Noah Kyame Asare-Donkor

Department of Chemistry
Kwame Nkrumah University of Science and Technology

ORCID 0000-0002-1542-8179 · Google Scholar scholar.google.com/citations?user=fItlDKcAAAAJ&hl=en · Profile knust.peerford.com/staff/60806a12-42c9-4df9-9748-f33b5f7e223d

RESEARCH

Interests	Bioinorganic · Environment · Semiconductor nanomaterial · computational
Areas	Materials Chemistry · Renewable Energy, Sustainability and the Environment · Electrical and Electronic Engineering · Pollution · Atomic and Molecular Physics, and Optics · Electronic, Optical and Magnetic Materials

RESEARCH SUMMARY

51	651	15	19	0.95	3%
Publications	Citations	h-index	i10-index	Field-weighted impact	World top 10%

Counted from the 51 publications listed below, 2002–2026. Field-weighted impact is the mean over the 37 works scored for it; 1.00 is the world average for works of the same field, type and year. 1 of the 37 papers scored for it are among the world's most cited tenth for their field, type and year.

POSITIONS

Senior Lecturer 2000–present
Chemistry, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

EDUCATION AND QUALIFICATIONS

Ph. D/Dr. 2009–2014
Chemistry, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

PUBLICATIONS

Journal articles 48

1. 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
2. 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
3. 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
4. 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
5. 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

6. 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
7. 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
8. Moro Haruna, Frederick Eshun, Charles Kwame Bandoh, Eric Selorm Agorku, Opoku Francis, **Noah Kyame Asare–Donkor**, Anthony Apeke Adimado (2024). Binary Ce-doped-ZnO/rGO composite as excellent photocatalyst for bromothymol blue dye degradation. *Sustainable Chemistry for the Environment*. https://doi.org/10.1016/j.scenv.2024.100069
9. 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
10. 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
11. 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
12. 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
13. 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
14. 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
15. 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
16. 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
17. 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
18. Cheetham Lawrence Mingle, Godfred Darko, Lawrence Sheringham Borquaye, **Noah Kyame Asare-Donkor**, Eric Woode, Francis Koranteng (2021). Veterinary Drug Residues in Beef, Chicken, and Egg from

