 101 – 114.
83. **Giannis A.**, Tay E., Kao J., Wang J.-Y. (2012) Upward electrokinetic removal of heavy metals and PAHs from contaminated soil. *Electrochimica Acta*, 86, 72 – 79.
84. Ng B., **Giannis A.**, Chang V., Stegmann R., Wang J.-Y. (2012) Modelling decentralized source-separation systems for urban waste management. *World Academy of Science, Engineering and Technology*, 68, 398 – 402.
85. Pelleria F., **Giannis A.**, Anastasiadou K., Kalderis D., Stegmann R., Wang J.-Y., Gidarakos E. (2012) Adsorption of Cu(II) ions from aqueous solutions on biochars prepared from agricultural by-products. *Journal of Environmental Management*, 96, 35 – 42.

86. Chazirakis P., **Giannis A.**, Gidakos E., Wang J.-Y., Stegmann R. (2011) Application of sludge, organic solid wastes and yard trimmings in aerobic compost piles. *Global NEST Journal*, 13(4), 4-5 – 411.
87. Turro E., **Giannis A.**, Cossu R., Mantzavinos D., Gidakos E., Katsaounis A. (2011) Electrochemical oxidation of stabilized landfill leachate on DSA electrodes. *Journal of Hazardous Materials*, 190, 460 – 465.
88. Nikolaou A., **Giannis A.**, Gidakos E. (2011) Evaluation of a sequential aerobic-anaerobic treatment of municipal solid waste in a bioreactor landfill. *International Journal of Environmental Engineering*, 3(3-4), 336 – 348.
89. **Giannis A.**, Pentari D., Wang J.-Y., Gidakos E. (2010) Application of sequential extraction analysis to electrokinetic remediation of cadmium, nickel and zinc from contaminated soils. *Journal of Hazardous Materials*, 184, 547 – 554.
90. Nikolaou A., **Giannis A.**, Gidakos E. (2010) Comparative studies of aerobic and anaerobic treatment of the MSW organic fraction in landfill bioreactors. *Environmental Technology*, 31(12), 1381 – 1389.
91. **Giannis A.**, Nikolaou A., Pentari D., Gidakos E. (2009) Chelating agent-assisted electrokinetic removal of cadmium, lead and copper from contaminated soils. *Environmental Pollution*, 157, 3379 – 3386.
92. **Giannis A.**, Gidakos E., Skouta A. (2008) Transport of cadmium and assessment of phytotoxicity after electrokinetic remediation. *Journal of Environmental Management*, 86, 535 – 544.
93. **Giannis A.**, Makripodis G., Simantiraki F., Somara M., Gidakos E. (2008) Monitoring operational and leachate characteristics of an aerobic simulated landfill bioreactor. *Waste Management*, 28, 1346 – 1354.
94. **Giannis A.**, Kalaitzakis M., Diamadopoulos E. (2007) Electrochemical treatment of olive mill wastewater. *Journal of Chemical Technology and Biotechnology*, 82, 663 – 671.
95. **Giannis A.**, Gidakos E., Skouta A. (2007) Application of sodium dodecyl sulfate and humic acid as surfactants on electrokinetic remediation of cadmium-contaminated soil. *Desalination*, 211, 249 – 260.
96. Gidakos E., **Giannis A.** (2006) Chelate agents enhanced electrokinetic remediation for removal cadmium and zinc by conditioning catholyte pH. *Water, Air, and Soil Pollution*, 172, 295 – 312.
97. **Giannis A.**, Gidakos E. (2005) Washing enhanced electrokinetic remediation for removal cadmium from real contaminated soil. *Journal of Hazardous Materials*, 123, 165 – 175.
98. Stasinakis A.S., Thomaidis N.S., **Giannes A.**, Lekkas T.D. (2003) Effect of arsenic and mercury speciation on inhibition of respiration rate in activated sludge systems. *Environmental Science and Pollution Research*, 10(3), 177 – 182.

