

## CURRICULUM VITAE- HENRY AGBE

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Kumasi, Ghana.

### Academic Positions:

|                                      |   |
|--------------------------------------|---|
| <b>KNUST, Ghana</b><br>2023- Present | <b>Kwame Nkrumah University of Science and Technology,<br/>Materials Engineering Department</b><br>Lecturer                                       |
| <b>LBB, Canada</b><br>2021-2023      | <b>Laval University, Laboratory for Biomaterials and Bioengineering</b><br>Postdoctoral researcher under the supervision of Prof. Diego Mantovani |
| <b>ANU, Ghana</b><br>2012-2016       | <b>All Nations University, Oil and Gas Engineering Department.</b><br>Lecturer  |
| <b>Bucksmore, UK</b><br>2016-2017    | <b>Bucksmore Education School-England, UK</b><br>Tutor (Nanotechnology)   |

### Industry Positions:

|  |   |
|--|---|
| <b>Golden Star, Ghana</b><br>2009-2010 | <b>Golden Star, Bogoso/Prestea Limited, Ghana</b><br>Shift Supervisor     |
| <b>Golden Star, Ghana</b><br>2008-2009 | <b>Golden Star, Bogoso/Prestea Limited, Ghana</b><br>Trainee Metallurgist |

### Education:

|                                     |   |
|-------------------------------------|---|
| <b>Quebec, Canada</b><br>2018- 2021 | <b>University of Quebec (UQAC)</b><br><b>PhD in Engineering (Biomaterials Major)</b><br>Thesis: Antimicrobial Aluminum Surfaces<br>Grade: Distinction (4.15/4.30)<br>Thesis director: Prof. Dilip K. Sarkar   |
| <b>UG, Ghana</b><br>2015- 2017      | <b>University of Ghana (Legon)</b><br><b>PhD in Materials Science and Engineering</b><br>Thesis: Novel Nanostructured Photocatalysis for Oil Spill and Cyanide<br>Detoxification<br>Grade: Discontinued<br>Thesis director: Prof. David Arhin-Dodoo             |
| <b>Cambridge, UK</b><br>2010- 2011  | <b>University of Cambridge, UK</b><br><b>M.Phil. Degree in Micro &amp; Nanotechnology Enterprise</b><br>Thesis: New Methodologies for Assessing the Eco-toxicology of Nano-scale<br>Materials<br>Grade: Pass (60-74%)<br>Thesis director: Prof. Caterina Ducati |
| <b>Cambridge, UK</b>                | <b>University of Cambridge, UK</b>  |

## CURRICULUM VITAE- HENRY AGBE

2010-2011 **Pre-sectional course: English for Academics Purpose**  
Grade: Pass (80 - 100%)

**KNUST, Ghana** **Kwame Nkrumah University of Science and Technology, Ghana.**  
2004- 2008 B.Sc (Hons) Degree in Minerals Engineering  
Thesis: A study on the use of cocoa husk-ash as a flux component in gold Smelting  
Grade: First Class (70-100%)  
Thesis director: Prof. E.K. Asiam

**Josco, Ghana** **St Joseph's College of Education, Ghana.**  
2000- 2003 Teacher Certificate A  
Grade: Distinction (80-100%)

### Grants/Funding/Awards/Scholarships:

- 2024-2026 Cambridge-Africa Alborada Research Fund Grant (Co-PI 20,000 Pounds)
- 2023-2025 US-National Institutes of Health (NIF) Grant (Co-PI \$60,000 US)
- 2022-June, Quebec Government FRQNT Postdoctoral Fellowship (\$35,000/per Year)
- 2021-August, Award in recognition of excellence for most prolific publishing student (\$1,000)
- 2018- June Best poster award Journée des étudiants du REGAL (\$500)
- 2018-2021- Fonds de recherche du Québec - Nature et technologies (FRQNT), PhD scholarship (\$25,000/per Year)
- 2016-2017 Commonwealth Split Site (PhD) Scholarship: University of Cambridge. (40,000 Pounds)
- 2017-2017 Wolfson College Research Grant- University of Cambridge. (800 Pounds)
- 2013-2014 Cambridge-Africa Alborada Research Fund (6,000 Pounds)
- 2012-2013 Department of Health's Bursary- Nanomedicine, Cranfield University (3,000 Pounds)
- 2010-2011 Cambridge-Commonwealth Shared-Scholarship Award (M.Phil. Scholarship) (27,000 Pounds)
- 2000-2003 Best Student Award -Religious and Moral Education-Josco

