Francis Opoku

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PROFILE

Dr Francis Opoku is a Senior lecturer in the Department of Chemistry at the Kwame Nkrumah University of Science and Technology (KNUST), Ghana. He graduated cum laude with his B.Sc. (Hons) Chemistry (2010) and M. Phil. Inorganic Chemistry (2014) degrees from KNUST, Ghana. He received his PhD in Chemistry from the University of Johannesburg, South Africa in 2019 with Prof. Penny Govender, focusing on first–principles studies on the development of semiconductor–based photocatalyst materials for applications in photocatalytic water splitting and degradation of pollutants. He obtained the University of Johannesburg Global Excellence and Stature (UJ-GES) Fellowship during his PhD studies. He continued his research career as a postdoc in Prof. Penny P. Govender's lab for high-throughput design of an ultrasensitive sensor for detection of volatile organic compounds, toxic gases and biomolecules using the synergic effect of two-dimensional van der Waals heterostructures. I am working on collaborative projects with the Department of Biochemistry/UJ (Dr M Simelane); School of Resources and Enviroment, University of Electronic Science and Technology, China (Prof Hassan Karimi-Maleh) and a German collaborator from Technische Universität Berlin (Dr Mirabbos Hojamberdiev). I have supervised two master students. I am also a member of the South African Chemical Institute, Water Institute of South Africa, Royal Society of Chemistry and Ghana Science Association. His research interests focused on the design of novel two-dimensional materials with applications in water splitting, photodegradation of organic pollutants, molecular and gas sensors, optoelectronic device, thermoelectric and photovoltaic cell.

RESEARCH

Interests	Computational Chemistry & Materials · Water and food quality assessment · Photocatalysis · Gas and · Energy and Environment Management · Water Treatment · Photovoltaic cells · Optoelectronic and Electronic Device · Fuel Cell · Sensors
Areas	Materials Chemistry · Renewable Energy, Sustainability and the Environment · Electrical and Electronic Engineering · Pollution · Water Science and Technology · Electronic, Optical and Magnetic Materials

RESEARCH SUMMARY

87	2,398	28	48	1.60	16%
Publications	Citations	h-index	i10-index	Field-weighted impact	World top 10%

Counted from the 87 publications listed below, 2014–2026. Field-weighted impact is the mean over the 81 works scored for it; 1.00 is the world average for works of the same field, type and year. 13 of the 81 papers scored for it are among the world's most cited tenth for their field, type and year.

POSITIONS

Senior Lecturer 2024–present
Chemistry, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

Lecturer 2020–2024
Chemistry, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

Post Doctural Researchers 2019–2021

Chemical Sciences, University of Johannesburg - Doornfontein Campus, Doornfontein, South Africa

Tutor 2017–2019
Department of Chemical Sciences, University of Johannesburg - Doornfontein Campus, Doornfontein, South Africa

Research and Teaching Assistant 2010–2011
Chemistry, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

EDUCATION AND QUALIFICATIONS

PhD Chemistry 2016–2019
Chemical Sciences, University of Johannesburg - Doornfontein Campus, Doornfontein, South Africa

MPhil Inorganic Chemistry 2011–2014
Kwame Nkrumah University of Science and Technology College of Science, Kumasi, Ghana

BSc Chemistry (First class, Hons) 2006–2010
Kwame Nkrumah University of Science and Technology College of Science, Kumasi, Ghana

