# Patrick Boakye

Department of Chemical Engineering
Kwame Nkrumah University of Science and Technology

ORCID 0000-0001-5600-0251 · Google Scholar scholar.google.com/citations?user=755RrAIAAAAJ&hl=en · Profile knust.peerford.com/staff/009cdfa0-5150-4ece-befe-cea7fba26b9f

## RESEARCH

| | |
|---|---|
| Interests | Environmental Nano/Biotechnology · Renewable Energy Production · Enhanced Oil Recovery |
| Areas | Waste Management and Disposal · Water Science and Technology · Biomedical Engineering · Mechanical Engineering · Environmental Engineering · Ocean Engineering |

## RESEARCH SUMMARY

| 56 | 1,128 | 14 | 21 | 1.08 | 13% |
|---|---|---|---|---|---|
| Publications | Citations | h-index | i10-index | Field-weighted impact | World top 10% |

Counted from the 56 publications listed below, 2017–2026. Field-weighted impact is the mean over the 48 works scored for it; 1.00 is the world average for works of the same field, type and year. 6 of the 48 papers scored for it are among the world's most cited tenth for their field, type and year.

## PUBLICATIONS

### Journal articles 54

1. Richard Komla Nyamador, **Patrick Boakye**, Sampson Oduro-Kwarteng, Esi Awuah, Richard Akwasi Buamah (2026). Adsorption of arsenic from gold mine wastewater onto iron oxide-coated sand and activated chars pyrolysed by the traditional-charcoal-production method. *Asian Journal of Water Environment and Pollution*. https://doi.org/10.36922/ajwep026180121
2. Godfred Ohemeng-Boahen, Ebenezer Paa Effisah, Yaw Addo Diabene, **Patrick Boakye**, Niib Konwuruk (2026). Adsorptive removal of reactive blue 21 dye from aqueous solution using Na-Zeolite Y. *Next research.*. https://doi.org/10.1016/j.nexres.2026.102396
3. Akua Adwubi Owusu, Eugene Appiah-Effah, Kofi Akodwaa-Boadi, Kwabena Biritwum Nyarko, **Patrick Boakye** (2026). Bridging the Gap Between Urban Waste Management and Valorization Through Ratio Modelling and Windrow Co-composting of Municipal Organic Waste, Chicken Litter and Palm Kernel Fiber. *Compost Science & Utilization*. https://doi.org/10.1080/1065657x.2026.2669099
4. Isaac Nsor, Bennetta Koomson, **Patrick Boakye** (2026). Development and Evaluation of Automotive Lubricating Oil from Jatropha curcas Oil. *International Journal of Emerging Research in Engineering Science and Management*. https://doi.org/10.58482/ijeresm.v5i1.2
5. Anthony Boakye Antwi, Nana Yaa Korankyewa-Ayim, Josephine Paule Amelan Kouassi, Sampson Oduro-Kwarteng, Jacob Alhassan Hamidu, Goodman Sarfo Kantanka, **Patrick Boakye**, Herman Erick Lutterodt (2026). Efficacy of food waste amended feed on sustainable broiler production. *Journal of Science and Technology (Ghana)*. https://doi.org/10.4314/just.v44i2.2
6. Emmanuel Pinto, Mizpah Ama Dziedzorm Rockson, Kwame Sarkodie, Caspar Daniel Adenutsi, Wilberforce Nkrumah Aggrey, **Patrick Boakye**, Samuel Erzuah, Emmanuel Agyei (2026). Evaluation of a carboxymethylcellulose-based fluid loss additive derived from cocoa pod husks for high temperature and pressure conditions. *Scientific African*. https://doi.org/10.1016/j.sciaf.2026.e03628
7. Richard Komla Nyamador, **Patrick Boakye**, Sampson Oduro-Kwarteng, Esi Awuah (2026). Ghana's mining legislation: An overview of how the small-scale and large-scale mining environment-related regulations compare. *Journal of Environmental Management*. https://doi.org/10.1016/j.jenvman.2025.128503

8. Francis Kemausuor, **P Boakye**, PA Akaba, JO Akowuah (2026). National-Scale Screening of Enhanced Rock Weathering in Ghana: Environmental Suitability and Geological Prospectivity. *Environmental Research Communications*. https://doi.org/10.1088/2515-7620/aeb0f7