Ghana. *Chemistry Africa*. https://doi.org/10.1007/s42250-020-00225-5

19. **Noah Kyame Asare-Donkor**, James Kusi Appiah, Vincent Torve, Ray Bright Voegborlo, Anthony Apeke Adimado (2020). Formaldehyde Exposure and Its Potential Health Risk in Some Beauty Salons in Kumasi Metropolis. *Journal of Toxicology*. https://doi.org/10.1155/2020/8875167
20. **Noah K. Asare-Donkor**, Anthony A. Adimado (2020). Groundwater quality assessment in the Northern and Upper East Regions of Ghana. *Environmental Earth Sciences*. https://doi.org/10.1007/s12665-020-08956-x
21. **NK Asare-Donkor**, V Torve, RB Voegborlo (2020). Occupational exposure of formaldehyde at some mortuaries in the Ashanti Region of Ghana. *J Toxicology: Curr Res*. https://www.researchgate.net/profile/Vincent-Torve/publication/338822712_Occupational_Exposure_Of_Formaldehyde_At_Some_Mortuaries_In_The_Ashanti_Region_Of_Ghana/links/5e2c38dd92851c3aadd98ca1/Occupational-Exposure-Of-Formaldehyde-At-Some-Mortuaries-In-The-Ashanti-Region-Of-Ghana.pdf
22. Cheetham Lawrence Mingle, Godfred Darko, **Noah Kyame Asare-Donkor**, Lawrence Sheringham Borquaye, Eric Woode (2020). Patterns in protein consumption in Ghanaian cities. *Scientific African*. https://doi.org/10.1016/j.sciaf.2020.e00684
23. **NK Asare-Donkor**, RB Voegborlo, AA Adimado (2019). Assessment of formaldehyde levels and its health effects in some selected residential homes and offices in Ashanti region, Ghana. *Assessment*. http://www.jmess.org/wp-content/uploads/2019/08/JMESSP13420546.pdf
24. **NK Asare-Donkor**, RB Voegborlo, AA Adimado (2019). Comparison of Three Spectrophotometric Reagents for Determination of Formaldehyde (FA) in Fish. *J Environ Toxicol Analyt Res*. https://www.scholarena.com/article/Comparison-of-Three-Spectrophotometric-Reagents-for-Determination-of-Formaldehyde-FA-in-Fish.pdf
25. **Asare-Donkor, Noah Kyame**, Amankwa, Charlotte, Adimado, Anthony Apeke (2018). HEALTH RISK ASSESSMENT OF SOME HEAVY METALS AND PHYSICO-CHEMICAL QUALITY OF SURFACE WATER IN BIBIANI A MINING ENCLAVE IN GHANA. *HAL (Le Centre pour la Communication Scientifique Directe)*.
26. **Noah Kyame Asare-Donkor**, Japhet Opoku Ofosu, Anthony Apeke Adimado (2018). Hydrochemical characteristics of surface water and ecological risk assessment of sediments from settlements within the Birim River basin in Ghana. *ENVIRONMENTAL SYSTEMS RESEARCH*. https://doi.org/10.1186/s40068-018-0113-1
27. **Noah Kyame Asare-Donkor**, Patrick Adu Poku, Eric Clement Desmond Kotei Addison, David Dotse Wemengah, Anthony Apeke Adimado (2018). Measurement of radon concentration in groundwater in the Ashanti region of Ghana. *Journal of Radioanalytical and Nuclear Chemistry*. https://doi.org/10.1007/s10967-018-5930-1
28. **Noah Kyame Asare-Donkor**, Raymond Akanwi Adaagoam, Ray Bright Voegborlo, Anthony Apeke Adimado (2018). Risk Assessment of Kumasi Metropolis Population in Ghana through Consumption of Fish Contaminated with Formaldehyde. *Journal of Toxicology*. https://doi.org/10.1155/2018/4785031
29. Francis Opoku, **Noah Kyame Asare-Donkor**, Anthony Adimado Adimado (2016). A comprehensive understanding of the chemical vapour deposition of cadmium chalcogenides using Cd[(C6H5)2PSSe]2 single-source precursor: a density functional theory approach. *Chemistry Central Journal*. https://doi.org/10.1186/s13065-016-0146-3
30. **Noah Kyame Asare-Donkor**, Thomas Asare Boadu, Anthony Apeke Adimado (2016). Evaluation of groundwater and surface water quality and human risk assessment for trace metals in human settlements around the Bosomtwe Crater Lake in Ghana. *SpringerPlus*. https://doi.org/10.1186/s40064-016-3462-0
31. **Noah Kyame Asare-Donkor**, Anthony Apeke Adimado (2016). Influence of mining related activities on levels of mercury in water, sediment and fish from the Ankobra and Tano River basins in South Western Ghana. *ENVIRONMENTAL SYSTEMS RESEARCH*. https://doi.org/10.1186/s40068-016-0055-4
32. **NKA Donkor** (2016). RESEARCH Influence of mining related activities on levels of mercury in water, sediment and fish from the Ankobra and Tano River basins in South Western Ghana. *Environmental Systems Research*.

33. **NK Asare-Donkor**, AA Adimado (2015). Assessment of Water Quality and Health Risk of the Oda River and its tributaries in the Kumasi Metropolis of Ghana. *International Journal of Sciences: Basic and applied research*. https://hal.science/hal-05429732/

34. **NK ASARE-DONKOR**, AA Adimado (2015). Assessment of water quality status and heavy metal contamination of the Barekese reservoir in the Ashanti Region of Ghana. *Journal of Basic and Applied Research International*. https://hal.science/hal-05434285/

35. **Noah Kyame Asare-Donkor**, Edward Ebow Kwaansa-Ansah, Francis Opoku, Anthony Apeke Adimado (2015). Concentrations, hydrochemistry and risk evaluation of selected heavy metals along the Jimi River and its tributaries at Obuasi a mining enclave in Ghana. *ENVIRONMENTAL SYSTEMS RESEARCH*. https://doi.org/10.1186/s40068-015-0037-y

36. **AA Asare-Donkor**, AA Adimado (2015). LEAD, CADMIUM, COPPER AND IRON IN WATER, SEDIMENT, GALATEA PARADOXA AND MACROBRACHIUM RARIDENS SAMPLES FROM THE VOLTA ESTUARY AT ADA, GHANA. *Journal of Basic and Applied Research International*. https://www.researchgate.net/profile/Justice-Amenu/publication/302340959_LEAD_CADMIUM_COPPER_AND_IRON_IN_WATER_SEDIMENT_GALATEA_PARADOXA_AND_MACROBRACHIUM_RARIDENS_SAMPLES_FROM_THE_VOLTA_ESTUARY_AT_ADA_GHANA/links/572faffd08aee022975b6ce2/LEAD-CADMIUM-COPPER-AND-IRON-IN-WATER-SEDIMENT-GALATEA-PARADOXA-AND-MACROBRACHIUM-RARIDENS-SAMPLES-FROM-THE-VOLTA-ESTUARY-AT-ADA-GHANA.pdf

37. Francis Opoku, **Noah Kyame Asare-Donkor**, Anthony Apeke Adimado (2015). Quantum mechanical study of the kinetics, mechanisms and thermodynamics of the gas-phase decomposition of Pb[(Pr)2PSSe]2 single-source precursor. *Journal of Organometallic Chemistry*. https://doi.org/10.1016/j.jorganchem.2015.04.013

