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RESEARCH

Interests	Applied Thermodynamics · Fluid Machinery · Computational Fluid Dynamics · Science Education
Areas	Mechanics of Materials · Civil and Structural Engineering · Mechanical Engineering · Education · Artificial Intelligence · Biomedical Engineering

RESEARCH SUMMARY

22	309	8	7	8.42	26%
Publications	Citations	h-index	i10-index	Field-weighted impact	World top 10%

Counted from the 22 publications listed below, 2014–2026. Field-weighted impact is the mean over the 19 works scored for it; 1.00 is the world average for works of the same field, type and year. 5 of the 19 papers scored for it are among the world's most cited tenth for their field, type and year.

PUBLICATIONS

Journal articles 20

1. **Desmond Appiah**, Kofi Asamoah Adu-Poku, Fan Zhang, Emmanuel Agyenim-Boateng, Ebenezer Omari Abankwa, Majeed Koranteng Osman (2026). Mass Exchange Flow Process in Side Channel Pumps: Effects of Different Geometrical Parameters. *Energy Science & Engineering*. https://doi.org/10.1002/ese3.70485
2. Kofi Asamoah Adu-Poku, **Desmond Appiah**, Fan Zhang, Chen Ke (2026). Unsteady Flow Behavior and Radial Force Analysis of a Side Channel Pump Under Different Blade Tip Cutting Angles Using Computational Fluid Dynamics. *Energy Science & Engineering*. https://doi.org/10.1002/ese3.70542
3. Yang Yu, Fan Zhang, Kofi Asamoah Adu-Poku, **Desmond Appiah** (2024). 4-Years into the Pandemic Impacts: A Holistic Reflection and Educational Lessons Learnt in the Tourism and Agriculture Sectors. *Sustainability*. https://doi.org/10.3390/su162310617
4. Cynthia Jebuni-Adanu, Michael Gyan, **Desmond Appiah**, Bright Owusu Ansah, Robert Wilson, Charles Enoch Mensah (2024). Improving Students' Performance in Resolution of Vectors Using PhET Interactive Simulations. *Schrödinger Journal of Physics Education*. https://doi.org/10.37251/sjpe.v5i3.1078
5. Yongming Bai, Kofi Asamoah Adu-Poku, **Desmond Appiah**, Ke Chen, Yi Tao (2024). Influence of blade tip cutting on the flow loss characteristics of side channel pump. *AIP Advances*. https://doi.org/10.1063/5.0176107
6. Qi Cao, Fan Zhang, Ke Chen, Lufeng Zhu, Zhengxuan Xu, **Desmond Appiah** (2024). Influence of side channel inlet angle on energy conversion of a side channel pump. *Physics of Fluids*. https://doi.org/10.1063/5.0243620
7. Yang Yu, **Desmond Appiah**, Bernard Zulu, Kofi Asamoah Adu-Poku (2024). Integrating Rural Development, Education, and Management: Challenges and Strategies. *Sustainability*. https://doi.org/10.3390/su16156474
8. Victor Antwi, Michael Gyan, **Desmond Appiah**, Isaac Kwesi Acquah, Fortune Addo Wuver, Cynthia Jebuni-Adanu (2024). Theoretical study of the strong piezo-phototronic effect in 2D monochalcogenides for multi-junction solar cells. *Physica Scripta*. https://doi.org/10.1088/1402-4896/ad7cdc
9. Fortune Addo-Wuver, Victor Antwi, Isaac Kwesi Acquah, **Desmond Appiah**, Michael Gyan, Cynthia

Jebuni-Adanu, Peter Opoku (2023). IMPROVEMENT OF SENIOR HIGH STUDENTS' PERFORMANCE IN HEAT TRANSFER USING PRACTICAL ACTIVITIES IN EFFUTU MUNICIPAL, GHANA. *European Journal of Education Studies*. https://doi.org/10.46827/ejes.v10i9.4997

