Reindorf Nartey Borkor

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RESEARCH

Interests	Scientific Computing · MathBiology/Optimization · Fluid Dynamics · Numerical Analysis · Deep Learning
Areas	Modeling and Simulation · Control and Systems Engineering · Electrical and Electronic Engineering · Epidemiology · Public Health, Environmental and Occupational Health · Renewable Energy, Sustainability and the Environment

RESEARCH SUMMARY

20	78	6	2	1.70	19%
Publications	Citations	h-index	i10-index	Field-weighted impact	World top 10%

Counted from the 20 publications listed below, 2015–2026. 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. 3 of the 16 papers scored for it are among the world's most cited tenth for their field, type and year.

POSITIONS

Lecturer
Mathematics, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

EDUCATION AND QUALIFICATIONS

Completed the course 2024
Deep Learning, Neuromatch, Beaverton, United States

PUBLICATIONS

Journal articles 19

1. Rhydal Esi Eghan, Edward Osei-Sarpong, Gaston Edem Awashie, **Reindorf Nartey Borkor**, Evans Yaokumah, Aditta Abigail N'ganomah (2026). Item Response Theory for trait assessment in randomized item pool for computer based test. *Scientific African*. https://doi.org/10.1016/j.sciaf.2026.e03226
2. John Amoah-Mensah, Mohamedahmed Mirghani Hassan Mohamed, **Reindorf Nartey Borkor**, Rhoda Afutu, Nicholas Kwasi-Do Ohene Opoku (2026). Optimal control of Typhoid fever transmission under environmental and public health interventions. *PLoS ONE*. https://doi.org/10.1371/journal.pone.0351747
3. **RN Borkor**, P Amoako-Yirenkyi (2026). Stochastic optimal harmonic suppression with permissible photovoltaic penetration level for grid-linked systems using Monte Carlo-based hybrid NSGA2-MOPSO: A. Abubakar et al. *Energy Systems*.
4. Ali Abubakar, Samuel Essamuah Assabil, **Reindorf Nartey Borkor**, Peter Amoako-Yirenkyi (2025). A robust Monte Carlo-driven multi-criteria framework for enhancing photovoltaic penetration level with minimal total power losses for grid-connected system. *Scientific African*. https://doi.org/10.1016/j.sciaf.2025.e03019
5. Ali Abubakar, Samuel Essamuah Assabil, **Reindorf Nartey Borkor**, Maame Yaa Dufie Baah, Isabel Mensah

(2025). A two-phase production and transportation optimisation methodology for sustainable industrialisation under uncertainty. *Scientific African*. https://doi.org/10.1016/j.sciaf.2025.e03029

