Martina Francisca Baidoo

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RESEARCH

Areas: Building and Construction · Biomedical Engineering · Pollution · Energy Engineering and Power Technology · Waste Management and Disposal · Analytical Chemistry

RESEARCH SUMMARY

27	487	10	10	2.57	28%
Publications	Citations	h-index	i10-index	Field-weighted impact	World top 10%

Counted from the 27 publications listed below, 2010–2026. Field-weighted impact is the mean over the 18 works scored for it; 1.00 is the world average for works of the same field, type and year. 5 of the 18 papers scored for it are among the world's most cited tenth for their field, type and year.

POSITIONS

Lecturer 2020–present
Chemical Engineering, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

Assistant Lecturer 2016–2020
Chemical Engineering, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

Snr. Instructor 2009–2011
Energy Systems Engineering, Koforidua Technical University, Koforidua, Ghana

National Service Person (Teaching, Research and Administrative Assistant) 2008–2009
Chemical Engineering, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

EDUCATION AND QUALIFICATIONS

PhD 2013–2019
Chemical Engineering, Norwegian University of Science and Technology, Trondheim, Norway

MSc. 2011–2013
Chemical Engineering, Norwegian University of Science and Technology, Trondheim, Norway

BSc 2004–2008
Chemcal Engineeing, Kwame Nkrumah University of Science and Technology College of Engineering, Kumasi, Ghana

PUBLICATIONS

Journal articles 26

1. KA Tutu, M Owusu, **MF Baidoo** (2026). Advancing Stone Matrix Asphalt Sustainability Through Full Replacement of Conventional Aggregates with Steel Slag and Palm Kernel Shell Ash: KA Tutu et al. *International Journal of Pavement Research and Technology*.
2. Richard Arthur, Samuel Nketia Boateng, Isaac Mbir Bryant, **Martina Francisca Baidoo**, Paul A. Scherer (2026). Analytical Techniques for Heavy Metal Monitoring in Environmental Samples Related to Biogas Producing Systems: A Multi-Criteria Review. *Critical Reviews in Analytical Chemistry*. https://doi.org/10.1080/10408347.2026.2684627
3. Samuel Nketia Boateng, Richard Arthur, Isaac Mbir Bryant, **Martina Francisca Baidoo**, Joshua Hayford Nyarko (2026). Biogas Production from Mechanically Pretreated Rice Husk and Cow Paunch Content – Part 1: Experimental Performance of Co-Digestion System. *Waste Management & Research The Journal for a Sustainable Circular Economy*. https://doi.org/10.1177/0734242x261472601
4. Isaac Mbir Bryant, Samuel Nketia Boateng, Richard Arthur, **Martina Francisca Baidoo** (2026). Characterization and gaussian process modelling of cow paunch content and mechanically pretreated rice husk co-substrates for enhanced biogas production. *Journal of Material Cycles and Waste Management*. https://doi.org/10.1007/s10163-026-02567-7
5. Opeyemi Antoinette Gbadewole, Kenneth Adomako Tutu, Ahmed Kudu Mohammed, Michael Suma Appiah, **Martina Francisca Baidoo**, Yaw Adubofour Tuffour (2026). Performance characterization of asphalt mixtures containing steel slag, palm oil clinker and high-density polyethylene. *Discover Civil Engineering*. https://doi.org/10.1007/s44290-026-00604-w
6. Kenneth Adomako Tutu, Collins Abrefa Nketiah, Michael Owusu, **Martina Francisca Baidoo** (2025). Advancing Stone Matrix Asphalt Sustainability Through Full Replacement of Conventional Aggregates with Steel Slag and Palm Kernel Shell Ash. *International Journal of Pavement Research and Technology*. https://doi.org/10.1007/s42947-025-00505-8
7. Eunice Akyereko Adjei, God'sable Sitsofe Koku Aidam, Richard Opoku, **Martina Francisca Baidoo**, Nana Yaw Asiedu, Charles Kofi Kafui Sekyere, George Yaw Obeng (2025). Bridging renewable energy policy and sustainable aviation fuel deployment: empirical insights from biomass resources in West Africa. *Next research.*. https://doi.org/10.1016/j.nexres.2025.101065
8. Richard Arthur, Clement Nyamekye, Samuel Kwofie, **Martina Francisca Baidoo** (2025). Integrated assessment of bio-methane potential from cocoa pod husk in Ghana using physicochemical characterisation and geospatial techniques. *Scientific African*. https://doi.org/10.1016/j.sciaf.2025.e02795
9. J. K. Dadson, N. Y. Asiedu, J. A. Iggo, L. Konstantin, J. Ackora-Pra, **M. F. Baidoo**, O. Akoto (2024). A proposed two-level classification approach for forensic detection of diesel adulteration using NMR spectroscopy and machine learning. *Analytical and Bioanalytical Chemistry*. https://doi.org/10.1007/s00216-024-05384-9
10. Blissbern Appiagyei Osei-Owusu, Richard Arthur, **Martina Francisca Baidoo**, Sampson Oduro-Kwarteng, Andrew N. Amenaghawon (2024). Anaerobic co-digestion of human excreta, food leftovers and kitchen residue: 1 ternary mixture design, synergistic effects and RSM approach. *Heliyon*. https://doi.org/10.1016/j.heliyon.2024.e24080
11. Augustine Owusu Sekyere, **Martina Francisca Baidoo**, Godfred Ohemeng-Boahen, Helen MK Essandoh (2024). Design optimization of ceramic membrane filters based on a response surface method. *Composites and Advanced Materials*. https://doi.org/10.1177/26349833241295778
12. Ohemeng-Boahen Godfred, HMK Essandoh, **MF Baidoo** (2024). Fabrication and characterization of a cost-effective ceramic microfiltration membrane by utilizing local raw materials. *Advances in Applied Ceramics*. https://doi.org/10.1177/17436753261492391
13. Enoch Asante, Richard Arthur, Emmanuel Okoh Agyemang, **Martina Francisca Baidoo**, Nana Yaw Asiedu (2023). Experimental simulation and kinetic modeling of bioenergy potential of Eichornia crassipes

