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RESEARCH

Interests: Nanotechnology · Theoretical Physics · Bio-photonics

Areas: Materials Chemistry · Atomic and Molecular Physics, and Optics · Biomedical Engineering · Civil and Structural Engineering · Electrical and Electronic Engineering · Genetics

RESEARCH SUMMARY

52	258	10	11	0.88	7%
Publications	Citations	h-index	i10-index	Field-weighted impact	World top 10%

Counted from the 52 publications listed below, 2012–2026. Field-weighted impact is the mean over the 45 works scored for it; 1.00 is the world average for works of the same field, type and year. 3 of the 45 papers scored for it are among the world's most cited tenth for their field, type and year.

POSITIONS

lecturer 2016–present
Physics, University of Cape Coast, Cape Coast, Ghana

PUBLICATIONS

Journal articles 49

1. D. Sekyi-Arthur, **K.A. Dompreh**, F. Amo-Mensah, S.Y. Mensah, B. Afoakwa (2026). Acoustoelectric conversion efficiency in fluorine-doped single-walled carbon nanotubes. *Diamond and Related Materials*. https://doi.org/10.1016/j.diamond.2026.114035
2. D. Sekyi-Arthur, S.Y. Mensah, **K.A. Dompreh** (2026). Ettingshausen effect in GaAs/AlGaAs superlattices. *Physica B Condensed Matter*. https://doi.org/10.1016/j.physb.2026.418742
3. D. Sekyi-Arthur, M. Amekpewu, K. W. Adu, **K. A. Dompreh**, E. K. Amewode, S. Y. Mensah, K. K. Gbordzoe (2026). High Thermoelectric Efficiency in Fluorine-Doped Carbon Nanotubes. *Journal of Nanotechnology*. https://doi.org/10.1155/jnt/7877150
4. D. Sekyi-Arthur, S. Y. Mensah, **K. A. Dompreh** (2026). Nernst effect in semiconductor superlattice. *The European Physical Journal Plus*. https://doi.org/10.1140/epjp/s13360-026-08151-0
5. D. Sekyi-Arthur, K. W. Adu, **K. A. Dompreh**, E. Atioyire, S. Y. Mensah, B. Afoakwa (2026). Self-sustained acoustoelectric oscillations in fluorine-doped carbon nanotubes under strong electric fields. *The European Physical Journal B*. https://doi.org/10.1140/epjb/s10051-026-01148-9
6. D Sekyi-Arthur, SY Mensah, **KA Dompreh** (2026). Thermomagnetic power factor in GaAs/AlGaAs superlattice. *Journal of Magnetism and Magnetic Materials*. https://www.sciencedirect.com/science/article/pii/S0304885326008310
7. D. Sekyi-Arthur, S.Y. Mensah, **K.A. Dompreh**, F. Amo-Mensah (2026). Thermomagnetic power in semiconductor superlattice. *Next research*.. https://doi.org/10.1016/j.nexres.2026.101840
8. D. Sekyi-Arthur, S.Y. Mensah, **K.A. Dompreh**, F. Amo-Mensah (2026). Thermomagnetic transport and field-tunable figures of merit in GaAs/AlGaAs superlattices. *Micro and Nanostructures*. https://doi.org/10.1016/j.micrna.2026.208583

9. Ernest Teye, Charles Lloyd Yeboah Amuah, Vida Gyimah Boadu, **Kwadwo Anokye Dompreh**, Maxwell Darko Asante, Francis Padi Lamptey, Stephen Narh, Daniel Dzorkpe Gamenyah, George Oduro Nkansah, Selorm Akaba (2025). Rice seed integrity evaluation: Developing a rapid onsite system to check seed fraud using a portable NIR spectroscopic device coupled with smartphone technology. *Food Physics*. https://doi.org/10.1016/j.foodp.2025.100059

10. M. Amekpewu, S.Y. Mensah, R. Musah, S.S. Abukari, **K.A. Dompreh**, D. Sekyi-Arthur, N.G. Mensah, W. Ebikor (2024). Effect of doping on domain suppression in the presence of hot electrons in semiconducting achiral carbon nanotubes. *Journal of Physics and Chemistry of Solids*. https://doi.org/10.1016/j.jpcs.2024.112010

11. M. Amekpewu, S.Y. Mensah, R. Musah, S.S. Abukari, N.G. Mensah, **K.A. Dompreh**, K.W. Adu (2024). Impact of diameter and temperature on domain suppression by hot electrons in zigzag carbon nanotubes under constant electric field. *Materials Chemistry and Physics*. https://doi.org/10.1016/j.matchemphys.2024.129747