DISTINCTIONS, MEMBERSHIPS AND SERVICE

Ghana Science Association 2021–present
Legon, Ghana

Water Institute of Southern Africa
Midrand, South Africa

South African Chemical Institute
Johannesburg, South Africa

Royal Society of Chemistry
London, United Kingdom

PUBLICATIONS

Journal articles 86

1. Elikplim Nyabi, Andrews Ayim Oduro, Roland Tsoeke Agbetsi, Gideon Addai, Sampson Kofi Kyei, **Francis Opoku**, Ray Bright Voegborlo, Eric Selorm Agorku (2026). Activated clay/ Opuntia microdasys incorporated polyvinyl alcohol membranes for fouling mitigation in wastewater filtration. *Materials Advances*. https://doi.org/10.1039/d5ma00423c
2. Lawrence Owusu Opoku, Mohammed Abdul Rasheed, Noah Kyame Asare-Donkor, **Francis Opoku** (2026). Enhanced multifunctional performance of 2D BP/MoSSe van der Waals heterostructure: Assessing water splitting, CO2 reduction, and thermoelectric properties. *Next research.*. https://doi.org/10.1016/j.nexres.2026.101615
3. Moro Haruna, Eric Selorm Agorku, Noah Kyame Asare-Donkor, **Francis Opoku** (2026). First-principles investigation of a promising type-II SiN/SiCH van der Waals heterojunction with superior optical absorption, electronic properties and photocatalytic potential for overall water-splitting. *Molecular Catalysis*. https://doi.org/10.1016/j.mcat.2026.115845
4. **Francis Opoku**, Albert Aniagyei, James Kwame Kusi, Noah Kyame Asare-Donkor (2026). High-performance In2OS/BTe van der Waals heterojunction for efficient solar-to-hydrogen conversion. *Surfaces and Interfaces*. https://doi.org/10.1016/j.surfin.2026.110000
5. Moro Haruna, Eric Selorm Agorku, Noah Kyame Asare–Donkor, **Francis Opoku** (2026). Highly efficient photocatalytic water splitting in Type–II InP/BiSeI van der Waals heterostructures: A first–principles insight. *Journal of Physics and Chemistry of Solids*. https://doi.org/10.1016/j.jpcs.2026.114116

6. Atta Alhassan, Mary Nkansah Konadu, Elikplim Nyabi, Ahmed Kangmennaa, Timothy Kofi Amegbletor, Mandela Toku, **Francis Opoku**, Ray Bright Voegborlo, Eric Selorm Agorku (2026). Sodium alginate grafted polyacrylamide reinforced with coir pith for hydrocarbon removal in simulated saline water. *Next Materials*. https://doi.org/10.1016/j.nxmate.2026.103095

7. Mohammed Abdul Rasheed, Lawrence Owusu Opoku, Joseph Apau, **Francis Opoku** (2026). Strain-engineered type II SiC/Al2OS van der waals heterostructure with efficient charge separation for photocatalytic water splitting. *International Journal of Hydrogen Energy*. https://doi.org/10.1016/j.ijhydene.2026.155999

8. Blessing Fadzai Masora, Krishna Kuben Govender, **Francis Opoku**, Penny Poomani Govender (2026). Structural, electronic, and electrochemical properties of PtO2/AlN van der Waals heterostructure as an anode material for lithium-ion batteries: A DFT investigation. *Materials Science in Semiconductor Processing*. https://doi.org/10.1016/j.mssp.2026.110583

9. Blessing Fadzai Masora, Krishna Kuben Govender, **Francis Opoku**, Penny Poomani Govender (2025). A first-principles study of RuClF/AlN van der Waals heterostructure for potential use as anode for lithium-ion batteries. *New Journal of Chemistry*. https://doi.org/10.1039/d5nj04360c

10. Moro Haruna, Charles Kwame Bandoh, **Francis Opoku**, Eric Selorm Agorku (2025). Ab initio and experimental study of sulphur/samarium codoped-TiO2 and its visible light photocatalytic activity towards the degradation of orange II dye. *Next Sustainability*. https://doi.org/10.1016/j.nxsust.2025.100155

11. Elikplim Nyabi, Roland Tsoeke Agbetsi, Gideon Addai, **Francis Opoku**, Mandela Toku, Ray Bright Voegborlo, Eric Selorm Agorku (2025). Activated clay and cocoa nib shells-integrated polyvinyl alcohol membranes for fouling mitigation in water treatment. *Next Sustainability*. https://doi.org/10.1016/j.nxsust.2025.100136

12. **Francis Opoku**, Eric Selorm Agorku, Albert Aniagyei, Penny Poomani Govender (2025). Boosting photocatalytic hydrogen evolution through a Z-scheme BlueP/GaGeNO van der Waals heterostructure design. *Physical Chemistry Chemical Physics*. https://doi.org/10.1039/d5cp03878b

13. Potlako J. Mafa, Mope E. Malefane, **Francis Opoku**, Adewale O. Oladipo, Gcina Mamba, Tunde L. Yusuf, Jemal Fito Nure, Sogolo L. Lebelo, Dan Liu, Jianzhou Gui, Bhekie B. Mamba, Alex T. Kuvarega (2025). Dual Charge Transfer Mechanisms in Intimately Bonded S-scheme Heterojunction Photocatalyst with Expeditious Activity toward Environmental Remediation. *Advanced Sustainable Systems*. https://doi.org/10.1002/adsu.202401070