6. **RN Borkor** (2025). A two-phase production and transportation optimization methodology for sustainable industrialization under uncertainty. *Scientific African*. https://www.sciencedirect.com/science/article/pii/S2468227625004983
7. Kate Takyi, Rose-Mary Owusuaa Mensah Gyening, Shester Msouobu Gueuwou, Marco Stanley Nyarko, Richard Adade, **Reindorf Nartey Borkor**, Samuelson Israel Boadu-Acheampong, Linus Tabari (2025). AfriSign: African sign languages machine translation. *Discover Artificial Intelligence*. https://doi.org/10.1007/s44163-025-00227-7
8. **Reindorf Nartey Borkor**, Adu Sakyi, Nicholas Kwasi-Do Ohene Opoku, Rhydal Esi Eghan, John Amoah-Mensah, Ali Abubakar, Kwame Owusu Edusei, Peter Amoako-Yirenkyi (2025). Investigation of fractional compartmental models in pharmacokinetics with application to amiodarone drug diffusion. *Scientific African*. https://doi.org/10.1016/j.sciaf.2025.e02700
9. A Sakyi, **RN Borkor** (2025). Mathematical modelling of meningitis serogroups a and c transmission in sub-saharan africa: A case study in ghana. *Scientific African*. https://www.sciencedirect.com/science/article/pii/S2468227625002273
10. John Amoah-Mensah, Nicholas Kwasi-Do Ohene Opoku, **Reindorf Nartey Borkor**, Francis Ohene Boateng, Kwame Bonsu, Vida Afosaa, Rhoda Afutu (2024). Mathematical modelling of the transmission dynamics of Marburg virus disease with optimal control and cost-effectiveness analysis based on lessons from Ebola virus disease. *Advances in Continuous and Discrete Models*. https://doi.org/10.1186/s13662-024-03833-4
11. Ali Abubakar, **Reindorf Nartey Borkor**, Peter Amoako-Yirenkyi (2024). Stochastic optimal harmonic suppression with permissible photovoltaic penetration level for grid-linked systems using Monte Carlo-based hybrid NSGA2-MOPSO. *Energy Systems*. https://doi.org/10.1007/s12667-024-00700-9
12. **Reindorf Nartey Borkor**, Magnus Svärd, Peter Amoako-Yirenkyi (2023). A stable scheme of the Curvilinear Shallow Water Equations with no-penetration and far-field boundary conditions. *Computers & Fluids*. https://doi.org/10.1016/j.compfluid.2023.106136
13. Ali Abubakar, **Reindorf Nartey Borkor**, Peter Amoako-Yirenkyi (2023). Stochastic Optimal Selection and Analysis of Allowable Photovoltaic Penetration Level for Grid-Connected Systems Using a Hybrid NSGAII-MOPSO and Monte Carlo Method. *International Journal of Photoenergy*. https://doi.org/10.1155/2023/5015315
14. Nicholas Kwasi-Do Ohene Opoku, **Reindorf Nartey Borkor**, Andrews Frimpong Adu, Hannah Nyarkoah Nyarko, Albert Doughan, Edwin Moses Appiah, Biigba Yakubu, Isabel Mensah, Samson Pandam Salifu (2022). Modelling the Transmission Dynamics of Meningitis among High and Low-Risk People in Ghana with Cost-Effectiveness Analysis. *Abstract and Applied Analysis*. https://doi.org/10.1155/2022/9084283
15. Ali Abubakar, **Reindorf Nartey Borkor**, Peter Amoako-Yirenkyi (2022). Stochastic Optimal Design of Household-Based Hybrid Energy Supply Systems Using Sample Average Approximation. *Mathematical Problems in Engineering*. https://doi.org/10.1155/2022/9021413
16. Ali Abubakar, **Reindorf Nartey Borkor**, Anas Musah, Frank Kofi Owusu (2021). Mathematical Modeling of Transmission Dynamics with Periodic Contact Rate and Control by Different Vaccination Rates of Hepatitis B Infection in Ghana. *Asian Research Journal of Mathematics*. https://doi.org/10.9734/arjom/2021/v17i830323
17. Ali Abubakar, **Reindorf Borkor** (2021). Optimal Extraction of Photovoltaic Cell Parameters for the Maximization of Photovoltaic Power Output Using a Hybrid Particle Swarm Grey Wolf Optimization Algorithm. *Academic Journal of Research and Scientific Publishing*. https://doi.org/10.52132/ajrsp.e.2021.281
18. A.Y OMARI-SASU, **REINDORF NARTEY BORKOR**, ADU SAKYI, ISHMAEL JESSE NARH ADIKORLEY (2018). Modeling GHS-USD Exchange Rate in Ghana: Application of Stochastic Volatility Model. *International Review of Management and Business Research*. https://doi.org/10.30543/7-2(2018)-15
19. FT Oduro, **R Borkor** (2015). An epidemiological model of malaria transmission in Ghana. *Int J Sci*

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Conference papers 1

1. S. O. Edeki, G. O. Akinlabi, **R. Borkor** (2017). Local Fractional Operator on Quadratic Riccati Differential Equation with Variable Coefficients. https://doi.org/10.1109/mcsi.2017.38