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RESEARCH

Interests	Renewable Energy · Energy and Climate Policy
Areas	Renewable Energy, Sustainability and the Environment · Pollution · Electrical and Electronic Engineering · Energy Engineering and Power Technology · Environmental Engineering · Artificial Intelligence

RESEARCH SUMMARY

66	1,623	21	34	2.44	16%
Publications	Citations	h-index	i10-index	Field-weighted impact	World top 10%

Counted from the 66 publications listed below, 2010–2026. Field-weighted impact is the mean over the 50 works scored for it; 1.00 is the world average for works of the same field, type and year. 8 of the 50 papers scored for it are among the world's most cited tenth for their field, type and year.

POSITIONS

Lecturer 2010–present
Department of Mechanical Engineering, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

EDUCATION AND QUALIFICATIONS

PhD - Renenwable Energy Specialization 2015–2018
Faculty of Environmental Sciences and Natural Resource Management, Norges miljø- og biovitenskapelige universitet, As, Norway

MS Energy Engineering 2008–2009
Energy, International Institute for Water and Environmental Engineering, Ouagadougou, Burkina Faso

MSc Mechanical Engineering (Thermofluids and Energy) 2006–2009
Mechanical Engineering, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

BSc Chemical Engineering 1999–2003
Chemical Engineering, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

PUBLICATIONS

Journal articles 57

1. **DA Quansah** (2026). Analysing the Renewable Energy Education Needs in Ghana. *Empowering Ghana's Engineering Future: A Model for Professional Education in Renewable Energy—and beyond*. https://books.google.com/books?hl=en&lr=&id=QeO4EQAAQBAJ&oi=fnd&pg=PA26&dq=info:bw1LnVMemI8J:scholar.google.com&ots=rtC9ufbKNY&sig=AtPgaAA8d1Vsn9gA-eASn67ukuc
2. Giulia Ragosa, Emmanuel Kofi Gavu, Jim Watson, **David Ato Quansah**, Mustapha Abdul-Mugis (2026).

Beyond cost: Unpacking the techno-economic, institutional, and social dynamics of solar PV adoption in Ghana's commercial sector. *Energy Sustainable Development/Energy for sustainable development*. https://doi.org/10.1016/j.esd.2026.102065

3. DE Dzebre, **DA Quansah** (2026). Case Studies of Successful Curriculum Integration at KNUST. *Empowering Ghana's Engineering Future: A Model for Professional Education in Renewable Energy—and beyond*. https://books.google.com/books?hl=en&lr=&id=QeO4EQAAQBAJ&oi=fnd&pg=PA70&dq=info:7Tc_UhQ74h0J:scholar.google.com&ots=rtC9ufbKN_&sig=WuWeo7sskRTcuFjsXyBBLNn1F3U

4. Gerald E. Arhin, Emmanuel Kofi Gavu, **David A. Quansah** (2026). How just are transition plans? An analysis of the energy transition and investment plans of Ghana and Kenya. *Climate Policy*. https://doi.org/10.1080/14693062.2026.2631012

5. Seth A. Mahu, Flavio Odoi-Yorke, Akwasi Adu-Poku, Richard K. Avuglah, Emmanuel A. Frimpong, **David A. Quansah**, Francis Kemausuor (2026). Overcoming Technical and Operational Barriers in Low-Voltage Mini-Grids: Two Decades of Research Trends, Progress, and Pathways for Accelerated Rural Electrification (2005–2025). *Energies*. https://doi.org/10.3390/en19040933

6. **DA Quansah** (2026). Strengthening Institutional Frameworks and Program Accreditation: Steps Taken for Accreditation and Institutional Support. *Empowering Ghana's Engineering Future: A Model for Professional Education in Renewable Energy—and beyond*.