14. Kofi Duodu, Gerheart Winfred Ashong, **Francis Opoku**, Nathaniel Owusu Boadi, Eric Selorm Agorku (2025). Equilibrium, kinetic and thermodynamic studies of the adsorption of Congo red on nZVI/Zn-Al layered double hydroxide intercalated with PO43− ion. *Discover Sustainability*. https://doi.org/10.1007/s43621-025-00979-3

15. **Francis Opoku**, Eric Selorm Agorku, Michael Kumi, Penny Poomani Govender (2025). Exploring the anodic performance of InSnPS/GaGeAsSe heterostructure as an ultra-high rate rechargeable Li ion battery via first-principles study. *Physical Review Materials*. https://doi.org/10.1103/vlv3-13gd

16. Jonathan Awewomom, Theresa Yvonne Arhin, Yaw Doudu Takyi, Agyei Gyasi Yaw, Janet Saaka, **Francis Opoku**, Marina Aferiba Tandoh, Emmanuel Adu Amankwah, Osei Akoto (2025). Exposure and Health Impact Assessment of Essential and Non-essential Elements in Rice Sold on Ghanaian Markets. *Environmental Health Insights*. https://doi.org/10.1177/11786302251350482

17. Joseph Kofi Abankwah, Eunice Dotse, Felix Boahen Owusu, Hagnes Ofori-Attah, **Francis Bonsu Opoku**, Lidya Tesfaye Teka, Eugene Ofori Asante, Regina Appiah-Opong, Alexander K. Nyarko (2025). Tetrapleura tetraptera fruit (Schumach. & Thonn.) Taub. as a prospective anti-prostate cancer agent revealed through network pharmacology, molecular docking and dynamics, and in vitro studies. *Journal of Ethnopharmacology*. https://doi.org/10.1016/j.jep.2025.120168

18. Moro Haruna, Agnes Tutuwaa, Mandela Toku, **Francis Opoku**, Eric Selorm Agorku, Noah Kyame Asare-Donkor, Anthony Apeke Adimado (2025). The efficacy of cerium Codoped–ZrO2–rGO in degrading eosin yellow dye under visible light: A combined DFT calculation and mechanism insight. *Next Materials*. https://

doi.org/10.1016/j.nxmate.2025.100823

19. **Francis Opoku**, Eric Selorm Agorku, Samuel Osei-Bonsu Oppong, Edward Ebow Kwaansa-Ansah, Noah Kyame Asare-Donkor, Penny Poomani Govender (2025). Theoretical study on vertical B 2 CSe/Mg(OH) 2 van der Waals heterostructures with high solar-to-hydrogen efficiency. *New Journal of Chemistry*. https://doi.org/10.1039/d5nj00757g

20. **Francis Opoku**, Eric Selorm Agorku, Samuel Osei–Bonsu Oppong, Edward Ebow Kwaansa–Ansah, Noah Kyame Asare–Donkor, Penny Poomani Govender (2025). Visible–light–driven photocatalyst for solar–to–hydrogen efficiency via a Type–II SGaInS/GaGePS van der Waals heterostructure. *Applied Surface Science*. https://doi.org/10.1016/j.apsusc.2025.163433

21. Osei Akoto, BK Benjamin, D Azanu, **F Opoku**, LNA Sackey (2024). A review of health hazards associated with exposure to galamsey-related pollutants. *Health Sciences Investigations Journal*. https://www.ajol.info/index.php/hsij/article/view/275701

22. Winfred Bediakoh Ashie, Jonathan Awewomom, Emil Nana Yaw Osei Ettey, **Francis Opoku**, Osei Akoto (2024). Assessment of irrigation water quality for vegetable farming in peri-urban Kumasi. *Heliyon*. https://doi.org/10.1016/j.heliyon.2024.e24913

23. Norbert J. Jindor, Leticia P. Amenorfe, Ahmed Kangmennaa, Richard B. Forkuo, Harry Okyere, Nathaniel O. Boadi, **Francis Opoku**, Anthony A. Adimado, Eric S. Agorku (2024). Clay-Loaded Starch-Grafted Chitosan as Environmentally Controlled Release Material for Atrazine. *Applied and Environmental Soil Science*. https://doi.org/10.1155/aess/9985874

