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RESEARCH

Interests	Energy materials · nanomaterials · nanotechnology · composite materials · wastewater treatment
Areas	Electronic, Optical and Magnetic Materials · Electrical and Electronic Engineering · Biomaterials · Polymers and Plastics · Biomedical Engineering · Pollution

RESEARCH SUMMARY

57	1,016	19	24	1.31	11%
Publications	Citations	h-index	i10-index	Field-weighted impact	World top 10%

Counted from the 57 publications listed below, 2015–2026. Field-weighted impact is the mean over the 47 works scored for it; 1.00 is the world average for works of the same field, type and year. 5 of the 47 papers scored for it are among the world's most cited tenth for their field, type and year.

POSITIONS

Kwame Nkrumah University of Science and Technology 2018–present
Materials and Metallurgical Engineering, Kumasi, Ghana

Kwame Nkrumah University of Science and Technology
Kumasi, Ghana

PUBLICATIONS

Journal articles 55

1. Daniel Nframah Ampong, Emmanuel Agyekum, Perseverance Dzikunu, Emmanuel Acheampong Tsiwah, Martin Luther Yeboah, Patrick Aggrey, Martinson Addo Nartey, **Frank Ofori Agyemang**, Kwadwo Mensah-Darkwa, Ram K. Gupta (2026). Exploring the potential of 1D materials in enhancing lithium-sulfur battery performance: A comprehensive review. *Materials Today Nano*. https://doi.org/10.1016/j.mtnano.2026.100783
2. D Ocloo, **FO Agyemang**, B Koomson, K Mensah-Darkwa (2026). Palm Kernel Shell as a Precursor for CDI Electrodes: A versatile platform for synthesis, properties, and water pollutant removal. *Next Research*. https://www.sciencedirect.com/science/article/pii/S3050475926007244
3. Daniel Nframah Ampong, Wang Lin, Vikram Kishore Bharti, Felipe M. de Souza, **Frank Ofori Agyemang**, Anthony Andrews, Kwadwo Mensah-Darkwa, Yongdan Hou, Ram K. Gupta (2025). Biowaste-based hierarchical porous carbon/sulfur composite derived from sustainable fabrication technique as cathode material for Li–S batteries. *Journal of Materials Science*. https://doi.org/10.1007/s10853-025-11620-z
4. Eugene Sefa Appiah, Samuel Olukayode Akinwamide, Eric A. K. Fangnon, Kwadwo Mensah-Darkwa, Anthony Andrews, **Frank Ofori Agyemang**, Martinson Addo Nartey, Katlego Makgopa, Mahadeen N. Nashiru, Pedro Vilaca (2025). Electrochemical assessment of nanostructured phosphorus-doped Fe2O3 via diatomite template as a pseudocapacitive electrode material. *Chemical Papers*. https://doi.org/10.1007/s11696-025-04338-4
5. Perseverance Dzikunu, Emmanuel Kwesi Arthur, Emmanuel Gikunoo, Elike Bleppony, Daniel Nframah Ampong, **Frank Ofori Agyemang**, Ruth Ebela Kwofie, Kwadwo Mensah-Darkwa (2025). Energy storage capabilities of spent pot lining and ZnO composite for supercapacitor applications. *Next Materials*. https://