7. Abdul-Rahim Bawa, William Amponsah, **David Ato Quansah** (2025). Design, Simulation, and Economic Analysis of a Solar Photovoltaic-Powered Pumping System for Drip Irrigation of a 1-ha Bean Farm in a Tropical Climate. *Journal of Engineering*. https://doi.org/10.1155/je/1662260

8. Marshet M. Admas, Lena D. Mensah, Denis E.K. Dzebre, Richard Arthur, **David A. Quansah** (2025). Estimating the carbon footprint of Ethiopian higher education institutions: A case study of Debre Markos University. *Results in Engineering*. https://doi.org/10.1016/j.rineng.2025.104911

9. Edward Dodzi Amekah, Emmanuel Wendsongre Ramde, **David Ato Quansah**, Elvis Twumasi, Stefanie Meilinger, Thorsten Schneiders (2025). Evaluating the effect of reactive power injection on power factor and system losses reduction in an optimally sized PV grid-connected solar photovoltaic system. *Solar Compass*. https://doi.org/10.1016/j.solcom.2025.100149

10. RJ Tanyi, LD Mensah, A Ntiamoah, **DA Quansah** (2025). Feedstocks and Pathways, and Its Prospects in Sub-Saharan Africa. *African Green Transition Through Innovative Pathways*. https://books.google.com/books?hl=en&lr=&id=zk1nEQAAQBAJ&oi=fnd&pg=PA223&dq=info:OTR3bEMvdd4J:scholar.google.com&ots=jOAv9jJdYi&sig=NTkOBgcmrnRdkA-WOSXewLfNTdk

11. **DA Quansah** (2025). Innovative Energy Storage Solutions for Bridging Intermittency in Renewable Energy Systems. *Sustainable Technologies for the Energy Transition*. https://doi.org/10.1201/9781003608189-10

12. Flavio Odoi-Yorke, John Bain, Ephraim Bonah Agyekum, Denis E. K. Dzebre, Charles K. K. Sekyere, **David Ato Quansah**, Muyiwa S. Adaramola (2025). Mapping Ghana's renewable energy research landscape: a bibliometric insight into trends, progress, and policy relevance for sustainable development. *International Journal of Ambient Energy*. https://doi.org/10.1080/01430750.2025.2577223

13. 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 Kemausuor (2025). Probabilistic Assessment of Carbon Intensity in Selected Oil and Gas Fields in Ghana. *Greenhouse Gases Science and Technology*. https://doi.org/10.1002/ghg.2361

14. Ragosa, Giulia, Gavu, Emmanuel Kofi, Abdul-Mugis, Mustapha, **Quansah, David Ato**, Watson, Jim (2025). Scaling up distributed solar PV adoption in Ghana's commercial sector. *Zenodo (CERN European Organization for Nuclear Research)*. https://doi.org/10.5281/zenodo.17880255

15. Robinson J. Tanyi, Lena D. Mensah, Augustine Ntiamoah, **David A. Quansah**, Muyiwa S. Adaramola (2025). Systematic Literature Review of Hydrogen Production Technologies, Feedstocks and Pathways, and Its Prospects in Sub-Saharan Africa. *World sustainability series*. https://doi.org/10.1007/978-3-031-87043-9_12

16. Eric Agyeman, **David A. Quansah**, Augustine Ntiamoah, Lena D. Mensah, Emmanuel W. Ramde (2025). Toward a circular economy in Ghana's renewable energy sector: A quantitative assessment of waste from

solar photovoltaic modules in Ghana. *International Journal of Green Energy*. https://doi.org/10.1080/15435075.2025.2469136