24. **Francis Opoku** (2024). Correction to: Addressing global environmental pollution using environmental control techniques: a focus on environmental policy and preventive environmental management …. *Discover Environment*. https://pure.uj.ac.za/en/publications/correction-to-addressing-global-environmental-pollution-using-env/

25. Moro Haruna, Charles Kwame Bandoh, Eric Selorm Agorku, **Francis Opoku**, Noah Kyame Asare–Donkor, Anthony Apeke Adimado (2024). Experimental and ab initio studies of enhance photocatalytic efficiency of La-doped ZnO/g-C3N4 nanocomposites for bromothymol blue dye degradation. *Next Materials*. https://doi.org/10.1016/j.nxmate.2024.100212

26. Potlako J. Mafa, Mope E. Malefane, **Francis Opoku**, Jianzhou Gui, Dan Liu, Bhekie B. Mamba, Alex T. Kuvarega (2024). Heightened photocatalytic performance of ZnMoO4 by incorporation of cobalt heteroatom to enhance oxygen defects for boosted pharmaceutical degradation. *Journal of Water Process Engineering*. https://doi.org/10.1016/j.jwpe.2024.106405

27. Eugenia Koranteng-Mantey, Charles Kessie, Eric Selorm Agorku, Edward Ebow Kwaansa-Ansah, Samuel Osei-Bonsu Oppong, **Francis Opoku** (2024). Interfacial Electronic States of GeC/g-C3N4 van der Waal Heterostructure with Promising Photocatalytic Activity via Hydrogenation. *ChemPhysChem*. https://doi.org/10.1002/cphc.202300947

28. **Francis Opoku**, Penny Govender, Addmore Shonhai, Mthokozisi BC Simelane (2024). Iso-mukaadial acetate and ursolic acid acetate bind to Plasmodium Falciparum heat shock protein 70: towards targeting parasite protein folding pathway. *BMC Chemistry*. https://doi.org/10.1186/s13065-024-01159-6

29. Ahmed Kangmennaa, Samuel Acquah, Richard Baffour Forkuo, John Kwabena Adusei, George Atiah Atongo, Flora Amerley Amarh, **Francis Opoku**, Eric Selorm Agorku (2024). Methylene blue dye adsorption on Ghana's activated clay from Teleku Bukazo. *Journal of Dispersion Science and Technology*. https://doi.org/10.1080/01932691.2023.2301481

30. Moro Haruna, Charles Kwame Bandoh, Eric Selorm Agorku, **Francis Opoku**, Noah Kyame Asare-Donkor, Anthony Apeke Adimado (2024). Synthesis of La-doped ZrO2/g-C3N4 nanocomposite for eosin yellow photodegradation: A combined experimental and theoretical studies. *Catalysis Communications*. https://doi.org/10.1016/j.catcom.2024.106852

31. Potlako J. Mafa, Mope E. Malefane, **Francis Opoku**, Amoudjata Sacko, Adewale O. Oladipo, Sogolo L. Lebelo, Dan Liu, Jianzhou Gui, Bhekie B. Mamba, Alex T. Kuvarega (2023). Experimental and theoretical confirmation of CeFeCu trimetal oxide/Bi2O3 S-scheme heterojunction for boosted photocatalytic degradation of sulfamethoxazole and toxicity evaluation. *Journal of Cleaner Production*. https://doi.org/

10.1016/j.jclepro.2023.139519

32. Theresa Yvonne Arhin, Awewomom Jonathan, **Francis Opoku**, Marina Aferiba Tandoh, Emmanuel Adu Amankwah, Osei Akoto (2023). Exposure and health risk assessment of transition metals in rice found on the Ghanaian market. *Environmental Monitoring and Assessment*. https://doi.org/10.1007/s10661-023-11167-z

33. **Francis Opoku**, Albert Aniagyei, Osei Akoto, Edward Ebow Kwaansa-Ansah, Noah Kyame Asare-Donkor, Anthony Apeke Adimado (2023). Investigation of 2D Janus Al2OS/Ga2SSe van der Waals heterojunction as next-generation thermoelectric and photocatalytic devices. *Next Materials*. https://doi.org/10.1016/j.nxmate.2023.100042