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6. Daniel Nframah Ampong, Emmanuel Agyekum, Perseverance Dzikunu, Daniel Ocloo, Isaac Clottey, Patrick Aggrey, Martinson Addo Nartey, **Frank Ofori Agyemang**, Kwadwo Mensah-Darkwa, Ram K. Gupta (2025). Harnessing hydrogels for electrochemical energy and environmental sustainability. *Renewable and Sustainable Energy Reviews*. https://doi.org/10.1016/j.rser.2025.116628
7. Seth Adusei, Emmanuel Kwesi Arthur, Emmanuel Gikunoo, William Amponsah, **Frank Ofori Agyemang**, Godfred Ohemeng-Boahen (2025). Heavy Metal Pollution From Illegal Mining 'Galamsey ' Activities on the Viability of Clarias gariepinus in the Oda River, Ghana. *Aquaculture Fish and Fisheries*. https://doi.org/10.1002/aff2.70076
8. Daniel Nframah Ampong, Wang Lin, Felipe M. de Souza, **Frank Ofori Agyemang**, Anthony Andrews, Kwadwo Mensah-Darkwa, Ram K. Gupta (2025). Nitrogen-doped hierarchical porous carbon derived from shea nut shell for high-performance supercapacitor and LiS battery. *Next research.*. https://doi.org/10.1016/j.nexres.2025.100722
9. Anthony Kwasi Martey, **Frank Ofori Agyemang**, Kwadwo Mensah-Darkwa, Daniel Ocloo (2025). Phosphoric acid modified starch as a binder for supercapacitor electrode in 3 M H2SO4. *Next research.*. https://doi.org/10.1016/j.nexres.2025.100192
10. Joshua Atta Alabi, Neda Nazari, Daniel Nframah Ampong, **Frank Ofori Agyemang**, Mark Adom-Asamoah, Richard Opoku, Rene Zahrhuber, Christoph Unterweger, Kwadwo Mensah-Darkwa (2025). Synthesis of Physically Activated Carbons from Vitellaria paradoxa Shells for Supercapacitor Electrode Applications. *Inorganics*. https://doi.org/10.3390/inorganics13070224
11. William Ofori Brefo, Andrews Kwame Osei, Gifty Durowaa Twum, Eugene Agyemang-Duah, **Frank Ofori Agyemang**, Japheth Ankamah Brefo (2025). Treatment of lead-contaminated water using a PVDF-expanded graphite membrane composite synthesized from carbon-based waste bottles. *World Journal of Advanced Engineering Technology and Sciences*. https://doi.org/10.30574/wjaets.2025.16.1.1223
12. Daniel Ocloo, **Frank Ofori Agyemang**, Perseverance Dzikunu, Bennetta Koomson, Godfred Ohemeng-Boahen, Elizabeth Henewaa Akoto, Anthony Kwesi Martey (2025). Waste PET bottle-derived carbon for defluorination of fluoride-polluted water. *Environmental Technology*. https://doi.org/10.1080/09593330.2024.2447960
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14. Eugene Sefa Appiah, Perseverance Dzikunu, Samuel Olukayode Akinwamide, Eric A. K. Fangnon, Kwadwo Mensah-Darkwa, Anthony Andrews, **Frank Ofori Agyemang**, Martinson Addo Nartey, Katlego Makgopa, Sven Bossuyt (2024). A review on progress and prospects of diatomaceous earth as a bio-template material for electrochemical energy storage: synthesis, characterization, and applications. *Ionics*. https://doi.org/10.1007/s11581-024-05825-6
15. Daniel Nframah Ampong, Elijah Effah, Emmanuel Acheampong Tsiwah, Anuj Kumar, Emmanuel Agyekum, Esther Naa Ayorkor Doku, Obed Issaka, **Frank Ofori Agyemang**, Kwadwo Mensah-Darkwa, Ram K. Gupta (2024). Advances and challenges in covalent organic frameworks as an emerging class of materials for energy and environmental concerns. *Coordination Chemistry Reviews*. https://doi.org/10.1016/j.ccr.2024.216121
16. 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
17. Eugene Sefa Appiah, Samuel Olukayode Akinwamide, Eric A.K. Fangnon, Kwadwo Mensah-Darkwa, Anthony Andrews, **Frank Ofori Agyemang**, Martinson Addo Nartey, Katlego Makgopa, Pedro Vilaça (2024). Corrosion behaviour of Cu-plate current collector under ex-situ cyclic stability testing for energy storage application. *Next Materials*. https://doi.org/10.1016/j.nxmate.2024.100430
18. Desmond Ankobiah Kusi, Emmanuel Kwesi Arthur, Emmanuel Gikunoo, Perseverance Dzikunu, Kwabena

Koranteng Asiedu, Richard Armoo, **Frank Ofori Agyemang** (2024). Electrochemical performance of chemically treated pyrolytic carbon black from waste car tyres. *Energy Nexus*. https://doi.org/10.1016/j.nexus.2024.100297