17. Saeed Abdul-Ganiiyu, Rosa Emefa Djangba, Denis Edem Kwame Dzebre, **David Ato Quansah**, Muyiwa Samuel Adaramola (2024). A Comparison of Levelised Cost of Energy of Different Energy Sources for Irrigated Shallot Farming in Some Coastal Regions of Ghana. *Journal of Applied Engineering and Technological Science (JAETS)*. https://doi.org/10.37385/jaets.v5i2.4185
18. Rahimat O. Yakubu, Lena D. Mensah, **David A. Quansah**, Muyiwa S. Adaramola (2024). A systematic literature review of the bifacial photovoltaic module and its applications. *The Journal of Engineering*. https://doi.org/10.1049/tje2.12421
19. Edward Dodzi Amekah, Emmanuel Wendsongre Ramde, **David Ato Quansah**, Elvis Twumasi, Stefanie Meilinger, Schneiders Thorsten (2024). Analyzing the consequences of power factor degradation in grid-connected solar photovoltaic systems. *e-Prime - Advances in Electrical Engineering Electronics and Energy*. https://doi.org/10.1016/j.prime.2024.100715
20. Husserl Djouodjinang Fonou, Armand Fopah-Lele, Lena Dzifa Mensah, Rahimat Oyiza Yakubu, **David Ato Quansah** (2024). Global status and prospects for hybrid hydrogen-natural gas systems for power plants in Sub-Saharan Africa. *Clean Energy*. https://doi.org/10.1093/ce/zkae078
21. Husserl Djouodjinang-Fonou, **David Ato Quansah**, Mensah Lena Dzifa, Rahimat Oyiza Yakubu, Armand Fopah-Lele (2024). Investigation of hybrid power-to-hydrogen/natural gas and hydrogen-to-X system in Cameroon. *Energy Reports*. https://doi.org/10.1016/j.egyr.2024.05.007
22. Romain Akpahou, Lena D. Mensah, **David A. Quansah**, Francis Kemausuor (2024). Long-term energy demand modeling and optimal evaluation of solutions to renewable energy deployment barriers in Benin: A LEAP-MCDM approach. *Energy Reports*. https://doi.org/10.1016/j.egyr.2024.07.055
23. Edward Dodzi Amekah, Emmanuel Wendsongre Ramde, **David Ato Quansah**, Elvis Twumasi, Stefanie Meilinger, Thorsten Schneiders (2024). Optimal placement and upgrade of solar PV integration in a grid-connected solar photovoltaic system. *Solar Compass*. https://doi.org/10.1016/j.solcom.2024.100099
24. Romain Akpahou, Flavio Odoi-Yorke, Lena D. Mensah, **David A. Quansah**, Francis Kemausuor (2024). Strategizing towards sustainable energy planning: Modeling the mix of future generation technologies for 2050 in Benin. *Renewable and Sustainable Energy Transition*. https://doi.org/10.1016/j.rset.2024.100079
25. 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
26. Robinson J Tanyi, Lena D Mensah, Augustine Ntiamoah, **David A Quansah**, Muyiwa S Adaramola (2024). Techno-economic assessment of hydrogen production in Ghana through PV electrolysis and biomass gasification. *Oxford Open Energy*. https://doi.org/10.1093/ooenergy/oiae014
27. Gavu, Emmanuel Kofi, **Quansah, David Ato**, Lamptey, Eunice Naa O., Tomei, Julia (2024). The political economy of land access for large-scale solar photovoltaic projects in Ghana. *Zenodo (CERN European Organization for Nuclear Research)*. https://doi.org/10.5281/zenodo.17883265
28. Rahimat O. Yakubu, **David A. Quansah**, Lena D. Mensah, Wisdom Ahiataku-Togobo, Peter Acheampong, Muyiwa S. Adaramola (2023). Comparison of ground-based and floating solar photovoltaic systems performance based on monofacial and bifacial modules in Ghana. *Energy Nexus*. https://doi.org/10.1016/j.nexus.2023.100245
29. Romain Akpahou, Lena D. Mensah, **David A. Quansah**, Francis Kemausuor (2023). Energy planning and modeling tools for sustainable development: A systematic literature review. *Energy Reports*. https://doi.org/10.1016/j.egyr.2023.11.043
30. Daha Hassan Daher, Mohammadreza Aghaei, **David A. Quansah**, Muyiwa S. Adaramola, Parviz Parvin, Christophe Ménézo (2023). Multi-pronged degradation analysis of a photovoltaic power plant after 9.5 years of operation under hot desert climatic conditions. *Progress in Photovoltaics Research and Applications*. https://doi.org/10.1002/pip.3694
31. Romain Akpahou, Lena D Mensah, **David A Quansah** (2023). Renewable energy in Benin: current situation