34. Moro Haruna, John Kwakye, Eric Selorm Agorku, **Francis Opoku**, Noah Kyame Asare-Donkor, Anthony Apeke Adimado (2023). La–doped ZnO–rGO nanocomposites: Synthesis and characterization as photocatalyst for effective degradation of bromothymol blue dye in water. *Results in Materials*. https://doi.org/10.1016/j.rinma.2023.100449

35. Eric S. Agorku, Ahmed Kangmennaa, Moro Haruna, **Francis Opoku** (2023). Photocatalytic activity of red emission PVA-GdVO 4 :Eu 3+ nanocomposite towards the degradation of Eosin Y in water. *Sustainable Environment*. https://doi.org/10.1080/27658511.2023.2266632

36. Marian Asantewah Nkansah, Mavis Korankye, Godfred Darko, Matt Dodd, **Francis Opoku** (2023). Potential health risk and bio-accessibility of metal and minerals in saltpetre (a food additive). *Heliyon*. https://doi.org/10.1016/j.heliyon.2023.e13174

37. **Francis Opoku**, Osei Akoto, Edward Ebow Kwaansa-Ansah, Noah Kyame Asare-Donkor, Anthony Apeke Adimado (2023). Rational design of 2D/2D CS/SiC van der Waals type-II heterojunctions: a visible-light-driven photocatalyst for hydrogen production. *Materials Advances*. https://doi.org/10.1039/d2ma01061e

38. **Francis Opoku**, Osei Akoto, Edward Ebow Kwaansa-Ansah, Noah Kyame Asare-Donkor, Anthony Apeke Adimado (2023). Role of BaTiO3 crystal surfaces on the electronic properties, charge separation and visible light–response of the most active (001) surface of LaAlO3: A hybrid density functional study. *Chemical Physics Impact*. https://doi.org/10.1016/j.chphi.2023.100236

39. Tunde Lewis Yusuf, Segun Ajibola Ogundare, **Francis Opoku**, Omotayo A. Arotiba, Nonhlagabezo Mabuba (2023). Theoretical and experimental insight into the construction of FTO/NiSe2/BiVO4 photoanode towards an efficient charge separation for the degradation of pharmaceuticals in water. *Journal of environmental chemical engineering*. https://doi.org/10.1016/j.jece.2023.110711

40. Potlako J. Mafa, Mope E. Malefane, **Francis Opoku**, Bhekie B. Mamba, Alex T. Kuvarega (2023). Visible light responsive MoS2/Ag@WO3/EG photoanode with highly stable Z-scheme induced circular electron motion pioneered by Exfoliated graphite for bisphenol a photoelectrodegradation. *Chemical Engineering Journal*. https://doi.org/10.1016/j.cej.2023.142462

41. Osei Akoto, Ampomah Samuel, Larbi Gladys, Osei Addae Agyekumwaa Sarah, Joseph Apau, **Francis Opoku** (2022). Assessment of groundwater quality from some hostels around Kwame Nkrumah University of Science and Technology. *Scientific African*. https://doi.org/10.1016/j.sciaf.2022.e01361

42. **Francis Opoku**, Samuel Osei-Bonsu Oppong, Albert Aniagyei, Osei Akoto, Anthony Apeke Adimado (2022). Boosting the photocatalytic H 2 evolution activity of type-II g-GaN/Sc 2 CO 2 van der Waals heterostructure using applied biaxial strain and external electric field. *RSC Advances*. https://doi.org/10.1039/d2ra00419d

43. **Francis Opoku**, Albert Aniagyei, Osei Akoto, Edward Ebow Kwaansa-Ansah, Noah Kyame Asare-Donkor, Anthony Apeke Adimado (2022). Effect of van der Waals stacking in CdS monolayer on enhancing the hydrogen production efficiency of SiH monolayer. *Materials Advances*. https://doi.org/10.1039/d2ma00331g

44. **Francis Opoku**, Samuel Osei-Bonsu Oppong, Noah Kyame Asare-Donkor, Osei Akoto, Anthony Apeke Adimado (2022). Enhancing the photocatalytic hydrogen generation performance and strain regulation of the vertical GeI 2 /C 2 N van der Waals heterostructure: insights from first-principles study. *Energy Advances*. https://doi.org/10.1039/d1ya00047k

