Abano Ernest Ekow

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PROFILE

A professor at the Department of Agricultural and Mechanical Engineering, School of Sustainable Engineering at the University of Cape Coast, Prof Abano's research has focused on food processing and postharvest drying technologies for foods and biological products through the application of novel and improved drying methods, including solar, hot air, microwave-vacuum, far-infrared radiation, and ultrasound-assisted drying. He has worked extensively on pineapple, mango, moringa, orange-fleshed sweet potato, tomato, garlic, cocoa, carrot, and beetroot drying, as well as on many other dried fruits and vegetables.

RESEARCH

Interests	drying · lycopene · vitamin C · ultrasonic · far-infrared · microwave vacuum
Areas	Food Science · Plant Science · Nutrition and Dietetics · Biotechnology · Forestry · Mechanics of Materials

RESEARCH SUMMARY

35	703	16	20	1.79	14%
Publications	Citations	h-index	i10-index	Field-weighted impact	World top 10%

Counted from the 35 publications listed below, 2011–2026. Field-weighted impact is the mean over the 35 works scored for it; 1.00 is the world average for works of the same field, type and year. 5 of the 35 papers scored for it are among the world's most cited tenth for their field, type and year.

POSITIONS

University Lecturer, Researcher, Industry Practitioner 2006–present
Agricultural and Mechanical Engineering, University of Cape Coast, Cape Coast, Ghana

EDUCATION AND QUALIFICATIONS

Cambridge University
Cambridge, United Kingdom

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

PhD 2013
Food Science and Engineering, Jiangsu University, Zhenjiang, China

PUBLICATIONS

Journal articles 34

1. **Ernest Ekow Abano**, Amos Manyo (2026). Optimising Cassava-Yam Composite Gari for Improved Zinc and Quality Attributes. *Journal of Food Processing and Preservation*. https://doi.org/10.1155/jfpp/3598539
2. Francis Padi Lamptey, Ernest Teye, Flavio Odoi-Yorke, Gifty Serwaa Otoo, **Ernest Ekow Abano**, Charles L. Y. Amuah, Sandra Ama Kaburi (2026). Two decades of near infrared spectroscopy in fruit quality analysis: A bibliometric review of trends, innovations, and future directions. *Journal of Near Infrared Spectroscopy*.