19. Daniel Nframah Ampong, Perseverance Dzikunu, **Frank Ofori Agyemang**, Patrick Aggrey, Martinson Addo Nartey, Amit Kumar Pal, Emmanuel Gikunoo, Anthony Andrews, Kwadwo Mensah-Darkwa, Ram K. Gupta (2024). Facile Synthesis of Colocasia esculenta Peels-Derived Activated Carbon for High-Performance Supercapacitor. *Energy Storage*. https://doi.org/10.1002/est2.70057
20. **Frank Ofori Agyemang**, Kwadwo Mensah-Darkwa, Nashiru Mahadeen Nanzumani, Eugene Sefa Appiah, Frederick Aziadzo, Patrick Aggrey, Daniel Nframah Ampong, Martinson Addo Nartey, Emmanuel Kwesi Arthur, Emmanuel Gikunoo, Ram K. Gupta (2024). Graphene oxide from coconut shells for high-performance supercapacitor application. *Discover Electrochemistry*.. https://doi.org/10.1007/s44373-024-00005-7
21. Lamin Darboe, **Frank Ofori Agyemang**, Yongdan Hou Gbologah, Anthony Andrews, Kwadwo Mensah Darkwa (2024). Green Synthesis of Chlorophyta Seaweed Mediated Mn 3 O 4 Nanoparticles: Electrochemical Applications and Evaluation of Capacitive and Diffusive Contributions. *Analytical Letters*. https://doi.org/10.1080/00032719.2024.2367008
22. Eugene Sefa Appiah, Kwadwo Mensah-Darkwa, Anthony Andrews, **Frank Ofori Agyemang**, Martinson Addo Nartey, Katlego Makgopa, Yongdan Hou, Patrick Aggrey, David Ato Quansah (2024). Tailoring a hierarchical porous carbon electrode from carbon black via 3D diatomite morphology control for enhanced electrochemical performance. *Nanoscale Advances*. https://doi.org/10.1039/d4na00680a
23. Daniel Nframah Ampong, Wang Lin, Felipe M. de Souza, Vikram Kishore Bharti, **Frank Ofori Agyemang**, Anthony Andrews, Kwadwo Mensah-Darkwa, Alisha Dhakal, Sanjay R. Mishra, Felio Perez, Ram K. Gupta (2024). Utilization of shea butter waste-derived hierarchical activated carbon for high-performance supercapacitor applications. *Bioresource Technology*. https://doi.org/10.1016/j.biortech.2024.131039
24. Douglas Siaw Baah, Emmanuel Gikunoo, Emmanuel Kwesi Arthur, **Frank Ofori Agyemang**, Gordon Foli, Bennetta Koomson, Philipa Opoku (2023). Anthropogenic Sources and Risk Assessment of Heavy Metals in Mine Soils: A Case Study of Bontesso in Amansie West District of Ghana. *Journal of Chemistry*. https://doi.org/10.1155/2023/6760154
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26. John Ato Koomson, Bennetta Koomson, Clement Owusu, **Frank Ofori Agyemang** (2023). Detoxification of lead and arsenic from galamsey polluted water using nano synthesized iron oxide from cupola furnace slag. *Materials Chemistry and Physics*. https://doi.org/10.1016/j.matchemphys.2023.128301
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28. Elike Bleppony, Emmanuel Kwesi Arthur, Emmanuel Gikunoo, Perseverance Dzikunu, **Frank Ofori Agyemang**, Kwadwo Mensah-Darkwa (2023). Four-stage chemical treatment of spent pot lining carbon for titanium oxide doped high performance supercapacitor electrode material. *Next Materials*. https://doi.org/10.1016/j.nxmate.2023.100022
29. Daniel Nframah Ampong, Emmanuel Agyekum, **Frank Ofori Agyemang**, Kwadwo Mensah-Darkwa, Anthony Andrews, Anuj Kumar, Ram K. Gupta (2023). MXene: fundamentals to applications in electrochemical energy storage. *Discover Nano*. https://doi.org/10.1186/s11671-023-03786-9
30. Kwadwo Mensah-Darkwa, Daniel Nframah Ampong, Emmanuel Acheampong Tsiwah, Anuj Kumar, Martinson Addo Nartey, Patrick Aggrey, **Frank Ofori Agyemang**, Ram K. Gupta (2023). Realization of molecular models as heterogeneous electrocatalysts for activation of dioxygen. *Molecular Catalysis*.

