Bismark Sarkodie

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RESEARCH

Interests	Catalysts for environmental remediation · Textiles · Transfer Printing · Warp Sizing · Nanoparticles · CO oxidation · Heterogenous catalysts
Areas	Materials Chemistry · Renewable Energy, Sustainability and the Environment · Polymers and Plastics · Biomaterials · Biomedical Engineering · Organic Chemistry

RESEARCH SUMMARY

44	734	14	20	1.12	6%
Publications	Citations	h-index	i10-index	Field-weighted impact	World top 10%

Counted from the 44 publications listed below, 2016–2026. Field-weighted impact is the mean over the 18 works scored for it; 1.00 is the world average for works of the same field, type and year. 1 of the 18 papers scored for it are among the world's most cited tenth for their field, type and year.

POSITIONS

Postdoctoral researcher 2024–present
School of Environment, Henan Normal University, Xinxiang, China

Postdoctoral Researcher 2022–2024
School of Textile and Clothing, Anhui Polytechnic University, Wuhu, China

Teaching Assistant 2014–2015
Industrial Art (Textiles), Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

EDUCATION AND QUALIFICATIONS

D.Eng. Materials Science and Engineering 2018–2022
School of Materials Science and Engineering, East China University of Science and Technology, Shanghai, China

M.Eng. Textile Engineering 2015–2018
School of Textiles and Clothing, Jiangnan University, Wuxi, China

B.A. Industrial Art (Textiles) 2010–2014
Industrial Art, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

PUBLICATIONS

Journal articles 38

1. **Bismark Sarkodie**, Malik Yonis Hassan Saty, Haijin Liu, Benjamin K. Asinyo (2025). Defective TiO2 synthesized by flame spray pyrolysis for photocatalytic removal of single and mixed methylene blue and Cr (VI) pollutants under low-LED light. *Journal of Physics and Chemistry of Solids*. https://doi.org/10.1016/j.jpcs.2025.113107
2. **Bismark Sarkodie**, Malik Y.H. Saty, Benjamin K. Asinyo, Ebenezer K. Howard (2025). Functional nanomaterials prepared by spray pyrolysis for environmental remediation from air and water pollutants: A

review. *Journal of Alloys and Compounds Communications*. https://doi.org/10.1016/j.jacomc.2025.100142

3. Benjamin Tawiah, Wanyu He, Raphael Kanyire Seidu, Yuyang Zhou, **Bismark Sarkodie**, Bin Fei (2025). Mosquito-repellent textiles: a systematic review of material innovations, application principles and research trends. *Textile Research Journal*. https://doi.org/10.1177/00405175241311954
4. **Bismark Sarkodie**, Benjamin Tawiah, Haijin Liu, Quan Feng, Yanjie Hu (2025). Promoting the photocatalytic power of nanofibrous mat via coaxial electrospinning: Activity of core-sheath Cu-Bi2O3/Cellulose acetate@PAN mat in methylene blue degradation. *Journal of Cleaner Production*. https://doi.org/10.1016/j.jclepro.2025.144764
5. **B Sarkodie** (2024). Bioinspired “Root-Soil” interlocked micro/nanostructure enhanced hybrid hydrogels for robust and highly sensitive strain sensors. *ACS Applied Polymer Materials*. https://doi.org/10.1021/acsapm.4c01554
6. **Bismark Sarkodie**, Ebenezer Kofi Howard, Quan Feng, Changhai Xu, Yanjie Hu (2024). Boosting the recyclability of flame-made Bi2O3 via insitu immobilization in cellulose acetate nanofibers for efficient photocatalytic degradation of rhodamine B dye. *Ceramics International*. https://doi.org/10.1016/j.ceramint.2024.03.308
7. Malik Yonis Hassan Saty, Ibrahim Abdalla, Ahmed Elhassan, Amjad Farooq, **Bismark Sarkodie**, Yong Wang, Zhenzhen Xu, Jinmei Du (2024). Compact Spinning with Different Fibre Types: An Experimental Investigation on Yarn Properties in the Condensing Zone with 3D-Printed Guiding Device. *Autex Research Journal*. https://doi.org/10.1515/aut-2023-0038
8. Malik Yonis Hassan Saty, **Bismark Sarkodie**, Ibrahim Abdalla, Amjad Farooq, Ahmed Elhassan, Yong Wang, Zhenzhen Xu (2024). Compact spinning: a comprehensive review of the revolution in yarn manufacturing. *Textile Research Journal*. https://doi.org/10.1177/00405175231210020
9. **B Sarkodie** (2024). Continuous oil–water separation by utilizing novel natural hollow fibers: evaluation and potential applications. *Cellulose*. https://doi.org/10.1007/s10570-024-05809-9
10. **Bismark Sarkodie**, Lingli Luo, Ze Mao, Amjad Farooq, Quan Feng, Changhai Xu, Benjamin Tawiah, Yanjie Hu (2024). Highly reusable Bi2O3/electron-Cu-shuttle in-situ immobilized polyacrylonitrile fibrous mat for efficient photocatalytic degradation of methylene blue and rhodamine B dyes. *Journal of Environmental Management*. https://doi.org/10.1016/j.jenvman.2024.120346
11. **B Sarkodie** (2024). Preparation of BC/PDA/Bi2MoO6 composite nanofiber membranes and efficient removal of organic pollutants from wastewater. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*. https://www.sciencedirect.com/science/article/pii/S092777572401673X
12. Malik Yonis Hassan Saty, Ibrahim Abdalla, **Bismark Sarkodie**, Amjad Farooq, Ahmed Elhassan, Yong Wang, Zhenzhen Xu (2024). Recent advances of preparing structure-enhanced conductive yarns to control their performance in potential applications. *Textile Research Journal*. https://doi.org/10.1177/00405175241253867
13. **B Sarkodie** (2024). Reusable UiO-66-NH2 Functionalized Polyacrylonitrile Nanofiber Membrane for Effective Removal of Cr(VI) from Water. *Fibers and Polymers*. https://doi.org/10.1007/s12221-023-00453-9
14. **B Sarkodie** (2024). Scalable, acid-resistant polyaniline deposited amidoxime PAN nanofibers for efficient adsorption and detoxification of Cr (VI) wastewater. *Journal of Environmental Chemical Engineering*. https://www.sciencedirect.com/science/article/pii/S2213343724012831
15. **B Sarkodie** (2024). Strain sensors for human movement detection based on fibrous membranes comprising thermoplastic polyurethane, Ag nanoparticles, and carbon nanotubes. *ACS Applied Nano Materials*. https://doi.org/10.1021/acsanm.3c05335
16. C Frimpong, **B Sarkodie** (2023). 7 Polymer Nanocomposite. *Multifunctional Polymeric Foams: Advancements and Innovative Approaches*. https://books.google.com/books?hl=en&lr=&id=-iirEAAAQBAJ&oi=fnd&pg=PA111&dq=info:CWmK4PcokMYJ:scholar.google.com&ots=M1L4WEOK7Q&sig=nmQHMGvWX73BYryjXwk7byJVqnc
17. **B Sarkodie** (2023). Close-contact oxygen vacancies synthesized by FSP promote the supplement of active