9. Gideon Nunoo, **Patrick Boakye**, Miriam Appiah-Brempong, Selom Kwame Broni, Felix Kojo Okoe, Setordzi Gameli Agbe, Kwame Sarkodie, Ilham Ku-nwa Hamid, Sampson Oduro-Kwarteng (2026). Pyrolysis of faecal waste for energy and agronomic applications: Resource recovery approach. *Bioresource Technology Reports*. https://doi.org/10.1016/j.biteb.2026.102780

10. Gideon Owusu, Godfred Ohemeng-Boahen, Jude Kwaku Bonsu, **Patrick Boakye** (2026). REGENERATION OF SPENT BLEACHING EARTH: OPTIMIZATION AND REUSABILITY STUDIES. *Journal of Science and Technology (Ghana)*. https://doi.org/10.4314/just.v44i2.5s

11. John B. Nkansah, Eugene Appiah-Effah, **Patrick Boakye**, Michael Owusu (2026). SYNTHESIS AND CHARACTERIZATION OF KAOLIN- BIOCHAR COMPOSITES FROM AGRICULTURAL WASTE FOR ENVIRONMENTAL REMEDIATION. *Journal of Science and Technology (Ghana)*. https://doi.org/10.4314/just.v44i2.9s

12. Gideon Nunoo, Miriam Appiah-Brempong, **Patrick Boakye**, Mary Ann Nunoo, Sampson Oduro-Kwarteng (2026). Valorisation of faecal waste via co-composting with its biochar derivatives: Process performance and compost quality. *Bioresource Technology Reports*. https://doi.org/10.1016/j.biteb.2026.103080

13. John K. Bentum, Albert Eshun, David K. Essumang, **Patrick Boakye**, Joseph Kweku Adjei, Obed O. Ohene-Kwayisi, Jonathan N. Hogarh (2025). Fingerprints of Polychlorinated Biphenyl (PCB) Congener and Homologous Profile of the Pra River Basin Sediment. *OALib*. https://doi.org/10.4236/oalib.1113166

14. Joseph Patrick Mensah, Sampson Oduro-Kwarteng, Kodwo Miezah, **Patrick Boakye**, Benneta Koomson (2025). Health risks from persistent heavy metal contamination in crops and water at an abandoned naturally revegetated galamsey site in Ghana. *Scientific Reports*. https://doi.org/10.1038/s41598-025-17149-0

15. Raphael N. Alolga, Isaac Ayensu, **Patrick Boakye**, Sory Ibrahim Traore (2025). Low-temperature Heat Capacity and Other Thermodynamic Characteristics of Xylopic Acid Crystals. *Chemistry Africa*. https://doi.org/10.1007/s42250-025-01465-z

16. Prince Asilevi Junior, Enock Nyameasem Dzidzorm, **Patrick Boakye**, Emmanuel Quansah (2025). Nitrogen dioxide (NO2) Meteorology and predictability for air quality management using TROPOMI. *npj Clean Air*. https://doi.org/10.1038/s44407-024-00003-4

17. Kwame Sarkodie, Andrew Fergusson Rees, Mukhtar Abdulkadir, Nana Yaw Asiedu, Jonathan Atuquaye Quaye, **Patrick Boakye** (2025). Novel gas-liquid volumetric flow measurement via non-intrusive optical sensing under upward vertical bubbly flow. *Experimental and Computational Multiphase Flow*. https://doi.org/10.1007/s42757-024-0230-1

18. Solomon Adumatta, **Patrick Boakye**, Mark Bediako, Adams Yen Sokama-Nueyam, Godfred Ohemeng-Boahen, Stephen Adjei (2025). Performance evaluation of low-grade calcined clay as a supplementary cementitious material for sustainable oil-well cementing. *International Journal of Sustainable Engineering*. https://doi.org/10.1080/19397038.2025.2550991

19. Eliot Pappoe, Bennetta Koomson, **Patrick Boakye** (2025). Physicochemical and mineralogical characterization of spent and unspent cupels in Ghana; implication for recycling. *Journal of Hazardous Materials Advances*. https://doi.org/10.1016/j.hazadv.2025.100925

20. John K. Bentum, Albert Eshun, David K. Essumang, **Patrick Boakye**, Joseph Kweku Adjei, Justice Wiston Amstrong Jonathan, Obed O. Ohene-Kwayisi (2025). Polychlorinated Biphenyls Contamination of Drinking Water Source of the Pra River: Congener Distribution and Associated Risk. *OALib*. https://doi.org/10.4236/oalib.1113293