12. Raymond Edziah, Samuel S. Bentsiefi, **Kwadwo Dompreh**, Anthony Twum, Emmanuel Kofi Amewode, Patrick Mensah-Amoah, Ebenezer T. Tatchie, Cynthia Jebuni-Adanu, Samuel Y. Mensah (2024). Investigation of Acoustomagnetoelectric Effect in Bandgap Graphene by the Boltzmann Transport Equation. *World Journal of Condensed Matter Physics*. https://doi.org/10.4236/wjcmp.2024.141002

13. Christiana Subaar, Emmanuel Gyan, **Kwadwo A Dompreh**, Joseph K Amoako, George Edusei, Alfred Owusu (2024). Numerical simulation in magnetic resonance imaging radiofrequency dosimetry. *Biomedical Physics & Engineering Express*. https://doi.org/10.1088/2057-1976/ad6a68

14. Daniel Sekyi-Arthur, Samuel Yeboah Mensah, Kofi Wi-Adu, **Kwadwo Anokye Dompreh**, Raymond Edziah (2024). Tunable High-Frequency Acoustoelectric Current Oscillations in Fluorine-Doped Single-Walled Carbon Nanotubes. *Journal of Nanotechnology*. https://doi.org/10.1155/2024/7426184

15. **Kwadwo A. Dompreh**, S.Y. Mensah, E.K. Amewode, C. Jebuni-Adanu, J. Asare (2023). High frequency amplification of acoustic phonons in fluorine-doped single-walled carbon nanotubes. *Diamond and Related Materials*. https://doi.org/10.1016/j.diamond.2023.110642

16. **Kwadwo A. Dompreh**, Daniel Sekyi-Arthur, Samuel Y. Mensah, Kofi W. Adu, Raymond Edziah, Mathew Amekpewu (2022). Effect of band-gap tuning on absorption of phonons and acoustoelectric current in graphene nanoribbon. *Physica E Low-dimensional Systems and Nanostructures*. https://doi.org/10.1016/j.physe.2022.115516

17. D. Sekyi-Arthur, M. Egblewogbe, S.Y. Mensah, N.G. Mensah, K.W. Adu, **K.A. Dompreh**, R. Edziah, S. Atarah (2022). Giant thermoelectric figure of merit in fluorine-doped single walled-carbon nanotubes. *Physica E Low-dimensional Systems and Nanostructures*. https://doi.org/10.1016/j.physe.2022.115292

18. D. Sekyi-Arthur, S.Y. Mensah, **K.A. Dompreh**, G. Nkrumah-Buandoh, N.G. Mensah (2022). Giant thermoelectric power in fluorine-doped single-walled carbon nanotubes. *Journal of Physics and Chemistry of Solids*. https://doi.org/10.1016/j.jpcs.2022.111020

19. Anthony Twum, Samuel Y. Mensah, Raymond Edziah, Natalia G. Mensah, S.S. Abukari, **K.A. Dompreh**, G. Nkrumah-Buandoh, Augustine Arthur (2022). Investigation of laser modulated thermoelectric power of chiral carbon nanotubes. *Physica E Low-dimensional Systems and Nanostructures*. https://doi.org/10.1016/j.physe.2022.115304

20. **K. A. Dompreh**, K. W. Adu, D. Sakyi-Arthur, N. G. Mensah, S. Y. Mensah, A. Twum, M. Amekpewu (2021). Acoustoelectric current in graphene nanoribbon due to Landau damping. *Scientific Reports*. https://doi.org/10.1038/s41598-021-95896-6

21. M. Amekpewu, S. Y. Mensah, R. Musah, S. S. Abukari, **K. A. Dompreh**, N. G. Mensah, M. Kuwonu (2021). Influence of temperature variation on the electrical conductivity of zigzag carbon nanotubes under homogeneous axial dc field. *Low Temperature Physics*. https://doi.org/10.1063/10.0006068

22. M. Amekpewu, S.Y. Mensah, R. Musah, S.S. Abukari, N.G. Mensah, **K.A. Dompreh** (2021). Radius dependence of the electrical conductivity of zigzag carbon nanotubes. *Physica E Low-dimensional Systems and Nanostructures*. https://doi.org/10.1016/j.physe.2021.114712

23. Anthony Twum, Raymond Edziah, Samuel Yeboah Mensah, **Kwadwo Dompreh**, Patrick Mensah-Amoah,

Augustine Arthur, Natalia G. Mensah, Kofi Adu, George Nkrumah-Buandoh (2021). Temperature Dependent Resistivity of Chiral Single-Walled Carbon Nanotubes in the Presence of Coherent Light Source. *World Journal of Condensed Matter Physics*. https://doi.org/10.4236/wjcmp.2021.114006