oxygen species to improve the catalytic combustion performance of toluene. *Langmuir*. https://doi.org/10.1021/acs.langmuir.2c02836

18. **B Sarkodie** (2023). Desizability and biodegradability of textile warp sizing materials and their mechanism: a review. *Journal of Polymers and the Environment*. https://doi.org/10.1007/s10924-023-02801-5
19. B Tawiah, C Frimpong, **B Sarkodie** (2023). Polymer Nanocomposite Foams and Acoustics. *Multifunctional Polymeric Foams*. https://doi.org/10.1201/9781003218692-7/polymer-nanocomposite-foams-acoustics-benjamin-tawiah-charles-frimpong-bismark-sarkodie
20. **Bismark Sarkodie**, Yanjie Hu, Ebenezer Kofi Howard, Benjamin Tawiah, Jiechao Jiang, Chunzhong Li (2022). Boosting the efficiency of low-loaded Au on spongy Fe2O3 via interfacial ferric hydroxide for low-temperature CO oxidation. *Materials Chemistry and Physics*. https://doi.org/10.1016/j.matchemphys.2022.126407
21. **S Bismark** (2022). Effect of pH on the physicochemical properties of 2-dimethylaminoethyl starch and its desizability. *Textile Research Journal*. https://doi.org/10.1177/00405175221114640
22. **B Sarkodie** (2022). Numerical simulation of flow field and residence time of nanoparticles in a 1000-ton industrial multi-jet combustion reactor. *Chinese Journal of Chemical Engineering*. https://www.sciencedirect.com/science/article/pii/S1004954121006121
23. **Bismark Sarkodie**, Jeremiah Amesimeku, Charles Frimpong, Ebenezer Kofi Howard, Quan Feng, Zhenzhen Xu (2022). Photocatalytic degradation of dyes by novel electrospun nanofibers: A review. *Chemosphere*. https://doi.org/10.1016/j.chemosphere.2022.137654
24. **B Sarkodie** (2022). Self-sacrificing lithium source with high electrochemical activity and water oxygen stability and its application in Si-C//S battery. *Energy Storage Materials*. https://www.sciencedirect.com/science/article/pii/S240582972100595X
25. **B Sarkodie**, EK Howard, BK Asinyo, E Apau (2021). Diversification of Ghanaian indigenous embroidery and print designs in window blinds. *ADRRI Journal of Arts and Social Sciences*. https://www.academia.edu/download/101783810/Manuscript_Number_ADRRIJASS_21_3090.pdf
26. **Bismark Sarkodie**, Bolei Shen, Benjamin Asinyo, Yanjie Hu, Jiechao Jiang, Chunzhong Li (2021). Highly efficient Au/Fe2O3 for CO oxidation: The vital role of spongy Fe2O3 toward high catalytic activity and stability. *Journal of Colloid and Interface Science*. https://doi.org/10.1016/j.jcis.2021.09.111
27. **B Sarkodie** (2021). Optimizing the catalytic activity of flame-spray-pyrolyzed Pt/Fe2O3 catalyst toward CO oxidation: Effect of fluorination and reduction. *Nano Select*. https://doi.org/10.1002/nano.202000211
28. **B Sarkodie** (2021). Promotional effects of CuxO on the activity of Cu/ZnO catalyst toward efficient CO oxidation. *Applied Surface Science*. https://www.sciencedirect.com/science/article/pii/S0169433221003172
29. **Bismark Sarkodie**, Yanjie Hu, Benjamin Asinyo, Jiechao Jiang, Benjamin Tawiah, Chunzhong Li (2021). Vacancy-mediated Interfacial Charge Transfer in Au-ZnO by Fe promoter for low-temperature CO oxidation. *Journal of environmental chemical engineering*. https://doi.org/10.1016/j.jece.2021.106651
30. **Bismark Sarkodie**, Collins Acheampong, Benjamin Asinyo, Xun Zhang, Benjamin Tawiah (2019). Characteristics of pigments, modification, and their functionalities. *Color Research & Application*. https://doi.org/10.1002/col.22359
31. **B Sarkodie** (2019). Effect of amphiphilic phosphate/octenylsuccinate starch on enhancing adhesion to hydrophobic polyester fibers in sizing. *The Journal of Adhesion*. https://doi.org/10.1080/00218464.2018.1459576
32. **B Sarkodie** (2018). A review on the mechanism of pigment dispersion. *Journal of Dispersion Science and Technology*. https://doi.org/10.1080/01932691.2017.1406367
33. **S Bismark** (2018). Amphipathic starch with phosphate and octenylsuccinate substituents for strong adhesion to cotton in warp sizing. *Fibers and Polymers*. https://doi.org/10.1007/s12221-018-8058-6
34. **S Bismark**, T Benjamin (2018). Effects of differential degree of chemical modification on the properties of modified starches: Sizing. *The Journal of Adhesion*.