21. Yen A. Sokama-Neuyam, Emperor Amedeka, Emmanuel O. Ofori, Stephen Adjei, **Patrick Boakye**, Peter O. Tawiah, Francis Kemausuor (2025). Predictive Modelling of the Energy and Climate Cost of Ghana's Economic Growth. *Greenhouse Gases Science and Technology*. https://doi.org/10.1002/ghg.2373

22. Yen A. Sokama-Neuyam, Emperor Amedeka, David A. Quansah, Joseph O. Akowuah, Stephen Adjei, **Patrick Boakye**, Jonathan A. Quaye, Mustapha Abdul Hameed, Jonathan Narh-Dometey, Francis

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23. Prince Asilevi Junior, **Patrick Boakye**, Emmanuel Quansah, Alex Kwao Ablerdu, William Ampomah (2025). Satellite-Detected Nitrogen Dioxide (NO2) Hotspots in the Greater Accra Region, Ghana. *Nitrogen*. https://doi.org/10.3390/nitrogen7010004
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25. Prince Junior Asilevi, **Patrick Boakye**, Stephen Yaw Owusu, Emmanuel Quansah, Mandela Toku, William Ampomah (2025). Using pre-monsoon rainwater chemistry to monitor local atmospheric pollution in Kumasi, Ghana. *Environmental Science Atmospheres*. https://doi.org/10.1039/d5ea00071h
26. Rita Namoe Tabi, **Patrick Boakye**, Frank Ofori Agyemang, Edward Ndumiso Nxumalo, Sampson Oduro-Kwarteng (2024). A review of spiral wound membrane modules and processes for groundwater treatment. *Frontiers in Membrane Science and Technology*. https://doi.org/10.3389/frmst.2024.1343651
27. Rita Namoe Tabi, Abass Gibrilla, **Patrick Boakye**, Frank Ofori Agyemang, Antoinette Akosua Foaah, Sampson Oduro-Kwarteng (2024). Appraisal of groundwater quality and hydrochemistry in three regions of Ghana: Implications for drinking purposes. *Groundwater for Sustainable Development*. https://doi.org/10.1016/j.gsd.2024.101193
28. Alfred Dawson Quansah, **Patrick Boakye**, Lena D. Mensah, David A. Quansah (2024). Systematic literature review on the potential of using solar photovoltaic to power sea water desalination on offshore petroleum facilities. *Energy Reports*. https://doi.org/10.1016/j.egyr.2024.09.048
29. Prince Asilevi Junior, Felicia Dogbey, **Patrick Boakye**, Jeffrey Nii Armah Aryee, Edmund Ilimoan Yamba, Stephen Yaw Owusu, David Kofi Peprah, Emmanuel Quansah, Nana Ama Browne Klutse, John Kwesi Bentum, Kwaku Amaning Adjei, Geophrey Kwame Anornu, Sampson Oduro-Kwarteng, Leonard Kofitse Amekudzi (2023). Bias-corrected NASA data for aridity index estimation over tropical climates in Ghana, West Africa. *Journal of Hydrology Regional Studies*. https://doi.org/10.1016/j.ejrh.2023.101610
30. Ohemeng-Boahen Godfred, **P Boakye**, YA Sokama-Neuyam (2023). Iron-Based Nanocomposite Hydrogels for Dye Removal from Wastewater. *Nanocomposite Hydrogels and their Emerging Applications*. https://scholar.google.com/scholar?cluster=6562513038680247486&hl=en&oi=scholarr
31. **Patrick Boakye**, Miriam Beneireh Nuagah, Sampson Oduro-Kwarteng, Eugene Appiah-Effah, Jolly Kanjua, Anthony Boakye Antwi, Lawrence Darkwah, Kwame Sarkodie, Yen Adams Sokama-Neuyam (2023). Pyrolysis of municipal food waste: A sustainable potential approach for solid food waste management and organic crop fertilizer production. *Sustainable Environment*. https://doi.org/10.1080/27658511.2023.2260057
32. Nana Yaw Adu Antwi, Joshua Otoo, Gloria Teye, **Patrick Boakye**, Imman Boahene, Joseph A. Bentil (2023). The potential of in-house pectinolytic enzymes for industrial application. *Scientific African*. https://doi.org/10.1016/j.sciaf.2023.e01827
33. Francis Adu-Boahene, **Patrick Boakye**, Frank Ofori Agyemang, Jolly Kanjua, Sampson Oduro-Kwarteng (2023). Understanding fluoride adsorption from groundwater by alumina modified with alum using PHREEQC surface complexation model. *Scientific Reports*. https://doi.org/10.1038/s41598-023-38564-1
34. Alfred Dawson Quansah, Felicia Dogbey, Prince Junior Asilevi, **Patrick Boakye**, Lawrence Darkwah, Sampson Oduro-Kwarteng, Yen Adams Sokama-Neuyam, Patrick Mensah (2022). Assessment of solar radiation resource from the NASA-POWER reanalysis products for tropical climates in Ghana towards clean energy application. *Scientific Reports*. https://doi.org/10.1038/s41598-022-14126-9
35. **Patrick Boakye** (2022). Productive blue-green roofs for stormwater management. *Green Energy and Environmental Technology*. https://www.intechopen.com/journals/7/articles/17
36. Kwame Sarkodie, Olawale Oyenubi, Gbenga Oluyemi, Yen Adams Sokama-Neuyam, **Patrick Boakye** (2022). Study of polymer flooding and intelligent well technology for improved oil recovery. *Journal of the Ghana Institution of Engineering (JGhIE)*. https://doi.org/10.56049/jghie.v22i1.13