and future prospects. *Clean Energy*. https://doi.org/10.1093/ce/zkad039

32. E.A. Adjei, K.O. Amoabeng, G.K.K. Ayetor, G.Y. Obeng, **D.A. Quansah**, J.S. Adusei (2022). Assessing the impact of hydro energy project on poverty alleviation: The case of Bui Dam in Ghana. *Energy Policy*. https://doi.org/10.1016/j.enpol.2022.113227
33. Dramani Bukari, **David A. Quansah**, Francis Kemausuor, Muyiwa S. Adaramola (2022). Ex-post design, operations and financial cost-benefit analysis of mini-grids in Ghana: What can we learn? *Energy Sustainable Development/Energy for sustainable development*. https://doi.org/10.1016/j.esd.2022.04.009
34. Rahimat O Yakubu, Lena D Mensah, **David A Quansah**, Muyiwa S Adaramola (2022). Improving solar photovoltaic installation energy yield using bifacial modules and tracking systems: An analytical approach. *Advances in Mechanical Engineering*. https://doi.org/10.1177/16878132221139714
35. Rahimat O. Yakubu, Maame T. Ankoh, Lena D. Mensah, **David A. Quansah**, Muyiwa S. Adaramola (2022). Predicting the Potential Energy Yield of Bifacial Solar PV Systems in Low-Latitude Region. *Energies*. https://doi.org/10.3390/en15228510
36. Eric Tutu Tchao, **David Ato Quansah**, Griffith Selorm Klogo, Francis Boafo-Effah, Seth Kotei, Clement Nartey, Willie K. Ofosu (2021). On cloud-based systems and distributed platforms for smart grid integration: Challenges and prospects for Ghana's Grid Network. *Scientific African*. https://doi.org/10.1016/j.sciaf.2021.e00796
37. Saeed Abdul-Ganiyu, **David A. Quansah**, Emmanuel W. Ramde, Razak Seidu, Muyiwa S. Adaramola (2021). Study effect of flow rate on flat-plate water-based photovoltaic-thermal (PVT) system performance by analytical technique. *Journal of Cleaner Production*. https://doi.org/10.1016/j.jclepro.2021.128985
38. Saeed Abdul-Ganiyu, **David A. Quansah**, Emmanuel W. Ramde, Razak Seidu, Muyiwa S. Adaramola (2021). Techno-economic analysis of solar photovoltaic (PV) and solar photovoltaic thermal (PVT) systems using exergy analysis. *Sustainable Energy Technologies and Assessments*. https://doi.org/10.1016/j.seta.2021.101520
39. **David A. Quansah**, Muyiwa S. Adaramola, Gabriel Takyi (2020). Degradation and longevity of solar photovoltaic modules—An analysis of recent field studies in Ghana. *Energy Science & Engineering*. https://doi.org/10.1002/ese3.651
40. Kojo Adom Quagraine, Emmanuel Wendsongre Ramde, Yesuenyeagbe Atsu Kwabla Fiagbe, **David Ato Quansah** (2020). Evaluation of time lag and decrement factor of walls in a hot humid tropical climate. *Thermal Science and Engineering Progress*. https://doi.org/10.1016/j.tsep.2020.100758
41. Saeed Abdul-Ganiyu, **David A Quansah**, Emmanuel W Ramde, Razak Seidu, Muyiwa S. Adaramola (2020). Investigation of Solar Photovoltaic-Thermal (PVT) and Solar Photovoltaic (PV) Performance: A Case Study in Ghana. *Energies*. https://doi.org/10.3390/en13112701
42. Dramani Bukari, Francis Kemausuor, **David A. Quansah**, Muyiwa S. Adaramola (2020). Towards accelerating the deployment of decentralised renewable energy mini-grids in Ghana: Review and analysis of barriers. *Renewable and Sustainable Energy Reviews*. https://doi.org/10.1016/j.rser.2020.110408
43. G.K. Ayetor, **David A. Quansah**, Eunice A. Adjei (2020). Towards zero vehicle emissions in Africa: A case study of Ghana. *Energy Policy*. https://doi.org/10.1016/j.enpol.2020.111606
44. **David A. Quansah**, Muyiwa S. Adaramola (2018). Ageing and degradation in solar photovoltaic modules installed in northern Ghana. *Solar Energy*. https://doi.org/10.1016/j.solener.2018.08.021
45. **David A. Quansah**, Muyiwa S. Adaramola (2018). Assessment of early degradation and performance loss in five co-located solar photovoltaic module technologies installed in Ghana using performance ratio time-series regression. *Renewable Energy*. https://doi.org/10.1016/j.renene.2018.07.117
46. **David A. Quansah**, Muyiwa S. Adaramola (2018). Comparative study of performance degradation in poly- and mono-crystalline-Si solar PV modules deployed in different applications. *International Journal of Hydrogen Energy*. https://doi.org/10.1016/j.ijhydene.2017.12.156
47. **David A. Quansah**, Muyiwa S. Adaramola, Emmanuel K. Anto (2017). Cost-competitiveness of distributed grid-connected solar photovoltaics in Ghana: case study of a 4 kWp polycrystalline system. *Clean*