38. F Opoku, **NK Asare-Donkor**, AA Adimado (2015). Quantum mechanical study of the kinetics, mechanisms and thermodynamics of the gas-phase decomposition of Pb[(iPr)2PSSe]2 single-source precursor. *Journal of Organometallic Chemistry*. https://www.sciencedirect.com/science/article/pii/S0022328X15002144

39. Francis Opoku, **Noah Kyame Asare-Donkor**, Anthony Apeke Adimado (2015). Theoretical studies of the decomposition of Zn[(iPr)2PSSe]2 single-source precursor in the gas phase for the chemical vapor deposition of binary and ternary zinc chalcogenides. *Computational and Theoretical Chemistry*. https://doi.org/10.1016/j.comptc.2015.01.020

40. Francis Opoku, **Noah Kyame Asare-Donkor**, Anthony Apeke Adimado (2015). Thermal decomposition of Zn[(C6H5)2PSSe]2 single-source precursor for the chemical vapour deposition of binary and ternary zinc chalcogenides: a theoretical study. *SpringerPlus*. https://doi.org/10.1186/s40064-015-1020-9

41. Francis Opoku, **Noah Kyame Asare-Donkor**, Anthony A. Adimado (2014). Density functional theory (DFT) study of the gas-phase decomposition of the Cd[(iPr)2PSSe]2 single-source precursor for the CVD of binary and ternary cadmium chalcogenides. *Journal of Molecular Modeling*. https://doi.org/10.1007/s00894-014-2484-1

42. Francis Opoku, **Noah K. Asare-Donkor**, Anthony A. Adimado (2014). Theoretical study of the gas-phase decomposition of Pb[(C6H5)2PSSe]2 single-source precursor for the chemical vapour deposition of binary and ternary lead chalcogenides. *Canadian Journal of Chemistry*. https://doi.org/10.1139/cjc-2014-0440

43. **NK Asare-Donkor**, AA Adimado (2013). Chemical Analysis of Freshwater Bodies in the Kumasi Metropolis and Its Environs, Ghana. *Journal of environment and earth science*. https://scholar.google.com/scholar?cluster=14873258774489359568&hl=en&oi=scholarr

44. EE Kwaansa-Ansah, **NK Asare-Donkor**, AA Adimado (2013). Evaluation of mercury and selenium concentrations in the edible tissue of freshwater fish from the Volta Lake in Ghana. *J Environ Occup Sci*. https://scholar.google.com/scholar?cluster=2434357905816997 89&hl=en&oi=scholarr

45. **NK Asare-Donkor**, AA Adimado (2013). Underground water quality at Bogoso and its environs, a mining enclave in Ghana. *International Journal of Development and Sustainability*. https://isdsnet.com/ijds-v2n3-28.pdf

46. FK Ampong, **NK Asare Donkor**, F Boakye (2010). The Effect of Thermal Annealing on the Optical Band Gap of Cadmium Sulphide Thin Films, Prepared by the Chemical bath Deposition Technique. *Journal of the*

Ghana Science Association. https://doi.org/10.4314/jgsa.v12i2.62798

47. K. AGYARKO, P.K. KWAKYE, M. BONSU, B.A. OSEI, **N. ASARE DONKOR**, E. AMANOR (2006). Breakdown of Azadirachtin A in a Tropical Soil Amended with Neem Leaves and Animal Manures. *Pedosphere*. https://doi.org/10.1016/s1002-0160(06)60048-9

48. **NK Asare-Donkor** (2002). Semi empirical pm3 (tm) molecular orbital (MO) studies on dinitrogen cleavage by three coordinate molybdenum (III) and tungsten (III) complexes. *J. Ghana Science Association*.

Book chapters 1

1. Anthony Adimado, **Noah Asare-Donkor** (2022). Theoretical studies of gas-phase decomposition of single-source precursors. *Elsevier eBooks*. https://doi.org/10.1016/b978-0-12-820340-8.00011-3

Conference papers 1

1. **SAOOH Noah K. Asare-Donkor** (2007). Noah K. Asare-Donkor, Richard Tia, Stephen A. Oduro and Osei Harry (2007) Levels of some heavy metals in some selected water bodies in Asutifi District of the Brong Ahafo .... *Proceedings of the First Research Conference of the College of Science*.

Theses 1

1. **NK Asare-Donkor** (2013). Structural and optoelectronic properties of copper, zinc, cadmium and lead chalcogenide nanocrystalline thin films deposited at the water-toluene interface. *Kwame Nkrumah University of Science and Technology, Kumasi*. https://scholar.google.com/scholar?cluster=5781478600219993021&hl=en&oi=scholarr