37. **Patrick Boakye**, Godfred Ohemeng-Boahen, Lawrence Darkwah, Yen Adams Sokama-Neuyam, Eugene Appiah-Effah, Sampson Oduro-Kwarteng, Barnabas Asamoah Osei, Prince Junior Asilevi, Seung Han Woo (2022). Waste Biomass and Biomaterials Adsorbents for Wastewater Treatment. *Green Energy and Environmental Technology*. https://doi.org/10.5772/geet.05

38. Emmanuel Pinto, Wilberforce Nkrumah Aggrey, **Patrick Boakye**, Gershon Amenuvor, Yen Adams Sokama-Neuyam, Michael Kwadwo Fokuo, Hassan Karimaie, Kwame Sarkodie, Caspar Daniel Adenutsi, Samuel Erzuah, Mizpah Ama Dziedzorm Rockson (2021). Cellulose processing from biomass and its derivatization into carboxymethylcellulose: A review. *Scientific African*. https://doi.org/10.1016/j.sciaf.2021.e01078

39. Prince Junior Asilevi, **Patrick Boakye**, Sampson Oduro-Kwarteng, Bernard Fei-Baffoe, Yen Adams Sokama-Neuyam (2021). Indoor air quality improvement and purification by atmospheric pressure Non-Thermal Plasma (NTP). *Scientific Reports*. https://doi.org/10.1038/s41598-021-02276-1

40. Bernice Mawumenyo Senanu, **Patrick Boakye**, Sampson Oduro-Kwarteng, Divine Damertey Sewu, Esi Awuah, Peter Appiah Obeng, Kobina Afful (2021). Inhibition of ammonia and hydrogen sulphide as faecal sludge odour control in dry sanitation toilet facilities using plant waste materials. *Scientific Reports*. https://doi.org/10.1038/s41598-021-97016-w

41. Michael Kwadwo Fokuo, Wilberforce Nkrumah Aggrey, Mizpah Ama Dziedzorm Rockson, Yen Adams Sokama-Neuyam, **Patrick Boakye**, Gershon Amenuvor, Kwame Sarkodie, Emmanuel Pinto, Hassan Karimaie (2021). Tannin-Based Deflocculants in High Temperature High Pressure Wells: A Comprehensive Review. *Advances in Chemical Engineering and Science*. https://doi.org/10.4236/aces.2021.114017

42. Yen A. Sokama-Neuyam, Wilberforce N. Aggrey, **Patrick Boakye**, Kwame Sarkodie, Sampson Oduro-Kwarteng, Jann R. Ursin (2021). The effect of temperature on CO2 injectivity in sandstone reservoirs. *Scientific African*. https://doi.org/10.1016/j.sciaf.2021.e01066

43. Mary Mensah, Nana Yaw Asiedu, Fabrice Abunde Neba, Prince Nana Amaniampong, **Patrick Boakye**, Ahmad Addo (2020). Modeling, optimization and kinetic analysis of the hydrolysis process of waste cocoa pod husk to reducing sugars. *SN Applied Sciences*. https://doi.org/10.1007/s42452-020-2966-y