Technologies and Environmental Policy. https://doi.org/10.1007/s10098-017-1432-z

48. Muyiwa S. Adaramola, **David A. Quansah**, Martin Agelin-Chaab, Samuel S. Paul (2017). Multipurpose renewable energy resources based hybrid energy system for remote community in northern Ghana. *Sustainable Energy Technologies and Assessments*. https://doi.org/10.1016/j.seta.2017.02.011
49. **David A. Quansah**, Muyiwa S. Adaramola, George K. Appiah, Isaac A. Edwin (2017). Performance analysis of different grid-connected solar photovoltaic (PV) system technologies with combined capacity of 20 kW located in humid tropical climate. *International Journal of Hydrogen Energy*. https://doi.org/10.1016/j.ijhydene.2016.10.119
50. **David Quansah**, Muyiwa Adaramola, Gabriel Takyi, Isaac Edwin (2017). Reliability and Degradation of Solar PV Modules—Case Study of 19-Year-Old Polycrystalline Modules in Ghana. *Technologies*. https://doi.org/10.3390/technologies5020022
51. **David A. Quansah**, Saviour K. Woangbah, Emmanuel K. Anto, Emmanuel K. Akowuah, Muyiwa S. Adaramola (2017). TECHNO-ECONOMICS OF SOLAR PV-DIESEL HYBRID POWER SYSTEMS FOR OFF-GRID OUTDOOR BASE TRANSCEIVER STATIONS IN GHANA. *International Journal of Energy for a Clean Environment*. https://doi.org/10.1615/interjenercleanenv.2017019537
52. **David A. Quansah**, Muyiwa S. Adaramola, Isaac A. Edwin, Emmanuel K. Anto (2016). An Assessment of Grid-Charged Inverter-Battery Systems for Domestic Applications in Ghana. *Journal of Solar Energy*. https://doi.org/10.1155/2016/5218704
53. **David A. Quansah**, Muyiwa S. Adaramola (2016). Economic assessment of a-Si and CIS thin film solar PV technologies in Ghana. *Sustainable Energy Technologies and Assessments*. https://doi.org/10.1016/j.seta.2016.10.006
54. **DA Quansah** (2016). Preliminary assessment of degradation in field-aged multi-crystalline silicon PV modules installed in hot-humid climate of mid Ghana. *32nd European photovoltaic solar energy conference and exhibition, Munich*. https://www.academia.edu/download/56774564/6._EUPVSEC_5BV.4.41_paper_published.pdf
55. MDAQ Dr. Rudith S. King, O Amponsah, **DA Quansah** (2012). Productive uses of energy in enterprises in slums in Ghana. *Int. J. Soc. Sci. Tomorrow*. https://www.academia.edu/download/68417408/Productive_Uses_of_Energy_in_Enterprises20210730-21287-c97ru.pdf
56. R King, **A Quansah** (2011). Energy Access and Productive Uses for thr Urban Poor. *Energy Sector Management Assistance Program (ESMAP), The World Bank*. https://scholar.google.com/scholar?cluster=3164785268947052997&hl=en&oi=scholarr
57. **DA Quansah** (2010). Ghana's biofuels policy: challenges and the way forward. *International Journal of Energy and Environment*. https://www.researchgate.net/profile/David-Quansah/publication/44848815_Ghana's_biofuels_policy_Challenges_and_the_way_forward/links/56aafb3008ae8f3865666817/Ghanas-biofuels-policy-Challenges-and-the-way-forward.pdf