24. D. Sakyi-Arthur, S. Y. Mensah, K. W. Adu, **K. A. Dompreh**, R. Edziah, N. G. Mensah (2020). Acoustoelectric Effect in Fluorinated Carbon Nanotube in the Absence of External Electric Field. *World Journal of Condensed Matter Physics*. https://doi.org/10.4236/wjcmp.2020.101001
25. Daniel Sakyi-Arthur, Samuel Y. Mensah, Kofi W. Adu, **Kwadwo A. Dompreh**, Raymond Edziah, Natalia G. Mensah, Cynthia Jebuni-Adanu (2020). Induced Hall-Like Current by Acoustic Phonons in Semiconductor Fluorinated Carbon Nanotube. *World Journal of Condensed Matter Physics*. https://doi.org/10.4236/wjcmp.2020.102005
26. D. Sakyi-Arthur, S. Y. Mensah, K. W. Adu, **K. A. Dompreh**, R. Edziah, N. Mensah, C. Jebuni-Adanu (2020). Semiconductor Fluorinated Carbon Nanotube as a Low Voltage Current Amplifier Acoustic Device. *World Journal of Condensed Matter Physics*. https://doi.org/10.4236/wjcmp.2020.101002
27. D. Sakyi-Arthur, S. Y. Mensah, N. G. Mensah, K. W. Adu, **K. A. Dompreh**, R. Edziah (2020). Tunable power factor in fluorine-doped single-walled carbon nanotubes. *Journal of Applied Physics*. https://doi.org/10.1063/5.0031326
28. Juliet Sackey, **Kwadwo A. Dompreh**, Malik Maaza (2019). Comprehensive analysis of retroreflection in Papilio crino Fabricius, 1792 wings. *IET Nanobiotechnology*. https://doi.org/10.1049/iet-nbt.2019.0314
29. D Sakyi-Arthur, SY Mensah, NG Mensah, **KA Dompreh**, R Edziah (2018). Absorption of acoustic phonons in fluorinated carbon nanotube with non-parabolic, double periodic band. *Phonons in low dimensional structures*. https://books.google.com/books?hl=en&lr=&id=GFWRDwAAQBAJ&oi=fnd&pg=PA129&dq=info:7jMbiNdQywsJ:scholar.google.com&ots=5A5GR9xINA&sig=H6zr_x0HSUYIoZiSknDc66FkBeI
30. J. Sackey, P. Prevost, **K. A. Dompreh**, M. Maaza (2018). Nanostructured Characterization of Papilio demoleus Linnaeus Butterfly Wings. *MRS Advances*. https://doi.org/10.1557/adv.2018.167
31. J. Sackey, **K.A. Dompreh**, B. Mothudi, M. Maaza (2018). Theoretical study of electromagnetic transport in Lepidoptera Danaus plexippus wing scales. *Heliyon*. https://doi.org/10.1016/j.heliyon.2017.e00502
32. J. Sackey, B. T. Sone, **K. A. Dompreh**, M. Maaza (2018). Wettability Property In Natural Systems: A Case of Flying Insects. *MRS Advances*. https://doi.org/10.1557/adv.2018.367
33. **K.A. Dompreh**, N.G. Mensah, S.Y. Mensah (2016). Acoustoelectric effect in graphene with degenerate energy dispersion. *Physica E Low-dimensional Systems and Nanostructures*. https://doi.org/10.1016/j.physe.2016.08.032
34. **K.A. Dompreh**, S.Y. Mensah, S.S. Abukari, F. Sam, N.G. Mensah (2016). Amplification of acoustic waves in armchair graphene nanoribbon in the presence of external electric and magnetic fields. *Physica E Low-dimensional Systems and Nanostructures*. https://doi.org/10.1016/j.physe.2016.01.032
35. M. Amekpewu, S.Y. Mensah, R. Musah, N.G. Mensah, S.S. Abukari, **K.A. Dompreh** (2016). High frequency conductivity of hot electrons in carbon nanotubes. *Physica B Condensed Matter*. https://doi.org/10.1016/j.physb.2016.02.013
36. M. Amekpewu, S.Y. Mensah, R. Musah, N.G. Mensah, S.S. Abukari, **K.A. Dompreh** (2016). Hot electrons injection in carbon nanotubes under the influence of quasi-static ac-field. *Physica E Low-dimensional Systems and Nanostructures*. https://doi.org/10.1016/j.physe.2016.03.002
37. **KA Dompreh** (2016). The study of the structural colouration observed in the Papilio crino fabricius, 1792 wings. *J. Nanomed. Nanotechnol*. https://www.researchgate.net/profile/Zebib-Yenus-Nuru/publication/315713272_The_Study_of_the_Structural_Colouration_Observed_in_the_Papilio_crino_Fabricius_1792_Wings/links/58de0f09458515add901ec42/The-Study-of-the-Structural-Colouration-Observed-in-the-Papilio-crino-Fabricius-1792-Wings.pdf
38. **K. A. Dompreh**, N. G. Mensah, S. Y. Mensah, S. K. Fosuhene (2016). Thermoelectric amplification of phonons in graphene. *Low Temperature Physics*. https://doi.org/10.1063/1.4954779
39. Sulemana S. Abukari, Samuel Y. Mensah, Musah Rabiu, Kofi W. Adu, Natalia G. Mensah, Anthony Twum, Alfred Owusu, **Kwadwo A. Dompreh**, Patrick Mensah-Amoah, Matthew Amekpewu (2015). High-