CONFERENCE PRESENTATIONS

1. Tzala C., Kastanaki E., He C., **Giannis A.** (2023) Design of a photovoltaic waste recycling system in Greece. *19th International Symposium on Waste Management, Resource Recovery and Sustainable Landfilling*, 9 – 13 October, Sardinia, Italy.
2. He C., **Giannis A.** (2023) Hydrothermal co-carbonization of sewage sludge and food wastes towards sustainable biowaste management and NO_x emission reduction. *19th International Symposium on Waste Management, Resource Recovery and Sustainable Landfilling*, 9 – 13 October, Sardinia, Italy.
3. Kastanaki E., **Giannis A.** (2023) Coupling retired electric vehicle batteries with PV systems for urban sustainability: the case study of Greece. *IEES Closed cycles and the Circular Society 2023: The power of ecological engineering*, 1 – 5 October, Chania, Greece.
4. Malouchou I., **Giannis A.** (2023) Technoeconomic assessment of a deposit refund system for recycling of single use beverage packaging in Greece. *3rd Eureka-Pro Conference on Responsible Consumption and Production*, 26 – 29 September, Chania, Greece.
5. Karefylaki E., Galanakis C., Veksha A., Lisak G., **Giannis A.** (2023) Column adsorption of polyphenols from olive mill wastewater by activated biochar. *2nd International Conference on Sustainable Chemical and Environmental Engineering (SUSTENG)*, 14 – 18 June, Limassol, Cyprus.
6. Kastanaki E., Lagoudakis E., Kalogerakis G., **Giannis A.** (2022) Hydrothermal process for silver leaching from mono- and poly-crystalline photovoltaic waste panels. *1st International Conference on Sustainable Chemical and Environmental Engineering (SUSTENG)*, 31 August – 04 September, Rethymno, Greece.
7. Panourgia E., Daras T., **Giannis A.**, Maria E. (2022) Handling and waste management of Covid-19 self and rapid tests survey: a data analysis, *1st International Conference on Sustainable Chemical and Environmental Engineering (SUSTENG)*, 31 August – 04 September, Rethymno, Greece.
8. Liu G., Wu X., Zhao Y., Veksha A., **Giannis A.**, Lim T.-T., Lisak G. (2021) Chemical looping combustion and HCl adsorption for MSW syngas using Cu-Mg-Al-Ba as bifunctional composite. *6th International Conference on Environmental Engineering and Sustainable Development (CEESD 2021)*, 2 – 5 December, Sanya, China.
9. Zhao Y., Liu G., Veksha A., Wu X., **Giannis A.**, Lim T.-T., Lisak G. (2021) Alkali metal and HCl removal of MSW syngas with solid sorbents. *6th International Conference on Environmental Engineering and Sustainable Development (CEESD 2021)*, 2 – 5 December, Sanya, China.
10. Liu G., Wu., Zhao Y., Veksha A., **Giannis A.**, Lim T.-T., Lisak G. (2021) Chemical looping combustion and HCl adsorption of MSW syngas with oxygen carrier sorbent composites. CRETE

2021, *7th International Conference on Industrial and Hazardous Waste Management*, 27 – 30 July, Chania, Greece.

11. Chazirakis P., **Giannis A.**, Gidarakos E. (2021) Creating a life cycle inventory of a centralized composting facility in the Mediterranean region. *CRETE 2021, 7th International Conference on Industrial and Hazardous Waste Management*, 27 – 30 July, Chania, Greece.
12. He C., Tang C., **Giannis A.** (2021) Transformation and stabilization of heavy metals in sewage sludge using hydrothermal co-carbonization with biomass. *CRETE 2021, 7th International Conference on Industrial and Hazardous Waste Management*, 27 – 30 July, Chania, Greece.
13. Samara M., Papadopoulou I., Galanakis C.M., **Giannis A.** (2021) Continuous column adsorption of landfill leachate onto orange peels and palm leaves activated biochars. *CRETE 2021, 7th International Conference on Industrial and Hazardous Waste Management*, 27 – 30 July, Chania, Greece.
14. Zografos A., **Giannis A.** (2021) Copper adsorption on activated biochars delivered from orange peels and coffee residues in fixed bed column. *CRETE 2021, 7th International Conference on Industrial and Hazardous Waste Management*, 27 – 30 July, Chania, Greece.
15. Papazoglou P., Vavouraki A.I., Kastanaki E., Psillakis E., **Giannis A.** (2021) Functionalization of discarded cigarette butts into biochars for copper adsorption. *CRETE 2021, 7th International Conference on Industrial and Hazardous Waste Management*, 27 – 30 July, Chania, Greece.
16. Liliou A.M., Saru M.L., Veksha A., Lisak G., **Giannis A.** (2021) Recovery of rare earth elements from red mud. *CRETE 2021, 7th International Conference on Industrial and Hazardous Waste Management*, 27 – 30 July, Chania, Greece.
17. Bumba J., Diamantopoulos A., Solcova O., **Giannis A.** (2021) Hydrothermal leaching of scandium from red mud. *CRETE 2021, 7th International Conference on Industrial and Hazardous Waste Management*, 27 – 30 July, Chania, Greece.
18. Rovithi A., Iatrou E., Kastanaki E., Stratakis A., **Giannis A.** (2021) Hydrothermal conversion of lignite fly ash into synthetic zeolite. *CRETE 2021, 7th International Conference on Industrial and Hazardous Waste Management*, 27 – 30 July, Chania, Greece.
19. Kastanaki E., **Giannis A.** (2021) Energy decarbonization in the European Union: Assessment of photovoltaic waste recycling potential. *International Conference on Resource Sustainability (icRS 2021)*, 19 – 23 July, Dublin, Ireland.
20. Lisak G., **Giannis A.**, Ahamed A., Moo J.G.S., Veksha A., Ge L., Weechachanchai P. (2019) Carbon nanotubes derived from plastic waste - a new wave of materials for circular economy. *236th ECS Meeting*, 13 – 17 October, Atlanta, USA.
21. **Giannis A.**, Gidarakos E. (2019) Solid waste management on small island destinations. *17th International Waste Management and Landfill Symposium*, 30 September – 4 October, Sardinia, Italy.