45. Awewomom Jonathan, **Francis Opoku**, Osei Akoto (2022). Health Risk Assessment, Bioaccumulation

Factors and Ecological Indices of Heavy Metals in Sediment, Fish and Water Along Asuoyeboah River, Kumasi: A Case Study. *Chemistry Africa*. https://doi.org/10.1007/s42250-022-00524-z

46. Tunde Lewis Yusuf, Segun Ajibola Ogundare, **Francis Opoku**, Nonhlagabezo Mabuba (2022). Photoelectrocatalytic degradation of sulfamethoxazole over S–Scheme Co3Se4/BiVO4 heterojunction photoanode: An experimental and density functional theory investigations. *Surfaces and Interfaces*. https://doi.org/10.1016/j.surfin.2022.102534

47. Osei Akoto, Albert Adopler, Hanson Edward Tepkor, **Francis Opoku** (2021). A comprehensive evaluation of surface water quality and potential health risk assessments of Sisa river, Kumasi. *Groundwater for Sustainable Development*. https://doi.org/10.1016/j.gsd.2021.100654

48. **Francis Opoku**, Osei Akoto, Noah Kyame Asare-Donkor, Anthony Apeke Adimado (2021). Defect-engineered two-dimensional layered gallium sulphide molecular gas sensors with ultrahigh selectivity and sensitivity. *Applied Surface Science*. https://doi.org/10.1016/j.apsusc.2021.150188

49. Marian Asantewah Nkansah, Patrica-Ivy Agorsor, **Francis Opoku** (2021). Heavy metal contamination and health risk assessment of mechanically milled delicacy called fufu. *International Journal of Food Contamination*. https://doi.org/10.1186/s40550-021-00085-y

50. Samuel Osei-Bonsu Oppong, **Francis Opoku**, William Wilson Anku, Penny P. Govender (2021). Insights into the complementary behaviour of Gd doping in GO/Gd/ZnO composites as an efficient candidate towards photocatalytic degradation of indigo carmine dye. *Journal of Materials Science*. https://doi.org/10.1007/s10853-021-05846-w

51. Marian Asantewah Nkansah, Eric Amakye Agyei, **Francis Opoku** (2021). Mineral and proximate composition of the meat and shell of three snail species. *Heliyon*. https://doi.org/10.1016/j.heliyon.2021.e08149

52. **Francis Opoku**, Osei Akoto, Samuel Osei-Bonsu Oppong, Anthony Apeke Adimado (2021). Two-dimensional layered type-II MS 2 /BiOCl (M = Zr, Hf) van der Waals heterostructures: promising photocatalysts for hydrogen generation. *New Journal of Chemistry*. https://doi.org/10.1039/d1nj03867b

53. Renu Kumari, Adeniyi Olugbenga Osikoya, **Francis Opoku**, William Wilson Anku, Sudheesh Kumar Shukla, Penny Poomani Govender (2020). Composite 2D Nanointerfaces for Electrochemical Biosensing: An Experimental and Theoretical Study. *ACS Applied Bio Materials*. https://doi.org/10.1021/acsabm.0c01065

54. Samuel Osei-Bonsu Oppong, **Francis Opoku**, Penny P. Govender (2020). Remarkable Enhancement of Eu–TiO2–GO Composite for Photodegradation of Indigo Carmine: A Design Method Based on Computational and Experimental Perspectives. *Catalysis Letters*. https://doi.org/10.1007/s10562-020-03386-7

55. Edward Ebow Kwaansa-Ansah, Desmond Nkrumah, Samuel Owusu Nti, **Francis Opoku** (2019). Adsorption of heavy metals (Cu, Mn, Fe and Ni) from surface water using Oreochromis niloticus scales. *Pollution*. https://doi.org/10.22059/poll.2018.259347.454

56. Edward Ebow Kwaansa-Ansah, Edward Kwaku Armah, **Francis Opoku** (2019). Assessment of Total Mercury in Hair, Urine and Fingernails of Small–Scale Gold Miners in the Amansie West District, Ghana. *Journal of Health and Pollution*. https://doi.org/10.5696/2156-9614-9.21.190306