Book chapters 3

1. **DA Quansah** (2025). Advances in Solar Photovoltaic Technologies. *Sustainable Technologies for the Energy Transition*. https://doi.org/10.1201/9781003608189-11
2. **DA Quansah** (2025). Revolutionising Energy Systems with Power-to-X and Hydrogen Technologies. *Sustainable Technologies for the Energy Transition*. https://doi.org/10.1201/9781003608189-8
3. **DA Quansah** (2025). The Role of Nuclear in the Sustainable Energy Transition. *Sustainable Technologies for the Energy Transition*. https://doi.org/10.1201/9781003608189-13

Conference papers 6

1. EK Gavu, **DA Quansah** (2025). Scaling up distributed solar PV adoption in Ghana: a focus on the commercial sector. *Energy Solutions for a Sustainable and Inclusive Future, 46th IAEE International Conference, June 15-18, 2025*. https://scholar.google.com/scholar?cluster=16717465148449295853&hl=en&oi=scholarr
2. Rahimat O. Yakubu, Lena D Mensah, **David A. Quansah**, Muyiwa S. Adaramola, Yusuf Hammed (2022).

Performance evaluation of bifacial solar PV modules under different climatic regions in Nigeria. *E3S Web of Conferences*. https://doi.org/10.1051/e3sconf/202235402006

3. **David A. Quansah**, Muyiwa S. Adaramola, Lena D. Mensah (2016). Solar Photovoltaics in Sub-Saharan Africa – Addressing Barriers, Unlocking Potential. *Energy Procedia*. https://doi.org/10.1016/j.egypro.2016.12.108
4. **DA Quansah** (2015). Performance analysis of different types of grid-tied solar PV technologies in tropical climate. *14th International Conference on Clean Energy (ICCE 2015); 27th Sept 2015 - 1st Oct 2015. Saskatoon, Canada. http://stemstates.org/assets/files/Book%20Abstracts%20-%20ICCE2015.pdf*.
5. **DA Quansah.** (2015). Solar Energy in Africa – Experiences from Ghana. *AfricaSolar Conference 2015, 25 – 27 June 2015, Ouagadougou. http://www.2ie-edu.org/assets/4_David-A-Quansah-AfricaSolar-Presentation.pdf*. https://www.researchgate.net/profile/David-Quansah/publication/292149354_Solar_Energy_in_Africa_-_Experiences_from_Ghana/links/56aafd5208aeadd1bdcafd5c/Solar-Energy-in-Africa-Experiences-from-Ghana.pdf
6. **Quansah DA** (2014). Deploying thin-film photovoltaics in rural Africa: design, cost, and potential. *Southern African Solar Energy Conference - SASEC 2014. Port Elizabeth, South Africa. http://www.uz.ac.zw/index.php/about-uz/university-infor/304-uz-research-board/faculty/department/staff-publications/1421-brooking-gary*.