22. Kolosionis A., Kastanaki E., Gidarakos E., **Giannis A.** (2019) Conversion of sewage sludge to clean fuel using pyrolysis and washing methods. *17th International Waste Management and Landfill Symposium*, 30 September – 4 October, Sardinia, Italy.
23. Lisak G., Heberlein S., Veksha A., Wu D., **Giannis A.** (2019) Make it greener – Using renewable biomass charcoal to operate the high temperature slagging gasification facility for municipal solid waste. *17th International Waste Management and Landfill Symposium*, 30 September – 4 October, Sardinia, Italy.
24. Veksha A., Teoh F., Chia V., **Giannis A.**, Lim T.-T., Lisak G. (2019) Recycling of gasification slag from municipal solid waste into catalysts for steam reforming of naphthalene. *17th International Waste Management and Landfill Symposium*, 30 September – 4 October, Sardinia, Italy.
25. Chan W.P., Veksha A., Dou X., Tamilselvam K., Lei J., Oh W.D., Pan Z.H., **Giannis A.**, Lisak G., Lim T.-T. (2019) Technical and economic aspects of hot syngas purification for power generation from gasification of municipal solid waste. *E2S2-CREATE and AIChE Waste Management Conference*, 11 – 13 March, Singapore.
26. Ahamed A., Veksha A., Yin K., Weerachanchai P., **Giannis A.**, Lisak G. (2019) Upcycling of mixed plastic waste to oil and multi-walled carbon nanotubes: Techno-economic feasibility and environmental impacts. *E2S2-CREATE and AIChE Waste Management Conference*, 11 – 13 March, Singapore.
27. **Giannis A.**, Veksha A., Moo J.G.S., Oh W.D., Yin K., Weechachanchai P., Lisak G. (2018) Upcycling of non-condensable pyrolysis gases from waste plastics into carbon nanotubes for electrocatalytic applications. *CRETE 2018, 6th International Conference on Industrial and Hazardous Waste Management*, 4 – 7 September, Chania, Greece.
28. **Giannis A.**, Veksha A., Oh W.D., Lisak G. (2018) Influence of calcium support on the catalytic decomposition of non-condensable pyrolysis hydrocarbons from mixed plastics. *2nd International Conference on Bioresources, Energy, Environment, and Materials Technology (BEEM)*, 10 – 13 June, Vivaldi Park, Gangwon Province, Korea.
29. Moo J.G.S., Veksha A., Oh W.D., Lin S.X., Ge L., **Giannis A.**, Lisak G., Krikstolaityte V. (2018) Plastic-derived carbon nanotubes as a bifunctional electrocatalyst for hydrogen evolution and oxygen reduction reactions. *2nd International Conference on Bioresources, Energy, Environment, and Materials Technology (BEEM)*, 10 – 13 June, Vivaldi Park, Gangwon Province, Korea.
30. Chan W.P., Veksha A., Oh W.D., Dou X., Lei J., **Giannis A.**, Lisak G., Lim T.-T. (2018) Development of a multi-stage purification system for syngas upgrading produced from waste gasification. *2nd International Conference on Bioresources, Energy, Environment, and Materials Technology (BEEM)*, 10 – 13 June, Vivaldi Park, Gangwon Province, Korea.
31. Yin K., Chan W.P., Dou X., Ahamed A., Ren F., Chang V.W.C., **Giannis A.**, Lisak G. (2018) Heavy metal release into the marine environment during utilization of incineration bottom ash for land reclamation - A field-scale column study. *2nd International Conference on Bioresources, Energy,*

Environment, and Materials Technology (BEEM), 10 – 13 June, Vivaldi Park, Gangwon Province, Korea.

32. Veksha A., Oh W.D., **Giannis A.**, Chang V.W.C., Lisak G., Lim T.-T. (2018) Nanostructured ZnO loaded on ceramic honeycomb syngas desulfurization. *2nd International Conference on Catalysis and Chemical Engineering*, 19 – 21 February, Paris, France.
33. Oh W.D., Lei J., Veksha A., **Giannis A.**, Lisak G., Lim T.-T. (2018) Nanostructured ZnO loaded on ceramic honeycomb syngas desulfurization. *2nd International Conference on Catalysis and Chemical Engineering*, 19 – 21 February, Paris, France.
34. Udayanga C.W.D., Veksha A., **Giannis A.**, Chang V.W.C., Lim T.-T. (2017) Physicochemical transformation of heavy metals in sludge-biochar produced by pyrolysis treatment. *16th International Waste Management and Landfill Symposium*, 2 – 6 October, Sardinia, Italy.
35. Phua Z.H., **Giannis A.**, Wang J.-Y., Dong Z.-L. (2016) Characterization and leaching behavior of fly ash and air pollution control residues: Effect of ultrasound pretreatment. CRETE 2016, *5th International Conference on Industrial and Hazardous Waste Management*, 27 – 30 September, Chania, Greece.
36. Hu C., **Giannis A.**, Wang J.-Y. (2015) Biological hydrogen production from food waste by using integrated dark and photo fermentation. CIEM15, *6th International Congress of Energy and Environment Engineering and Management*, 22 – 24 July, Paris, France.
37. **Giannis A.**, Chen M., Wang J.-Y. (2015) Application of system dynamics (SD) model for evaluating the municipal solid waste management in Singapore. ICWMMHK2015, *International Conference on Waste Management*, 19 – 23 May, Hong Kong.
38. Yin K., Tong H.H., **Giannis A.**, Wang J.-Y. (2015) Transitional contaminants distribution in a tropical landfill via monitored natural attenuation. ICWMMHK2015, *International Conference on Waste Management*, 19 – 23 May, Hong Kong.
39. Menon A., Ren F., **Giannis A.**, Wang J.-Y. (2014) Effect of pretreatment techniques on solubilization and hydrogen and methane generation by thermophilic anaerobic digestion of food waste. AGRO'2014, *9th IWA International Symposium on Waste Management Problems in Agro-Industries*, 24 – 26 November, Kochi, Japan.
40. Hu C., Wang J.-Y., **Giannis A.**, Chen C.-L. (2014) Biohydrogen production from food waste. *7th International Conference on Environmental Science and Technology*, 9 – 13 June, Houston, USA.
41. He C., Chen C.-L., **Giannis A.**, Yang Y., Wang J.-Y. (2014) Simultaneous carbon capture and hydrogen yield enhancement in hydrothermal gasification of dewatered sewage sludge. *7th International Conference on Environmental Science and Technology*, 9 – 13 June, Houston, USA.
42. Wang J.-Y., **Giannis A.**, Chen C.-L., Chang V.W.C. (2013) Holistic design of decentralized urban resource recovery (DUR2) system for integrated waste management in Singapore. *Urban Environmental Pollution 2013 Asian Edition (UEP2013)*, 17 – 20 November, Beijing, China.