10. **Desmond Appiah**, Kofi Asamoah Adu-Poku, Fan Zhang, Ke Chen, Shouqi Yuan (2023). Impeller design and performance characteristics of a side channel pump. *AIP Advances*. https://doi.org/10.1063/5.0136819
11. Cynthia Jebuni-Adanu, Victor Antwi, Isaac Kwesi Acquah, **Desmond Appiah**, Michael Gyan, Fortune Addo Wuver, Issahaku Sontaa Jakalia, Bernard Sarkyi (2023). Utilizing Physics Education Technology (PhET) for Improving Students' Understanding of Energy Conversion and Conservation in a Senior High Technical School. https://doi.org/10.7176/jep/14-8-06
12. Kofi Asamoah Adu-Poku, **Desmond Appiah**, Killian Asampana Asosega, Nana Sarfo Agyemang Derkyi, Felix Uba, Ebenezer Nyarko Kumi, Eric Akowuah, Gilbert Ayine Akolgo, Daniel Gyamfi (2022). Characterization of fuel and mechanical properties of charred agricultural wastes: Experimental and statistical studies. *Energy Reports*. https://doi.org/10.1016/j.egyr.2022.03.015
13. Yongming Bai, **Desmond Appiah**, Yi Tao (2022). Computational turbulent flow characteristics in a centrifugal pump. *AIP Advances*. https://doi.org/10.1063/5.0100915
14. Eric Dominic Forson, David Dotse Wemegah, Godfred Bright Hagan, **Desmond Appiah**, Fortune Addo-Wuver, Isaac Adjovu, Frank Osae Otchere, Said Mateso, Aboagye Menyeh, Theophilus Amponsah (2022). Data-driven multi-index overlay gold prospectivity mapping using geophysical and remote sensing datasets. *Journal of African Earth Sciences*. https://doi.org/10.1016/j.jafrearsci.2022.104504
15. Kofi Asamoah Adu-Poku, Fan Zhang, **Desmond Appiah**, Ke Chen, Fareed Konadu Osman, Emmanuel Acheaw (2022). Study on the inner flow mechanisms and unsteady force distribution of side channel pump. *Proceedings of the Institution of Mechanical Engineers Part A Journal of Power and Energy*. https://doi.org/10.1177/09576509221081618
16. Ping Huang, **Desmond Appiah**, Ke Chen, Fan Zhang, Puyu Cao, Quihong Hong (2021). Energy dissipation mechanism of a centrifugal pump with entropy generation theory. *AIP Advances*. https://doi.org/10.1063/5.0042831
17. Fan Zhang, **Desmond Appiah**, Ke Chen, Shouqi Yuan, Kofi Asamoah Adu-Poku, Lufeng Zhu (2021). Investigation on the Flow Behavior of Side Channel Pumps Based on Vortex Identification. *Chinese Journal of Mechanical Engineering*. https://doi.org/10.1186/s10033-021-00649-1
18. **Desmond Appiah**, Ransford O Darko (2018). Performance characteristics of pump-as-turbine for energy generation. *Indian Journal of Engineering*. https://www.academia.edu/download/104746189/A28.pdf
19. Jinfeng Zhang, Adu Daniela, Yujian Fang, **Appiah Desmonda**, Eric .O. Antwi (2018). Review on China's renewable energy and future projections. *International Journal of Smart Grid and Clean Energy*. https://doi.org/10.12720/sgce.7.3.218-224
20. AA Aning, IS Jakalia, **D Appiah** (2014). Electrical resistivity as a geophysical mapping tool; a case study of the new art department, Knust-Ghana. *International Journal of Scientific and Research Publications*. https://www.academia.edu/download/36978652/ijsrp-p2529.pdf

Conference papers 1

1. **Desmond Appiah** (2025). Enhancing Students' Performance and Interest in Heat Transfer using Energy2D Simulation Demonstrations. https://doi.org/10.1145/3775073.3775085

Reports 1

1. Eric Dominic Forson, David Dotse Wemegah, Godfred Bright Hagan, **Desmond Appiah**, Fortune Addo-Wuver, Isaac Adjovu, Frank Osae Otchere, Said Mateso, Aboagye Menyeh, Theophilus Amponsah (2022). Data-Driven Multi-Index Overlay Gold Prospectivity Mapping Using Geophysical and Remote Sensing Datasets. https://doi.org/10.54985/peeref.2209p5617862