35. **Sarkodie Bismark**, Zhang Xun, Zhu Zhifeng, Frimpong Charles, B William, Asinyo Benjamin, Howard K. Ebenezer (2018). Phosphorylation and Octenylsuccinylation of Acid-Thinned Starch for Enhancing Adhesion on Cotton/Polyester Blend Fibers at Varied Temperature Sizing. *Starch - Stärke*. https://doi.org/10.1002/star.201800055

36. **B Sarkodie**, B Tawiah (2018). Status and development of transfer printing in textiles—A review. *AATCC Journal of Research*. https://doi.org/10.14504/ajr.5.2.1

37. **B Sarkodie** (2018). Study on mechanical property of DMAES/PVA blend film. *New Chemical Materials*. https://scholar.google.com/scholar?cluster=3142300762141007670&hl=en&oi=scholarr

38. **Sarkodie Bismark**, Zhu Zhifeng, Tawiah Benjamin (2016). Effects of differential degree of chemical modification on the properties of modified starches: Sizing. *The Journal of Adhesion*. https://doi.org/10.1080/00218464.2016.1250629

Book chapters 6

1. **B Sarkodie**, B Tawiah (2026). Machining and Machinability of Nanofiber Composites: Advanced and Hybrid Techniques. *Natural Fiber Composites for a Sustainable Environment*. https://doi.org/10.1201/9781032665337-9

2. **B Sarkodie**, B Tawiah (2025). Biodegradable Materials: The Future of Sustainable Fabrics. *Advances in Textile Materials and Processing Techniques for Sustainability*. https://doi.org/10.1007/978-981-95-0469-5_8

3. **Bismark Sarkodie**, Benjamin Tawiah, Benjamin K. Asinyo, Bin Fei (2025). Bionanocomposites in Environmental Remediation and Water Purification. *Advanced structured materials*. https://doi.org/10.1007/978-981-96-8225-6_8

4. BF Benjamin Tawiah, **B Sarkodie** (2024). High Performance Butadiene Rubbers with Cellulosic Nanomaterials. *Properties and Applications of Butadiene Rubbers*. https://research.polyu.edu.hk/en/publications/high-performance-butadiene-rubbers-with-cellulosic-nanomaterials/

5. **Bismark Sarkodie**, Benjamin Tawiah, Bin Fei (2024). Nanotechnology and the Environment: Opportunities and Challenges. *Advanced technologies and societal change*. https://doi.org/10.1007/978-981-97-6184-5_5

6. **B Sarkodie**, EK Howard (2024). Tailoring bio waste as a potential filler in butadiene-based rubbers. *Properties and Applications of Butadiene Rubbers*. https://research.polyu.edu.hk/en/publications/tailoring-bio-waste-as-a-potential-filler-in-butadiene-based-rubb/