43. Nikolaou A., **Giannis A.**, Gidakos E. (2013) Bioreactor landfill application for sequential aerobic-anaerobic treatment of municipal solid waste. CEST 2013, *12th International Conference on Environmental Science and Technology*, 5 – 7 September, Athens, Greece.
44. Hu C., **Giannis A.**, Chen C.-L., Wang J.-Y. (2013) Comparative study of biohydrogen production by four photo fermentative bacteria. *BioH2 Conference*, 5 – 7 August, Montreal, Canada.
45. **Giannis A.**, Tan J., Wang J.-Y. (2013) Improvement of sludge electro-dewatering process using pretreatment techniques. *12th International Symposium on Electrokinetic Remediation*, 23 – 26 June, Boston, USA.
46. Hu C., **Giannis A.**, Chen C.-L., Wang J.-Y. (2013) Bio-hydrogen production from sodium acetate by four photo fermentative bacteria. *8th Annual International Symposium on Environment*, 13 – 16 May, Athens, Greece.
47. Zhao L., **Giannis A.**, Lam W.Y., Wang J.-Y. (2013) Physico-chemical analysis and calorific value of RDF in Singapore. *International Conference on Solid Waste 2013*, 5 – 8 May, Hong Kong, P.R. China.
48. Hu C., **Giannis A.**, Chen C.-L., Qi W., Wang J.-Y. (2012) Biohydrogen production from glucose by four dark fermentative bacteria. *The 2012 Asian Biohydrogen and Bioproducts Symposium*, 9 – 12 November, Chongqing, P.R. China.
49. Chen M., **Giannis A.**, Wang J.-Y. (2012) Application of system dynamics model for municipal solid waste generation and landfill capacity evaluation in Singapore. *The Macrotheme Conference on Energy Policy and Environment*, 17 – 18 October, Paris, France.
50. **Giannis A.**, Chen M., Stegmann R., Wang J.-Y. (2012) Effect of sodium acetate as pH amendment on the co-composting of food and horticultural waste. CRETE 2012, *3rd International Conference on Industrial and Hazardous Waste Management*, 12 – 14 September, Chania, Greece.
51. **Giannis A.**, Lim R.K., Wang J.-Y. (2012) Electrokinetic dewatering of sewage sludge in vertical electric field: Effect of potential gradient. CRETE 2012, *3rd International Conference on Industrial and Hazardous Waste Management*, 12 – 14 September, Chania, Greece.
52. Mimilidou A., **Giannis A.**, Gidakos E. (2012) Co-composting sewage sludge and yard trimming with municipal solid wastes in landfill bioreactors. *International Conference, Protection and Restoration of the Environment XI*, 3 – 6 July, Thessaloniki, Greece.
53. Tzanakos A., **Giannis A.**, Gidakos E. (2012) Influence of leachate recirculation rate on aerobic decomposition of solid wastes. *International Conference, Protection and Restoration of the Environment XI*, 3 – 6 July, Thessaloniki, Greece.
54. Ng B., **Giannis A.**, Chang V., Stegmann R., Wang J.-Y. (2011) Modelling decentralized source-separation systems for urban waste management. *3rd CUTSE International Conference*, 8 – 9 November, Sarawak, Malaysia.