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34. Kwadwo Mensah-Darkwa, Eugene Sefa Appiah, Anjali Gupta, Mahadeen Nanzumani Nashiru, Daniel Nframah Ampong, **Frank Ofori Agyemang** (2022). Biowaste-based Porous Carbon for Supercapacitors: Synthesis, Fabrication and Electrochemical Performances: A Review. *Current Materials Science*. https://doi.org/10.2174/2666145415666220517103417
35. Prince Baffour Awuah, Albert Amatey Adjaottor, Emmanuel Gikunoo, Emmanuel Kwesi Arthur, **Frank Ofori Agyemang**, Douglas Siaw Baah (2022). Dust Deposition and Associated Heavy Metal Contamination in the Neighborhood of a Cement Production Plant at Konongo, Ghana. *Journal of Chemistry*. https://doi.org/10.1155/2022/6370679
36. Nashiru Mahadeen Nanzumani, **Frank Ofori Agyemang**, Kwadwo Mensah-Darkwa, Eugene Sefa Appiah, Emmanuel Kwesi Arthur, Emmanuel Gikunoo, Bennetta Koomson, Amol R. Jadhav, Akeem Raji (2022). Molten salt synthesis of nitrogen-doped hierarchical porous carbon from plantain peels for high-performance supercapacitor. *Journal of Electroanalytical Chemistry*. https://doi.org/10.1016/j.jelechem.2022.116645
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38. Perseverance Dzikunu, Emmanuel Kwesi Arthur, Emmanuel Gikunoo, Elike Bleppony, **Frank Ofori Agyemang**, Kwadwo Mensah-Darkwa (2022). Successive selective leaching procedures for valorization of spent pot lining carbon. *Process Safety and Environmental Protection*. https://doi.org/10.1016/j.psep.2022.11.008
39. Andrews Amoako Atta, Emmanuel Kwesi Arthur, Emmanuel Gikunoo, **Frank Ofori Agyemang**, Kwadwo Mensah-Darkwa (2022). Thermochromic properties of composite materials made from polylactic acid reinforced with recovered liquid crystals from waste LCD/LED laptops screens. *Optical Materials*. https://doi.org/10.1016/j.optmat.2022.112485
40. Kwadwo Mensah-Darkwa, **Frank Ofori Agyemang**, Stefania Akromah, Emmanuel Kwesi Arthur, Fuseini Abdallah, Emmanuel Gikunoo (2021). A comparative study on the performance of activated carbon electrodes and activated carbon/titanium dioxide nanotubes hybrid electrodes. *Scientific African*. https://doi.org/10.1016/j.sciaf.2021.e00786
41. Felix Odom, Emmanuel Gikunoo, Emmanuel Kwesi Arthur, **Frank Ofori Agyemang**, Kwadwo Mensah-Darkwa (2021). Stabilization of heavy metals in soil and leachate at Dompoase landfill site in Ghana. *Environmental Challenges*. https://doi.org/10.1016/j.envc.2021.100308
42. Rita Namoe Tabi, **Frank Ofori Agyemang**, Kwadwo Mensah-Darkwa, Emmanuel Kwesi Arthur, Emmanuel Gikunoo, Francis Momade (2021). Zeolite synthesis and its application in water defluorination. *Materials Chemistry and Physics*. https://doi.org/10.1016/j.matchemphys.2021.124229
43. Kwadwo Mensah-Darkwa, **Frank Ofori Agyemang**, Daniel Yeboah, Stefania Akromah (2020). Dye-sensitized solar cells based on graphene oxide and natural plant dye extract. *Materials Today Proceedings*. https://doi.org/10.1016/j.matpr.2020.02.391

44. Nana Yaw Sarpong, **Frank Ofori Agyemang**, Daniel E.K.A Siaw, Essakku Menason (2020). EFFECT OF DIFFERENT LEVELS OF I.B.A CONCENTRATION ON CLONAL PROPAGATION OF EUCALYPTUS SPECIES IN GHANA WEST AFRICA. *Tropical Agroecosystems*. https://doi.org/10.26480/taec.01.2021.26.29

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46. EK Arthur, E Gikunoo, **FO Agyemang**, A Andrews (2020). Material selection for water pipes by the multi-objective decision-making method: the case of alternative materials for PVC pipes. *J. Sci. Technol*. https://www.researchgate.net/profile/Salifu-Azeko/publication/341120909_Material_Selection_for_Water_Pipes_by_the_Multi-Objective_Decision-Making_Method_The_Case_of_Alternative_Materials_for_PVC_Pipes/links/5eafef6592851cb267731354/Material-Selection-for-Water-Pipes-by-the-Multi-Objective-Decision-Making-Method-The-Case-of-Alternative-Materials-for-PVC-Pipes.pdf

47. Gracita M. Tomboc, **Frank Ofori Agyemang**, Hern Kim (2018). Improved electrocatalytic oxygen evolution reaction properties using PVP modified direct growth Co-based metal oxides electrocatalysts on nickel foam. *Electrochimica Acta*. https://doi.org/10.1016/j.electacta.2018.01.065

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Book chapters 1

1. K Mensah-Darkwa, **FO Agyemang**, DN Ampong (2021). Conducting Polymer-Based Flexible Supercapacitors. *Conducting Polymers for Advanced Energy Applications*. https://books.google.com/books?hl=en&lr=&id=BSRLEAAAQBAJ&oi=fnd&pg=PA97&dq=info:d4No5A5SKUkJ:scholar.google.com&ots=Kgk6TwI1M_&sig=F9ny-abDUTHn7m3BceV80hVLQrg

Reports 1

1. Akwasi Acheampong, **FO Agyemang**, A Brobbey, 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