Frequency Electric Field Induced Nonlinear Electron Transport in Chiral Carbon Nanotubes. *World Journal of Condensed Matter Physics*. https://doi.org/10.4236/wjcmp.2015.54030

40. **K. A. Dompreh**, N. G. Mensah, S. Y. Mensah, S. S. Abukari, F. Sam, R. Edziah (2015). Hypersound Absorption of Acoustic Phonons in a Degenerate Carbon Nanotube. *Graphene*. https://doi.org/10.4236/graphene.2015.43007
41. **Kwadwo Anokye Dompreh** (2015). The study of acoustic effects in carbon allotropes. *space*. https://ir.ucc.edu.gh/server/api/core/bitstreams/bb6c55ce-0555-403a-82fa-31e48c961076/content
42. **KA Dompreh**, Samuel Y Mensah, SS Abukari, R Edziah, NG Mensah, HA Quaye (2014). Acoustomagnetoelectric Effect in Graphene Nanoribbon in the Presence of External Electric and Magnetic Field. *arXiv preprint arXiv:1412.1678*. https://arxiv.org/abs/1412.1678
43. Sulemana S. Abukari, Kofi W. Adu, Samuel Y. Mensah, Natalia G. Mensah, **Kwadwo A. Dompreh**, Anthony Twum, Musah Rabiu (2013). Amplification of terahertz radiation in carbon nanotubes. *The European Physical Journal B*. https://doi.org/10.1140/epjb/e2013-30771-6
44. **K.A. Dompreh**, M.J. Eghan, L. Kotsedi, M. Maaza (2013). Comprehensive optical study of the dragonfly Aeshna cyanea transparent wing. *Optics Communications*. https://doi.org/10.1016/j.optcom.2013.01.012
45. Sulemana S. Abukari, Samuel Y. Mensah, Musah Rabiu, Kofi W. Adu, Natalia G. Mensah, **Kwadwo A. Dompreh**, Anthony Twum, Matthew Amekpewu (2013). External Electric Field Effect on Electrons Transport in Carbon Nanotubes. *World Journal of Condensed Matter Physics*. https://doi.org/10.4236/wjcmp.2013.34027
46. Sulemana S. Abukari, Kofi W. Adu, Samuel Y. Mensah, Natalia G. Mensah, Musah Rabiu, Anthony Twum, Mathew Amekpewu, **Kwadwo A. Dompreh** (2013). Rectification due to harmonic mixing of two coherent electromagnetic waves with commensurate frequencies in carbon nanotubes. *The European Physical Journal B*. https://doi.org/10.1140/epjb/e2013-30011-3
47. SS Abukari, SY Mensah, NG Mensah, **KA Dompreh**, A Twum (2012). Appearance of Large Amplitude Current Dynamics as a Result of Bragg Reflection in Carbon Nanotubes. *arXiv preprint arXiv:1207.3111*. https://arxiv.org/abs/1207.3111
48. Sulemana S. Abukari, Samuel Y. Mensah, Kofi W. Adu, Natalia G. Mensah, **Kwadwo A. Dompreh**, Anthony Twum, Chales L. Y. Amuah, Matthew Amekpewu, Musah Rabiu (2012). Domain Suppression in the Negative Differential Conductivity Region of Carbon Nanotubes by Applied AC Electric Field. *World Journal of Condensed Matter Physics*. https://doi.org/10.4236/wjcmp.2012.24045
49. A. Twum, SY Mensah, NG Mensah, **KA Dompreh**, SS Abukari (2012). Laser stimulated thermal conductivity in chiral carbon nanotube. *arXiv preprint arXiv:1207.6527*. https://arxiv.org/abs/1207.6527

Book chapters 3

1. **Kwadwo Anokye Dompreh**, Kwame Agyei Frimpong (2026). Enabling Precision Agriculture in Africa. *Progress in precision agriculture*. https://doi.org/10.1007/978-3-032-20660-2_4
2. Kwame Agyei Frimpong, **Kwadwo Anokye Dompreh** (2026). Technology and Precision Agriculture in Africa. *Progress in precision agriculture*. https://doi.org/10.1007/978-3-032-20660-2_2
3. Daniel Sakyi-Arthur, S. Y. Mensah, N. G. Mensah, **Kwadwo A. Dompreh**, R. Edziah (2018). Absorption of Acoustic Phonons in Fluorinated Carbon Nanotubes with Non-Parabolic, Double Periodic Band. *IntechOpen eBooks*. https://doi.org/10.5772/intechopen.78231