55. Pelleri F., **Giannis A.**, Kalderis D., Gidarakos E. (2011) Adsorption of copper from aqueous solutions using biochar produced through pyrolysis. *12th International Conference on Environmental Science and Technology*, 8 – 10 September, Rhodes, Greece.
56. **Giannis A.**, Wang J.-Y., Gidarakos E. (2011) Study of sequential extraction analysis on electrokinetic removal of heavy metals from soils. *10th International Symposium on Developments in Electrokinetic Remediation of Soils, Sediments and Construction Materials*, 17 – 20 July, Utrecht, Netherlands.
57. **Giannis A.**, Tay E., Kao J., Wang J.-Y. (2011) Upward electrokinetic removal of heavy metals and PAHs from contaminated soil, *10th International Symposium on Developments in Electrokinetic Remediation of Soils, Sediments and Construction Materials*, 17 – 20 July, Utrecht, Netherlands.
58. Pozza C., **Giannis A.**, Gidarakos E., Cossu R. (2010) Aerobic composting and anaerobic digestion of MSW mixed with sewage sludge and yard trimmings. *3rd International symposium on energy from biomass and waste*, 8 – 11 November, Venice, Italy.
59. Pelleri F., **Giannis A.**, Anastasiadou K., Kalderis D., Pentari D., Gidarakos E. (2010) Adsorption of Cu(II) ions from aqueous solutions using biochar prepared from agricultural by-products. *2nd International Conference on Hazardous and Industrial Waste Management*, 5 – 8 October, Chania, Greece.
60. Tzanakos K., **Giannis A.**, Gidarakos E. (2010) Effect of leachate recirculation rate in solid waste bioreactors. *2nd International Conference on Hazardous and Industrial Waste Management*, 5 – 8 October, Chania, Greece.
61. **Giannis A.**, Turro E., Cossu R., Gidarakos E., Katsaounis A. (2010) Electrochemical oxidation of stabilized landfill leachate over DSA electrodes based on IrO₂ and RuO₂. *2nd International Conference on Hazardous and Industrial Waste Management*, 5 – 8 October, Chania, Greece.
62. Mimiilidou A., **Giannis A.**, Gidarakos E. (2010) Biological treatment of sewage sludge and yard trimmings with municipal solid wastes in landfill bioreactors. *2nd International Conference on Hazardous and Industrial Waste Management*, 5 – 8 October, Chania, Greece.
63. Chazirakis P., **Giannis A.**, Gidarakos E. (2010) Investigation of co-composting sludge, MSW and green waste in aerobic piles. *7th International Conference, ORBIT 2010*, 29 June – 3 July, Heraklion, Greece.
64. Gidarakos E., Nikolaou A., **Giannis A.** (2010) Biological treatment of the organic fraction of solid waste in bioreactor landfill. *International Conference, Protection and Restoration of the Environment X*, 5 – 9 July, Corfu, Greece.
65. Nikolaou A., **Giannis A.**, Gidarakos E. (2009) Sequential aerobic-anaerobic treatment of municipal solid waste in a bioreactor landfill. *12th International Waste Management and Landfill Symposium*, 5 – 9 October, Sardinia, Italy.

66. Nikolaou A., **Giannis A.**, Gidarakos E. (2009) Comparison of aerobic and anaerobic degradation of municipal solid wastes in lab scale bioreactors. *11th International Conference on Environmental Science and Technology*, 3 – 5 September, Chania, Greece.
67. Nikolaou A., **Giannis A.**, Gidarakos E. (2008) Effect of chelates on heavy metals desorption from contaminated soil using different extraction techniques. Evaluation of soil use after electrokinetic. *1st International Conference on Hazardous Waste Management*, 1 – 3 October, Chania, Greece.
68. **Giannis A.**, Gidarakos E., Skouta A. (2007) Electrokinetic removal of cadmium and assessment of phytotoxicity after remediation. *10th International Conference on Environmental Science and Technology*, 5 – 7 September, Cos, Greece.
69. **Giannis A.**, Gidarakos E., Skouta A. (2007) Use of humic acid as surfactant on electrokinetic remediation of cadmium contaminated soil. *1st Conference on Environmental Management, Engineering, Planning and Economics (CEMEPE)*, 24 – 28 June, Sciathos, Greece.
70. Mirkou K., **Giannis A.**, Gidarakos E. (2006) Integrated solid waste management for energy recovery in the island of Crete. *Biomass and waste to energy symposium*, 29 November – 1 December, Venice, Italy.
71. **Giannis A.**, Gidarakos E. (2006) Chelates enhanced electrokinetic remediation by conditioning catholyte pH. *Depotech*, 22 – 24 November, Leoben, Austria.
72. **Giannis A.**, Gidarakos E., Skouta A. (2006) Use of SDS as surfactant on electrokinetic remediation of cadmium contaminated soil. *International Conference, Protection and Restoration of the Environment VIII*, 3 – 7 July, Chania, Greece.
73. **Giannis A.**, Perysinaki A., Gidarakos E. (2005) Washing enhanced electrokinetic remediation for removal zinc in contaminated soil. *9th Conference on Environmental Science and Technology*, 1 – 3 September, Rhodes, Greece.
74. Gidarakos E., **Giannis A.** (2004) Removal of cadmium from contaminated soil using electrokinetic process. *International Conference, Protection and Restoration of the Environment VII*, 28 June – 1 July, Myconos, Greece.
75. **Giannes A.**, Gidarakos E. (2003) Electrokinetic treatment of cadmium from contaminated soils. *Second European Bioremediation Conference*, 30 June – 4 July, Chania, Greece.
76. **Giannis A.**, Diamadopoulou E., Ninolakis M. (2003) Electrochemical treatment of olive oil mill wastewater using Ti/Ta/Pt/Ir electrode. *IWA 3th Conference on Oxidation Technologies for Water and Wastewater Treatment*, 18 – 22 May, Goslar, Germany.
77. Stasinakis A., Thomaidis N., **Giannes A.**, Lekkas T.D. (2001) Toxicity of arsenic and mercury speciation in activated sludge. *7th Conference on Environmental Science and Technology*, 3 – 6 September, Syros, Greece.
78. Stasinakis A., Thomaidis N., **Giannes A.**, Grigoropoulos A. and Lekkas T.D. (2000) Toxicity of organotin compounds to activated sludge. *7th FECS conference on Chemistry and the Environment, Metal Speciation in the Aquatic Environment*, 27 – 30 August, Porto, Portugal.

79. Stasinakis A., Thomaidis N., Georgopoulos N., **Giannes A.**, Grigoropoulos A., Karantanelli M., Lekkas T.D. (1999) Determination of heavy metals and organotin compounds in the aquatic environment of Greece. *6th International Conference on Environmental Science and Technology*, 30 August – 2 September, Samos, Greece.