https://doi.org/10.1177/09670335261434638

3. Lukeman Haruna, **Ernest E. Abano**, Ernest Teye, Mary Lukeman, Isaac Tukwarlba, Wilson Yeboah, David Nukafo, Kesse J. Agyei (2025). Effects of Different Drying Techniques on the Post-Harvest Quality of Fermented Cocoa Beans in Ghana. *Food Science & Nutrition*. https://doi.org/10.1002/fsn3.70715
4. Francis Padi Lamptey, Ernest Teye, Sandra Ama Kaburi, Flavio Odoi-Yorke, Charles Lloyd Yeboah Amuah, **Ernest Ekow Abano**, Gifty Serwaa Otoo (2025). Feasibility study on fingerprinting organic and conventional mango fruits, chips, and juice using portable near-infrared spectroscopy. *Analytical Methods*. https://doi.org/10.1039/d4ay01813c
5. Lawrencia Boakyewaa Koranteng, Adelaide Dorothy Esenam Agordo, Dorothy Esi Assafuah, Joshua Akanson, **Ernest Ekow Abano** (2025). Impact of Terahertz Frequency Irradiation on the Physicochemical, Nutritional, Microbial and Sensory Quality of Orange-Fleshed Sweet Potato–Soy Beverage. *Journal of Food Quality*. https://doi.org/10.1155/jfq/2032391
6. Lukeman Haruna, **Ernest E. Abano**, Ernest Teye, Isaac Tukwarlba, Stephen Adu, Kesse J. Agyei, Eric Kuma, Wilson Yeboah, Mary Lukeman (2024). Effect of partial pulp removal and fermentation duration on drying behavior, nib acidification, fermentation quality, and flavor attributes of Ghanaian cocoa beans. *Journal of Agriculture and Food Research*. https://doi.org/10.1016/j.jafr.2024.101211
7. Lukeman Haruna, **Ernest E. Abano**, Ernest Teye, Isaac Tukwarlba, Wilson Yeboah, Kesse J. Agyei, Mary Lukeman (2024). Effects of Predrying and Spontaneous Fermentation Treatments on Nib Acidification, Fermentation Quality, and Flavour Attributes of Ghanaian Cocoa (Theobroma cacao) Beans. *International Journal of Food Science*. https://doi.org/10.1155/2024/5198607
8. Gifty Serwaa Otoo, **Ernest Ekow Abano**, Robert Sarpong Amoah, Felix Edufia Agblemanyo, Rosemond Godbless Dadzie, Nazir Kizzie-Hayford, Salifu Seidu-Larry, Jerry Ampofo-Asiama (2024). Enhancing Protein and Vitamin A Intake Through the Addition of Bambara Groundnut and Ripe Plantain to Maize Porridge. *Legume Science*. https://doi.org/10.1002/leg3.234
9. Francis Padi Lamptey, Ernest Teye, **Ernest Ekow Abano**, Charles L.Y. Amuah (2023). Application of handheld NIR spectrometer for simultaneous identification and quantification of quality parameters in intact mango fruits. *Smart Agricultural Technology*. https://doi.org/10.1016/j.atech.2023.100357
10. Rosemond G. Dadzie, Jerry Ampofo-Asiama, Bright Quaye, Nazir Kizzie-Hayford, Francis Amoako-Andoh, **Ernest E. Abano**, Robert S. Amoah (2023). Effect of Beeswax Coating on the Quality of Eggplant Fruit During Cold Storage and Optimization of Coating Conditions. *Journal of Food Quality*. https://doi.org/10.1155/2023/5879085
11. Nazir Kizzie-Hayford, **Ernest Ekow Abano**, Joshua Akanson, Esi Dankwa, Harald Rohm, Jerry Ampofo-Asiama (2023). Effects of sprouting duration on the nutrient, functional, and phytochemical properties of tiger nut flour, and the sensory properties of bread made thereof. *Journal of Food Science*. https://doi.org/10.1111/1750-3841.16733
12. Nazir Kizzie-Hayford, Joshua Akanson, Jerry Ampofo-Asiama, **Ernest Ekow Abano** (2023). Influence of Partially Substituting Wheat Flour with Tiger Nut Flour on the Physical Properties, Sensory Quality, and Consumer Acceptance of Tea, Sugar, and Butter Bread. *International Journal of Food Science*. https://doi.org/10.1155/2023/7892739
13. Samuel Younge, Robert Sarpong Amoah, **Ernest Ekow Abano**, Francis Kumi, George Anyebuno (2022). Physico-nutritional characterization of composite cassava and orange-fleshed sweet potato flours and sensory evaluation of “fufu” prepared from the flour blends. *Journal of Food Processing and Preservation*. https://doi.org/10.1111/jfpp.17254
14. **Ernest Ekow Abano**, Joshua Akanson, Nazir Kizzie-Hayford (2021). Drying Kinetics and Quality of Whole, Halved, and Pulverized Tiger Nut Tubers (Cyperus esculentus). *International Journal of Food Science*. https://doi.org/10.1155/2021/8870001
15. Rosemond Godbless Dadzie, Robert Sarpong Amoah, Jerry Ampofo-Asiama, Bright Quaye, Nazir Kizzie-Hayford, **Ernest Ekow Abano** (2021). Improving the Storage Quality of Eggplants (Solanum Aethiopicum L.) Fruit using Aloe Vera Gel Coating. *Journal of Food Technology Research*. https://doi.org/10.18488/journal.58.2021.82.58.66

16. **Ernest Abano** (2020). Microwave and Blanching Pretreatments for Hot Air Drying of Orange-Fleshed Sweet Potato Slices (Ipomoea batatas). *International Journal of Food Science*. https://doi.org/10.1155/2020/8872429

17. **Ernest Ekow Abano**, Robert Sarpong Amoah, Catherine Mbabazi (2020). Microwave and steam blanching as pre-treatments before air drying of Moringa oleifera leaves. *Journal of Agricultural Engineering*. https://doi.org/10.4081/jae.2020.1044

18. Michael O. Adu, David O. Yawson, **Ernest E. Abano**, Paul A. Asare, Frederick A. Armah, Eugene K. Opoku (2019). Does water-saving irrigation improve the quality of fruits and vegetables? Evidence from meta-analysis. *Irrigation Science*. https://doi.org/10.1007/s00271-019-00646-2

19. Rosemond G. Dadzie, Robert S. Amoah, Jerry Ampofo Asiama, Bright Quaye, **Ernest Ekow Abano** (2019). Physicochemical properties of eggplant (Solanum aethiopicum L.) fruits as affected by cassava starch coating during low temperature storage: optimisation of coating conditions. *International Journal of Postharvest Technology and Innovation*. https://doi.org/10.1504/ijpti.2019.106461

20. **Ernest Ekow Abano**, Robert Sarpong Amoah, Eugene Kwabena Opoku (2019). Temperature, microwave power and pomace thickness impact on the drying kinetics and quality of carrot pomace. *Journal of Agricultural Engineering*. https://doi.org/10.4081/jae.2019.872

