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RESEARCH

Interests	Solar Thermal
Areas	Renewable Energy, Sustainability and the Environment · Mechanical Engineering · Building and Construction · Pollution · Artificial Intelligence · Food Science

RESEARCH SUMMARY

22	1,162	14	14	2.73	44%
Publications	Citations	h-index	i10-index	Field-weighted impact	World top 10%

Counted from the 22 publications listed below, 1996–2025. Field-weighted impact is the mean over the 16 works scored for it; 1.00 is the world average for works of the same field, type and year. 7 of the 16 papers scored for it are among the world's most cited tenth for their field, type and year.

PUBLICATIONS

Journal articles 21

1. Flavio Odoi-Yorke, Richard Opoku, Eunice A. Adjei, Samuel Antwi, Francis Davis, George Yaw Obeng, **Francis Kofi Forson** (2025). Energy, emissions, and economics of institutional solar PV cooking: evidence from an experimental study. *Scientific African*. https://doi.org/10.1016/j.sciaf.2025.e02853
2. **francis kofi forson**, EA Adjei, CKK Sekyere, F Davis, GY Obeng (2025). Experimental analysis of an institutional solar PV-powered steam cooker sand-based thermal energy storage. *Solar Energy Advances*. https://www.sciencedirect.com/science/article/pii/S266711312500035X
3. Richard Opoku, Flavio Odoi-Yorke, Eunice Akyereko Adjei, Charles K.K Sekyere, Francis Davis, George Yaw Obeng, Michael Kweku Commeh, **Francis Kofi Forson**, Samuel Kwofie (2025). Experimental analysis of an institutional solar PV-powered steam cooker with sand-based thermal energy storage. *Solar Energy Advances*. https://doi.org/10.1016/j.seja.2025.100122
4. R Opoku, CKK Sekyere, GY Obeng, **FK Forson** (2025). Optimising mini-grid efficiency in Ghana: A techno-economic analysis of hydrogen production from redundant solar energy for fuel cell power generation. *Energy Conversion and Management: X*. https://www.sciencedirect.com/science/article/pii/S2590174525004416
5. J. Agbogla, C.K.K. Sekyere, **F.K. Forson**, R. Opoku, B. Baah (2025). Soiling estimation methods in solar photovoltaic systems: Review, challenges and future directions. *Results in Engineering*. https://doi.org/10.1016/j.rineng.2025.104810
6. Louis Kwasi Osei, Flavio Odoi-Yorke, Richard Opoku, Bismark Baah, George Yaw Obeng, Lena Dzifa Mensah, **Francis Kofi Forson** (2024). Techno-economic viability of decentralised solar photovoltaic-based green hydrogen production for sustainable energy transition in Ghana. *Solar Compass*. https://doi.org/10.1016/j.solcom.2024.100068
7. Abdulhadi Abdallah, Richard Opoku, Charles K.K. Sekyere, Samuel Boahen, Kofi O. Amoabeng, Felix Uba, George Y. Obeng, **Francis K. Forson** (2022). Experimental investigation of thermal management techniques for improving the efficiencies and levelized cost of energy of solar PV modules. *Case Studies in Thermal Engineering*. https://doi.org/10.1016/j.csite.2022.102133

8. Felix Uba, Yesuenyeagbe A.K. Fiagbe, Richard Opoku, **Francis Kofi Forson**, Emmanuel K. Nyantakyi (2020). CFD modelling and analysis of the trajectory and behaviour of oil pollutant particles in the ghanaian territorial waters. *Scientific African*. https://doi.org/10.1016/j.sciaf.2020.e00411

9. C.K.K. Sekyere, F.W. Adams, F. Davis, **F.K. Forson** (2020). Mathematical modelling and validation of the thermal buoyancy characteristics of a mixed mode natural convection solar crop dryer with back up heater. *Scientific African*. https://doi.org/10.1016/j.sciaf.2020.e00441

10. **FK Forson** (2016). Experimental Studies on an Evaporative Cooler as an option to mitigate post-harvest losses experienced by commercial producers of vegetables in Ghana. *International Journal of Engineering Trends and Technology*. https://www.researchgate.net/profile/Charles-Sekyere/publication/304401418_Experimental_Studies_on_an_Evaporative_Cooler_as_an_option_to_mitigate_post-harvest_losses_experienced_by_commercial_producers_of_vegetables_in_Ghana/links/5b6f7ae7299bf14c6d99fb00/Experimental-Studies-on-an-Evaporative-Cooler-as-an-option-to-mitigate-post-harvest-losses-experienced-by-commercial-producers-of-vegetables-in-Ghana.pdf

11. C.K.K. Sekyere, **F.K. Forson**, F.W. Adam (2016). Experimental investigation of the drying characteristics of a mixed mode natural convection solar crop dryer with back up heater. *Renewable Energy*. https://doi.org/10.1016/j.renene.2016.02.020

12. J.K. Afriyie, H. Rajakaruna, M.A.A. Nazha, **F.K. Forson** (2012). Mathematical modelling and validation of the drying process in a Chimney-Dependent Solar Crop Dryer. *Energy Conversion and Management*. https://doi.org/10.1016/j.enconman.2012.11.007

13. C.K.K. Sekyere, **F.K. Forson**, F.O. Akuffo (2012). Technical and economic studies on lighting systems: A case for LED lanterns and CFLs in rural Ghana. *Renewable Energy*. https://doi.org/10.1016/j.renene.2012.02.019

14. J.K. Afriyie, H. Rajakaruna, M.A.A. Nazha, **F.K. Forson** (2011). Simulation and optimisation of the ventilation in a chimney-dependent solar crop dryer. *Solar Energy*. https://doi.org/10.1016/j.solener.2011.04.019

15. J.K. Afriyie, M.A.A. Nazha, H. Rajakaruna, **F.K. Forson** (2008). Experimental investigations of a chimney-dependent solar crop dryer. *Renewable Energy*. https://doi.org/10.1016/j.renene.2008.04.010

16. **F.K. Forson**, M.A.A. Nazha, F.O. Akuffo, H. Rajakaruna (2007). Design of mixed-mode natural convection solar crop dryers: Application of principles and rules of thumb. *Renewable Energy*. https://doi.org/10.1016/j.renene.2006.12.003

17. **F.K. Forson**, M.A.A. Nazha, H. Rajakaruna (2006). Modelling and experimental studies on a mixed-mode natural convection solar crop-dryer. *Solar Energy*. https://doi.org/10.1016/j.solener.2006.07.002

18. **F.K Forson**, E.K Oduro, E Hammond-Donkoh (2004). Performance of jatropha oil blends in a diesel engine. *Renewable Energy*. https://doi.org/10.1016/j.renene.2003.11.002

19. **FK Forson** (2004). Solar energy resource assessment for Ghana. *Journal of the Ghana Institution of Engineering*. https://www.ajol.info/index.php/jgie/article/view/42573

20. **F.K Forson**, M.A.A Nazha, H Rajakaruna (2002). Experimental and simulation studies on a single pass, double duct solar air heater. *Energy Conversion and Management*. https://doi.org/10.1016/s0196-8904(02)00139-5

21. **FK Forson** (1996). Natural convection solar crop-dryers of commercial scale in Ghana: design, construction and performance. *International journal of ambient energy*. https://doi.org/10.1080/01430750.1996.9675231

Reports 1

1. **FK Forson** (1999). Modelling and experimental investigation of a mixed-mode natural convection solar crop dryer (MNCSD). *De Montfort University*. https://scholar.google.com/scholar?cluster=8632713170989645386&hl=en&oi=scholarr