INVITED SPEAKER

1. **Giannis A.** (2023) Resource recovery from e-waste, 4th International Sustainability Conference 2023 (ISC 2023), Qatar.
2. **Giannis A.** (2021) Thermal processing of solid waste in conjunction to material circularity, Eureka-Pro, 7 October, Chania, Greece.
3. **Giannis A.** (2016) Food waste (FW) management - Hydrothermal conversion of FW into biodiesel. Switch to Sustainable Solutions (SSS) Case Challenge, Earthlink NTU, 30 January, Singapore.
4. **Giannis A.**, Chang V.W.C. (2015) Energy and urban resource resilience, 3rd Urban Sustainability R&D Congress, 9-10 July, Singapore.

MEMBERSHIP

- International Waste Working Group (IWWG)

EDITOR

- Editor, Journal of Environmental Chemical Engineering (Elsevier)
- Associate Editor, Waste Management (Elsevier)
- Associate Editor, Discover Environment, (Springer)
- Guest Editor, Chemosphere (Elsevier) Energy and materials recovery from industrial and hazardous waste (Guest Editors: Lisak G., Giannis A., Yin K.)
- Guest Editor, Applied Sciences (MDPI) Editorial Board Members' Collection Series: Waste Management and Recycling (Guest Editors: Giannis A., Nunez R.L.)
- Editorial Board Member, Water Conservation Science and Engineering (Springer)
- Editorial Board Member, Applied Sciences (mdpi)
- Editorial Board Member, Waste (mdpi)
- Editorial Board Member, Detritus (CISA Publisher)

- Editorial Board Member, Environmental Chemical Engineering (specialty section of Frontiers in Chemical Engineering)
- Guest Editor, Emerging Micropollutants in the Water Environment: Source, Fate, Transportation, and Treatment (2015) Journal of Chemistry, Hindawi (Guest Editors: Giannis A., Stasinakis A., Chong M.N., Rajagopal R.)

SUPERVISOR/MENTOR

PhD Students' supervision

- Charalabaki M. (2020-2024) Life cycle assessment of fuel development from sewage sludge.
- Kastanaki E. (2019-2023) Recovery of valuable materials from electronic waste (graduated).

PhD Students' co-supervision

- Kondili S. (2023-2027) Sustainable management of clothing waste using life cycle assessment and material flow analysis.
- Kandilioti I. (2021-2025) Impacts of single use plastics in the aquatic environment.
- Florou A. (2021-2025) Propylene production via oxidative dehydrogenation of propane with carbon dioxide.
- Androulakis A. (2020-2024) Catalytic conversion of CH₄ for H₂ enriched syngas via WGS reaction.
- Moukazis I. (2018-2024) Valorization of agro-industrial waste with anaerobic digestion and hydrothermal processing.
- Chazirakis P. (2018-2023) Modelling Solid Waste Management Systems, using advanced Life Cycle Assessment (LCA) tools (graduated).
- Manali A. (2018-2023) Valorization of biosolids for the production of electric energy by the microsieving-gasification methods (graduated).
- Udayanga C. (2015-2019) Pyrolysis-based stabilization of heavy metals in sewage sludge (graduated).
- Phua Z.H (2013-2019) Ultrasonic cavitation effects on treatment of municipal incineration fly ash (graduated).
- Menon A. (2011-2016) Developing a thermophilic AD system for optimal biogas production from food waste (graduated).
- He C. (2012-2015) Hydrothermal gasification of sewage sludge for energy production (graduated).
- Hu C.C. (2012-2015) Bio-hydrogen production from organic wastes using an integrated dark-photo fermentation process (graduated).

Master students' supervision

- Markakis V. (2022-2024) Material flow analysis and future projections of palladium in EU.
- Abutabikh W. (2021-2024) Management of construction and demolition concrete waste in Palestine.

Master students' co-supervision

- Vijlapura M. (2014) Monitoring of volatile substances during urine hydrolysis.
- Nikolaou A. (2009) Comparative simulation study of aerobic and anaerobic degradation of solid waste with leachates recirculation.
- Hazirakis P. (2007) Influence parameters on co-composting of sludge and municipal solid waste organic fraction.

Undergraduate students' supervision

- Mpaltzakis E. (2024) Treatment of red mud by sulfuric acid and organic ligands for selective leaching of Scandium and Yttrium.
- Lygizos A. (2024) Optimal design of electric vehicle battery recycling network.
- Malouchou I. (2023) Design of deposit refund system for recycling of single use beverage packaging.
- Tzala C. (2023) Design of a photovoltaic waste recycling system in Greece.
- Zarogoulas K. (2023) Comparison of commingle, recyclables and biowaste on diesel consumption during their collection and transport.
- Kaousis C. (2023) Fuel consumption study for the collection and transport of urban waste in the municipality of Argyroypoli-Elliniko.
- Kalogerakis G. (2023) Hydrothermal leaching of silver from mono-crystalline photovoltaic panels.
- Karefylaki E. (2023) Purification of olive mill wastewater using activated biochar.
- Lagoudakis E. (2023) Hydrothermal extraction of silver from polycrystalline photovoltaic panels waste.
- Papazoglou P. (2021) Adsorption of copper on chars from cigarette butts.
- Diamadopoulos A. (2021) Hydrothermal extraction of scandium and yttrium from red mud.
- Skourti S. (2021) System design for the sustainable management of biowaste in the municipality of Agios Dimitrios, Attica.
- Papadopoulou I. (2021) Treatment and purification of landfill leachate using palm leaves biochar.
- Samara M. (2021) Continuous column adsorption of landfill leachate onto orange biochar.
- B. Kontova (2021) Employment of plastic waste to produce light weight concrete.
- Rovithi A. (2021) Conversion of coal fly ash to synthetic zeolite by hydrothermal treatment.
- Iatrou E. (2020) Physicochemical studies for the synthesis of zeolite from coal fly ash.
- Lilliou A.-M. (2020) Selective recovery of scandium, titanium and yttrium from red mud.
- Zografos A. (2020) Copper adsorption on orange and coffee biochars in fixed-bed column.