44. Prince Asilevi Junior, Daniel Akambawe, Chengwu Yu, Jue Li, **Patrick Boakye**, Sampson Oduro-Kwarteng, Muhammad Imran Nawaz (2020). Research on the electrical characteristics of atmospheric strong ionization dielectric barrier discharge for air pollution control. *Maejo International Journal of Energy and Environmental Communication*. https://doi.org/10.54279/mijeec.v2i1.244953

45. Yen A. Sokama-Neuyam, **Patrick Boakye**, Wilberforce N. Aggrey, Nicholas O. Obeng, Francis Adu-Boahene, Seung Han Woo, Jann Rune Ursin (2020). Theoretical Modeling of the Impact of Salt Precipitation on CO2 Storage Potential in Fractured Saline Reservoirs. *ACS Omega*. https://doi.org/10.1021/acsomega.0c01687

46. Yen Adams Sokama-Neuyam, Francis Adu-Boahene, **Patrick Boakye**, Wilberforce Nkrumah Aggrey, Jann Rune Ursin (2020). Theoretical modeling of the effect of temperature on CO2 injectivity in deep saline formations. *Greenhouse Gases Science and Technology*. https://doi.org/10.1002/ghg.1951

47. Miriam Beneireh Nuagah, **Patrick Boakye**, Sampson Oduro-Kwarteng, Yen Adams Sokama-Neuyam (2020). Valorization of faecal and sewage sludge via pyrolysis for application as crop organic fertilizer. *Journal of Analytical and Applied Pyrolysis*. https://doi.org/10.1016/j.jaap.2020.104903

48. Yen Adams Sokama-Neuyam, Jann Rune Ursin, **Patrick Boakye** (2019). Experimental Investigation of the Mechanisms of Salt Precipitation during CO2 Injection in Sandstone. *C – Journal of Carbon Research*. https://doi.org/10.3390/c5010004

49. **Patrick Boakye**, Divine D. Sewu, Seung H. Woo (2018). Effect of thermal pretreatment on the extraction of potassium salt from alga Saccharina japonica. *Journal of Analytical and Applied Pyrolysis*. https://doi.org/10.1016/j.jaap.2018.04.019

50. **Patrick Boakye**, Hai Nguyen Tran, Dae Sung Lee, Seung Han Woo (2018). Effect of water washing pretreatment on property and adsorption capacity of macroalgae-derived biochar. *Journal of Environmental Management*. https://doi.org/10.1016/j.jenvman.2018.12.031

51. Divine Damertey Sewu, **P Boakye** (2017). Effect of the Co-Pyrolysis of Kelp Seaweed and Spent Mushroom Substrate on the Sorption Properties of Resulting Biochars. *대한환경공학회 학술발표논문집*.

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52. **P Boakye**, Divine D Sewu (2017). Extraction of inorganic materials from fresh and dried alga Saccharina japonica. *Journal of environmental chemical engineering*. https://www.sciencedirect.com/science/article/pii/S2213343717304141

53. Divine D Sewu, **P Boakye** (2017). Highly efficient adsorption of cationic dye by biochar produced with Korean cabbage waste. *Bioresource Technology*. https://www.sciencedirect.com/science/article/pii/S0960852416315140

54. Divine Damertey Sewu, **P Boakye** (2017). Synergistic dye adsorption by biochar from co-pyrolysis of spent mushroom substrate and Saccharina japonica. *Bioresource technology*. https://www.sciencedirect.com/science/article/pii/S0960852417314086

### Book chapters 1

1. Theophilus Baidoo, **Patrick Boakye**, Mizpah Ama Dziedzorm Rockson, Francis Kemausuor, Satyanarayana Narra (2024). A Life Cycle Assessment of Electricity Generation from the Anaerobic Digestion of Municipal Solid Waste in Ghana. *World sustainability series*. https://doi.org/10.1007/978-3-031-68330-5_6

### Reports 1

1. Akwasi Acheampong, AFA Marfo, **P Boakye**, AO Antwi, MK Baah, E Bessah, Gordon A Awandare (2021). Scientific African. *Scientific African*. https://www.researchgate.net/profile/Temitope-D-Timothy-Oyedotun/publication/356402866_Household_Waste_Generation_Change_in_Waste_Composition_and_the_Exposure_to_COVID-19_in_Guyana_and_Nigeria/links/619fb8b1d7d1af224b241a9b/Household-Waste-Generation-Change-in-Waste-Composition-and-the-Exposure-to-COVID-19-in-Guyana-and-Nigeria.pdf?_sg%5B0%5D=started_experiment_milestone&origin=journalDetail