57. Samuel Osei-Bonsu Oppong, **Francis Opoku**, William Wilson Anku, Ephraim Muriithi Kiarii, Penny Poomani Govender (2019). Experimental and Computational Design of Highly Active Ce–ZrO2–GO Photocatalyst for Eosin Yellow Dye Degradation: The Role of Interface and Ce3+ Ion. *Catalysis Letters*. https://doi.org/10.1007/s10562-019-02729-3

58. Thomas Kwame Boateng, **Francis Opoku**, Osei Akoto (2019). Heavy metal contamination assessment of groundwater quality: a case study of Oti landfill site, Kumasi. *Applied Water Science*. https://doi.org/10.1007/s13201-019-0915-y

59. Renu Kumari, **Francis Opoku**, Adeniyi Olugbenga Osikoya, William Wilson Anku, Sudheesh Kumar Shukla, Penny Poomani Govender (2019). Hierarchically assembled two-dimensional gold boron nitride-tungsten disulphide nanohybrid interface system for electrobiocatalytic applications. *Materials Chemistry and Physics*. https://doi.org/10.1016/j.matchemphys.2018.12.103

60. Marian Asantewah Nkansah, Emmanuel Owusu-Afriyie, **Francis Opoku** (2018). Determination of lead and cadmium contents in lipstick and their potential health risks to consumers. *Journal of Consumer Protection and Food Safety*. https://doi.org/10.1007/s00003-018-1180-y

61. Edward Ebow Kwaansa-Ansah, Samuel Owusu Nti, **Francis Opoku** (2018). Heavy metals concentration and human health risk assessment in seven commercial fish species from Asafo Market, Ghana. *Food Science and Biotechnology*. https://doi.org/10.1007/s10068-018-0485-z

62. Samuel Osei-Bonsu Oppong, William Wilson Anku, **Francis Opoku**, Sudheesh Kumar Shukla, Penny Poomani Govender (2018). Photodegradation of Eosin Yellow Dye in Water under Simulated Solar Light Irradiation Using La–Doped ZnO Nanostructure Decorated on Graphene Oxide as an Advanced Photocatalyst. *ChemistrySelect*. https://doi.org/10.1002/slct.201702470

63. Marian Asantewah Nkansah, Mariam Shamsu–Deen, **Francis Opoku** (2018). Phytocompounds, Heavy Metal and Mineral Contents in honey Samples from Selected Markets in the Kumasi Metropolis. *Emerging Science Journal*. https://doi.org/10.28991/esj-2018-01152

64. Thomas Kwame Boateng, **Francis Opoku**, Osei Akoto (2018). Quality of leachate from the Oti Landfill Site and its effects on groundwater: a case history. *Environmental Earth Sciences*. https://doi.org/10.1007/s12665-018-7626-9

65. Samuel Osei-Bonsu Oppong, **Francis Opoku**, Penny Poomani Govender (2018). Tuning the electronic and structural properties of Gd-TiO2-GO nanocomposites for enhancing photodegradation of IC dye: The role of Gd3+ ion. *Applied Catalysis B: Environmental*. https://doi.org/10.1016/j.apcatb.2018.10.031

66. Marian Asantewah Nkansah, Godfred Darko, Matt Dodd, **Francis Opoku**, Thomas Bentum Essuman, Joshua Antwi-Boasiako (2017). Assessment of pollution levels, potential ecological risk and human health risk of heavy metals/metalloids in dust around fuel filling stations from the Kumasi Metropolis, Ghana. *Sustainable Environment*. https://doi.org/10.1080/23311843.2017.1412153

67. **Francis Opoku**, Krishna Kuben Govender, Cornelia Gertina Catharina Elizabeth van Sittert, Penny Poomani Govender (2017). Charge transport, interfacial interactions and synergistic mechanisms in BiNbO 4 /MWO 4 (M = Zn and Cd) heterostructures for hydrogen production: insights from a DFT+U study. *Physical Chemistry Chemical Physics*. https://doi.org/10.1039/c7cp04440b

68. Edward Ebow Kwaansa-Ansah, Leticia Peace Amenorfe, Edward Kwaku Armah, **Francis Opoku** (2017). Human health risk assessment of cyanide levels in water and tuber crops from Kenyasi, a mining community in the Brong Ahafo Region of Ghana. *International Journal of Food Contamination*. https://doi.org/10.1186/s40550-017-0061-y

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