- Georgiou M. (2020) Production of clean fuel by hydrothermal treatment of sewage sludge.
- Deligianni C. (2020) Adsorption of copper Cu (II) from an aqueous solution to activated biochar from olive residues.
- Kolosionis A. (2020) Conversion of sewage sludge to clean fuel by pyrolysis and washing.
- Dessimo D. (2019) Durability of composite plastics made from mixed plastic materials.

Undergraduate students' co-supervision

- Pothoulaki K. (2024) Gasification of primary microsieved biosolids for the cogeneration of heat and electricity.
- Denaxas M.A. (2023) Modeling trends in waste management at DEDISA facilities.
- Lyra M.-Z. (2023) Hydrothermally produced mono- and bi- metallic Ir-Ni/CeO₂-NR catalysts in the dry reforming of methane reaction (DRM).
- Besi N. (2023) Investigation of the water gas shift reaction over promoted Pt catalysts.
- Naka A. (2022) Degradation of nicotine using sodium persulfate activated with solar radiation.
- Ovakoglou E. (2022) Hydrogen production via steam reforming of biogas and LPG using Rh and Ru catalysts.
- Asimakoulas I. (2022) Optimization of pilot scale constructed wetlands with gravel and biochar for leachate treatment from Chania landfill.
- Katie N. (2022) Effect of compost and biochar on the growth of lettuce (*Lactuca sativa* L.).
- Bontiotis K. (2022) Effect of compost and biochar on the growth of lettuce (*Lactuca sativa* L.) irrigated with secondary effluent.
- Gialidis M. (2022) Treatment of leachate from Chania landfill using pilot scale horizontal subsurface flow constructed wetlands with gravel and biochar as substrate.
- Selountos D. (2022) Recycling of white paper A4 in the Technical University of Crete.
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- Tay J. (2013) The adventures of No-mix vacuum toilet around the world.
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- Ren K. (2012) Sludge dewatering using electrokinetic (EK) technology.
- Lam W.E. (2012) Producing high quality RDF to enhance waste-to-energy plants efficiency.
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- Pelleria M-F. (2010) Adsorption of Cu(II) ions from aqueous solutions on biochars prepared from agricultural by-products.
- Tzanakos K. (2010) Impact of the leachate recirculation rate on solid waste bioreactors.
- Mimiilidou A. (2010) Co-composting of sewage sludge and municipal solid waste in bioreactors.
- Zanis P. (2009) Integrated solid waste management on isolated islands.
- Pozza C. (2009) Co-digestion of sewage sludge and wood with municipal solid waste in landfill bioreactors.
- Turro E. (2009) Electrochemical oxidation of landfill leachate using DSA electrodes.

INTELLECTUAL PROPERTY (IP)

- Development of transition metal-solid acid catalyst for catalytic cracking of sublimate substances (TD/091/2018, filed on 06/04/2018) (Inventors: Piyarat Weerachanchai, Ke Yin, Andrei Veksha, Ashiq Ahamed, Wen-Da Oh, Apostolos Giannis, Grzegorz Lisak).
- Real-time monitoring and process control for gasification of municipal solid waste (TD/077/2018, filed on 22/03/2018) (Inventors: Wei Ping Chan, Andrei Veksha, Apostolos Giannis, Tiek-Thye Lim, Grzegorz Lisak).
- Ni-Zn nanocomposites with catalytic and desulfurization activities in warm gaseous stream (TD/255/17, filed on 15/09/2017) (Inventors: Wen-Da Oh, Junxi Lei, Andrei Veksha, Apostolos Giannis, Tiek-Thye Lim, Grzegorz Lisak).
- A process for Accelerating Ettringite Formation of Fly Ash and Application in Cement (TD/204/17, filed on 21/07/2017) (Inventors: Zheng Hui Phua, Wun Jern Ng, Apostolos Giannis).
- Nanocomposites From Plastic Pyrolysis Gas For Electrochemical Applications (TD/077/17/19/SG PRV, filed on 14/03/2017) (Provisional Patent Application No. 10201802583Q - Filing Date: 28 March 2018) (Provisional Patent Application No. 10201902846R - Filing Date: 29 March 2019) (Inventors: Andrei Veksha, Apostolos Giannis, Wen-Da Oh, Victor W.C. Chang).
- Reforming Catalyst with High Water-Gas Shift Activity and Resistance to Poisoning (TD/105/17, filed on 05/04/2017) (Provisional Patent Application No. 10201706017Y - Filing Date: 24 July 2017)

(PCT Application No: PCT/SG2018/050367 - International Filing Date: 24 July 2018) (Inventors: Andrei Veksha, Apostolos Giannis, Wen-Da Oh, Victor W.C. Chang).