21. **Ernest E. Abano**, Enoch T. Quayson, Martin Bosompem, Margaret Quarm (2019). β-Carotene-fortified gari: Processing variables effect on nutritional and sensory qualities. *Journal of Food Process Engineering*. https://doi.org/10.1111/jfpe.13322

22. Michael Osei Adu, David Oscar Yawson, Frederick Ato Armah, **Ernest Ekow Abano**, Reginald Quansah (2018). Systematic review of the effects of agricultural interventions on food security in northern Ghana. *PLoS ONE*. https://doi.org/10.1371/journal.pone.0203605

23. **Ernest Ekow Abano** (2016). Kinetics and Quality of Microwave-Assisted Drying of Mango (Mangifera indica). *International Journal of Food Science*. https://doi.org/10.1155/2016/2037029

24. Robert Sarpong Amoah, **Ernest Ekow Abano**, Elliot Kwaku Anyidoho (2016). The Effects of Moisture Content and Loading Orientation on Some Physical and Mechanical Properties of “Tafo Hybrid” and “Amelonado” Cocoa Beans. *Journal of Food Process Engineering*. https://doi.org/10.1111/jfpe.12348

25. **Ernest Ekow Abano**, Robert Sarpong Amoah (2015). Microwave and blanch-assisted drying of white yam (Dioscorea rotundata). *Food Science & Nutrition*. https://doi.org/10.1002/fsn3.249

26. **E. E. Abano**, Rosemond Godbless Dadzie (2014). Simultaneous detection of water-soluble vitamins using the High Performance Liquid Chromatography (HPLC) - a review. *Croatian Journal of Food Science and Technology*. https://doi.org/10.17508/cjfst.2014.6.2.08

27. **Ernest Ekow Abano**, Hai Le Ma, Wenjuan Qu (2014). Thin-layer catalytic far-infrared radiation drying and flavour of tomato slices. *Journal of Agricultural Engineering*. https://doi.org/10.4081/jae.2014.226

28. **E. E. Abano**, L. K. Sam-Amoah, J. Owusu, F. N. Engmann (2013). Effects of ascorbic acid, salt, lemon juice, and honey on drying kinetics and sensory characteristic of dried mango. *Hrčak Portal of scientific journals of Croatia (University Computing Centre)*.

29. Wenjuan Qu, Haile Ma, Bin Liu, Ronghai He, Zhongli Pan, **Ernest Ekow Abano** (2013). Enzymolysis reaction kinetics and thermodynamics of defatted wheat germ protein with ultrasonic pretreatment. *Ultrasonics Sonochemistry*. https://doi.org/10.1016/j.ultsonch.2013.04.012

30. Rosemond Godbless Dadzie, Haile Ma, **Ernest Ekow Abano**, Wenjuan Qu, Shuyun Mao (2013). Optimization of process conditions for production of angiotensin I-converting enzyme (ACE) inhibitory peptides from vital wheat gluten using response surface methodology. *Food Science and Biotechnology*. https://doi.org/10.1007/s10068-013-0248-9

31. **Ernest Ekow Abano**, Livingston Kobina Sam-Amoah, Ato Bart-Plange (2013). Variation in ultrasonic frequency and time as pre-treatments to air-drying of carrot. *Journal of Agricultural Engineering*. https://doi.org/10.4081/jae.2012.e23

32. **E.E. ABANO**, H. MA, W. QU (2012). INFLUENCE OF COMBINED MICROWAVE-VACUUM DRYING ON DRYING KINETICS AND QUALITY OF DRIED TOMATO SLICES. *Journal of Food Quality*. https://doi.org/10.1111/j.1745-4557.2012.00446.x

33. **E.E. Abano**, H. Ma, W. Qu (2012). Optimization of Drying Conditions for Quality Dried Tomato Slices Using Response Surface Methodology. *Journal of Food Processing and Preservation*. https://doi.org/10.1111/jfpp.12056

34. **Abano E. E**, Ma. H, W. Qu (2011). Influence of Air Temperature on the Drying Kinetics and Quality of Tomato Slices. *Journal of Food Processing & Technology*. https://doi.org/10.4172/2157-7110.1000123

Conference papers 1

1. Nazir Kizzie-Hayford, Joshua Akanson, **Ernest Ekow Abano**, Jerry Ampofo-Asiama (2022). Effects of Partially Replacing Wheat Flour with Tiger Nut Flour on the Physical and Sensory Properties of Different Types of Bread. *The 3rd International Electronic Conference on Foods: Food, Microbiome, and Health—A Celebration of the 10th Anniversary of Foods’ Impact on Our Wellbeing*. https://doi.org/10.3390/foods2022-12955