biomass from the Volta River basin of Ghana under mesophilic conditions. *Scientific African*. https://doi.org/10.1016/j.sciaf.2023.e02032

14. Blissbern Appiagyei Osei-Owusu, **Martina Francisca Baidoo**, Richard Arthur, Sampson Oduro-Kwarteng (2023). Physico-chemical characterization of selected feedstocks as co-substrates for household biogas generation in Ghana. *International Journal of Sustainable Engineering*. https://doi.org/10.1080/19397038.2023.2214167
15. Afari Michael Baidoo, **Baidoo** (2022). FEASIBILITY STUDY OF BIOMASS RESIDUE AVAILABILITY AND BIOFUEL PRODUCTION IN THE GAMBIA. *Journal of Sustainable Energy*. https://www.academia.edu/download/92713812/FEASIBILITY_STUDY_OF_BIOMASS_RESIDUE_AVAILABILITY_AND_BIOFUEL_PRODUCTION_IN_THE_GAMBIA.pdf
16. **Martina Francisca Baidoo**, Eunice Akyereko Adjei, Richard Opoku, God'sable Sitsofe Koku Aidam (2022). Rubber seed oil: Potential feedstock for aviation biofuel production. *Scientific African*. https://doi.org/10.1016/j.sciaf.2022.e01393
17. Richard Arthur, **Martina Francisca Baidoo**, Gabriel Osei, Linda Boamah, Samuel Kwofie (2020). Evaluation of potential feedstocks for sustainable biogas production in Ghana: Quantification, energy generation, and CO 2 abatement. *Sustainable Environment*. https://doi.org/10.1080/23311843.2020.1868162
18. **MF Baidoo** (2018). Descriptors for Alkali Metal Promotion in Redox Catalysis: Ethylene Oxychlorination. *AIDIC*. https://scholar.google.com/scholar?cluster=10978460900324184 05&hl=en&oi=scholarr
19. **MF Baidoo** (2018). On the effects of K and La co-promotion on CuCl2/γ-Al2O3 catalysts for the oxychlorination of ethylene. *Catalysis Today*. https://www.sciencedirect.com/science/article/pii/S0920586117304819
20. **MF Baidoo** (2018). SUSTAINABILITY ANALYSIS OF OIL PALM PROCESSING: A HOLISTIC APPROACH. *Impacts and Challenges in Oil Palm Production and Downstream Applications*. https://scholar.google.com/scholar?cluster=4100746373547548697&hl=en&oi=scholarr
21. **MF Baidoo** (2017). Understanding of potassium promoter effects on oxychlorination of ethylene by operando spatial-time resolved UV–vis–NIR spectrometry. *Journal of catalysis*. https://www.sciencedirect.com/science/article/pii/S0021951717301367
22. **MF Baidoo** (2016). Highly Active and Stable CeO2-Promoted CuCl2/Al2O3 Oxychlorination Catalysts Developed by Rational Design Using a Rate Diagram of the Catalytic Cycle. *ACS Catalysis*. https://pubs.acs.org/accacs/article-abstract/6/10/7030/1420642
23. Richard Arthur, **Martina Francisca Baidoo**, Abeeku Brew-Hammond, Edem Cudjoe Bensah (2011). Biogas generation from sewage in four public universities in Ghana: A solution to potential health risk. *Biomass and Bioenergy*. https://doi.org/10.1016/j.biombioe.2011.04.019
24. **FB Martina** (2011). Edward Antwi."Biogas as A Potential Energy Source: A Ghanaian Case Study.". *Renewable Energy*. https://scholar.google.com/scholar?cluster=15228913282714074349&hl=en&oi=scholarr
25. Richard Arthur, **Martina Francisca Baidoo** (2011). Harnessing methane generated from livestock manure in Ghana, Nigeria, Mali and Burkina Faso. *Biomass and Bioenergy*. https://doi.org/10.1016/j.biombioe.2011.09.009
26. Richard Arthur, **Martina Francisca Baidoo**, Edward Antwi (2010). Biogas as a potential renewable energy source: A Ghanaian case study. *Renewable Energy*. https://doi.org/10.1016/j.renene.2010.11.012

Book chapters 1

1. **Martina Francisca Baidoo**, Nana Yaw Asiedu, Lawrence Darkwah, David Arhin-Dodoo, Jun Zhao, Francois Jerome, Prince Nana Amaniampong (2022). Conventional and Unconventional Transformation of Cocoa Pod Husks into Value-Added Products. *IntechOpen eBooks*. https://doi.org/10.5772/intechopen.102606