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- Nanostructured Zinc Oxide and Application in Warm Fuel Gas Desulfurization (TD/076/17, filed on 14/03/2017) (Provisional Patent Application No. 10201705294U - Filing Date: 27 June 2017) (PCT Application No: PCT/SG2018/050312 - International Filing Date: 27 June 2018) (Inventors: Wen-Da Oh, Junxi Lei, Andrei Veksha, Apostolos Giannis, Victor W.C. Chang, Xiao Hu).

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- A Process For Simultaneous Removal Of Unsaturated Hydrocarbons And Hydrogen Chloride From Pyrolysis Gas (TD/081/16, filed 24/03/2016) (Provisional Patent Application No. 10201604829W - Filing Date: 14 June 2016) (Provisional Patent Application No. 10201706570W - Filing Date: 11 August 2017) (Inventors: Victor W.C. Chang, Andrei Veksha, Apostolos Giannis).
- Novel Micronutrient Cocktail for Thermophilic Anaerobic Digestion of Food Waste (TD/188/15, filed on 3/07/2015) (Provisional Patent Application No. 10201600685W - Filing Date: 28 January 2016) (Inventors: Jing-Yuan Wang, Ajay Menon, Apostolos Giannis).
- Source Separation Toilet System and Toilet Bowl for Use in Such A System (filed) - Patent application number: PCT/SG2013/000256, WO2014003686 A1, filed on 19/06/2013, published on 03/01/2014 (Inventors: Jing-Yuan Wang, Victor Chang, Apostolos Giannis, Damian Palin).

<https://patents.google.com/patent/WO2014003686A1/en>

WORKSHOP/PROGRAM PARTICIPATION

- Golder Associates / National Environment Agency (2015) Development of Technology Roadmap on Solid Waste Management for Singapore, 3rd Stakeholder Consultation Workshop, 15 July 2015, Singapore.
- Golder Associates / National Environment Agency (2015) Development of Technology Roadmap on Solid Waste Management for Singapore, 2nd Stakeholder Consultation Workshop, 31 March 2015, Singapore.
- ProSPER.Net Leadership Program (2013) Combining Collaboration, Expertise and Leadership for Sustainable Development, East West Center, 16 – 24 November, Honolulu, Hawaii, USA.
<http://unu.edu/publications/articles/a-hawaiian-community-restores-traditional-land-use.html>

- European Science Foundation Strategic Workshop on “Carbon and Nitrogen dynamic, sequestration and emission potential in landfills” (2009) Convened by: M. Huber-Humer, P. Mostbauer, P. Lechner, 8 – 9 June, Vienna, Austria.

REVIEWER JOURNALS

Biofuels, Biomass Conversion and Biorefinery, Bioresource Technology, Bulletin of Environmental Contamination and Toxicology, Chemical Engineering Journal, Chemosphere, Circular Economy and Sustainability, Colloids and Surfaces A: Physicochemical and Engineering Aspects, Desalination, Desalination and Water Treatment, Detritus, Ecological Engineering, Electrochimica Acta, Energy & Fuel, Environment International, Environmental Engineering and Management Journal, Environmental Engineering Science, Environmental Pollution, Environmental Science and Technology, Environmental Technology, Environments, Global Nest Journal, International Journal of Environmental Science and Technology, Journal of Advanced Research, Journal of Chemical Technology and Biotechnology, Journal of Cleaner Production, Journal of Environmental Chemical Engineering, Journal of Environmental Engineering and Landscape Management, Journal of Environmental Management, Journal of Environmental Sciences, Journal of Hazardous Materials, Journal of Material Cycles and Waste Management, Journal of Waste Management and Environmental Issues, Journal of Water Reuse and Desalination, KSCE Journal of Civil Engineering, Marine Georesources & Geotechnology, Open Water Journal, PeerJ, Process Safety and Environmental Protection, Renewable & Sustainable Energy Reviews, Science of the Total Environment, Separation Science and Technology, Sustainable Energy Technologies and Assessments, Sustainable Environment Research, Sustainability, Waste Management, Waste Management and Research, 'Water', Water, Air, and Soil Pollution, Water Conservation Science and Engineering, Water Research, Water Science and Technology

ACADEMIC SKILLS

Solid waste management, Waste valorization, Resource recovery, Circular economy, Zero waste, Agro-Industrial waste management, Urban waste, Waste-to-Energy, Waste-to-Materials, Anaerobic digestion, Composting, Landfilling, Thermal processing, Pyrolysis, Gasification, Syngas upgrading, Wastewater treatment, Soil pollution and remediation, Soil toxicity, Heavy metals mobility, Sediment, Hazardous waste management, Sewage sludge management, Ash management, Fuel, Carbon, Carbon-nanomaterials, Novel functional materials, Engineered biochar

RESEARCH INTERESTS

- Aerobic and anaerobic solid waste treatment
- Thermal treatment of solid residues
- Carbon engineered materials
- Advanced Oxidation Processes
- Chemistry of heavy metals in soils
- Organic compounds adsorption on char
- Leachate ecotoxicity
- Soil and water pollution
- Emerging Micropollutants

LANGUAGE SKILLS

- Greek: Excellent (Native language)
- English: Excellent (First Certificate, Cambridge University)
- German: Primary level