### PUBLICATIONS

#### Published or accepted

1. **H.Agbe**, S. Kwofie, Recent Advances in Mechano-bactericidal Nanostructured Surfaces for Biomedical Implants and Frequently Touched Surface Applications, IntechOpen, 2024. DOI: 10.5772/intechopen.1007269.
2. **H. Agbe**, D.K Sarkar, X.G. Chen, D. Dodoo-Arhin, Ultrasonic-Biogenic silver synthesis on anodized aluminum with superior antibacterial properties, Materials Advances, 2023, DOI: 10.1039/D3MA00366C (Q1 journal, *high impact IF 5.0*)
3. **H. Agbe**, D.K Sarkar, X.G. Chen, Antimicrobial aluminum surfaces for curbing healthcare-associated infections-A short review, Engineering Proceedings. 43,1, 2023, (Q2 Journal)
4. **H. Agbe**, D.K. Sarkar, X.G. Chen, Anodized aluminum surface with topography-mediated antibacterial properties, *ACS Biomater. Sci. Eng.* 8, 3, 2022, 1087–1095 (Q1 journal, *high impact IF 5.8*) <https://doi.org/10.1021/acsbomaterials.1c01485>.
5. **H.Agbe**, D.K Sarkar, XG Chen, DDodoo-Arhin. Silver–Polymethylhydrosiloxane–Quaternary Ammonium Coating on Anodized Aluminum with Excellent Antibacterial Property, ACS Applied Bio Materials 5 (10), 4760-4769, (100790 (Q1 journal, *high impact IF 4.7*) (<https://doi.org/10.1021/acsabm.2c00248>).
6. Nyankson, **H. Agbe**, **G. K. S. Takyi**, **Y. D. Bensah**, D. K. Sarkar Recent advances in nanostructured superhydrophobic surfaces: fabrication and long-term durability challenges, June 2022 Current Opinion in Chemical Engineering 36:100790 (Q1 journal, *high impact IF 6.6*) DOI: [10.1016/j.coche.2021.100790](https://doi.org/10.1016/j.coche.2021.100790)

7. **H. Agbe**, D.K. Sarkar, X.G. Chen, Electrochemically synthesized silver phosphate coating on anodized aluminum with superior antibacterial properties, *Surface and Coating Technology*, volume 428,2021,127892, ISSN 0257-8972, (Q1 journal, high impact **IF 5.4**) <https://doi.org/10.1016/j.surfcoat.2021.127892>
8. **H. Agbe**, D.K. Sarkar, X.G. Chen, N. Fauchaux, G. Soucy, J.-L. Bernier, Silver-polymethylhydrosiloxane nanocomposite coating on anodized aluminum with superhydrophobic and antibacterial properties, *ACS Appl. Bio Mater.*, 3, 7 (2020) 4062–4073. (Q1 journal, high impact, **IF 4.7**) <https://doi.org/10.1021/acsabm.0c00159>.
9. **H. Agbe**, D. K. Sarkar, X.-G. Chen, Tunable Superhydrophobic Aluminum surfaces with Antibiofouling and Antibacterial Properties, *Coatings*2020, 10 (10), 982. (Q1 journal, **IF 3.4**). <https://doi.org/10.3390/coatings10100982>.
10. Dodoo-Arhin, E. M. Etchu, S. K. O. Ntwampe, E. N. Malenga, E. Fosso-Kankeu, B. Agyei-Tuffour, E. Nyankson, A. Yaya, **H. Agbe**, Synthesis of Nanostructured Cupric Oxide for Visible Light Assisted Degradation of Organic Textile Dye Pollutants, *Co-engineering*, Vol.8,2021 (Q2 journal, high impact but not yet indexed) <https://doi.org/10.1080/23311916.2021.1920563>
11. Dodoo-Arhin, E. M. Etchu, B. Agyei-Tuffour, E. Nyankson, J. D. Obayemi, A. A Salifu, A. Yaya, **H. Agbe**, W. O. Soboyejo Modified nanostructured titania photocatalysts for aquatic disinfection applications, September 2020 *Materials Today: Proceedings*38(12) (Q2 journal, high impact but not yet indexed) DOI: [10.1016/j.matpr.2020.07.710](https://doi.org/10.1016/j.matpr.2020.07.710)
12. **H. Agbe**, E. Nyankson, N. Raza, D. Dodoo-Arhin, A. Chauhan, G. Osei, V. Kumar, K.-H. Kim, Recent advances in photoinduced catalysis for water splitting and environmental applications, *Journal of Industrial and Engineering Chemistry*, 72 (2019) 31-49. (Q1 journal, **IF 6.1**). <https://doi.org/10.1016/j.jiec.2019.01.004>.
13. **H. Agbe**, N. Raza, D. Dodoo-Arhin, R.V. Kumar, K.-H. Kim, A simple sensing of hazardous photo-induced superoxide anion radicals using a molecular probe in ZnO-Nanoparticles aqueous medium, *Environmental research*, 176 (2019) 108424. (Q1 journal, **IF 8.3**). <https://doi.org/10.1016/j.envres.2019.03.062>.
14. **H. Agbe**, N. Raza, D. Dodoo-Arhin, A. Chauhan, R.V. Kumar, H<sub>2</sub>O<sub>2</sub> rejuvenation-mediated synthesis of stable mixed-morphology Ag<sub>3</sub>PO<sub>4</sub> photocatalysts, *Heliyon*, 4 (2018) e00599. (Q1 journal, **IF 3.8**). <https://doi.org/10.1016/j.heliyon.2018.e00599>
15. Dodoo-Arhin, F.P. Buabeng, J.M. Mwabora, P.N. Amaniampong, **H. Agbe**, E. Nyankson, D.O. Obada, N.Y. Asiedu, The effect of titanium dioxide synthesis technique and its photocatalytic degradation of organic dye pollutants, *Heliyon*, 4 (2018) e00681. (Q1 journal, **IF 3.8**). <https://doi.org/10.1016/j.heliyon.2018.e00681>.
16. Raza, N. Raza, **H. Agbe**, R. Kumar, K.-H. Kim, J. Yang, Multistep sequestration and storage of CO<sub>2</sub> to form valuable products using forsterite, *Energy*, 155 (2018) 865-873. (Q1 journal, **IF 9.0**). <https://doi.org/10.1016/j.energy.2018.05.077>.
17. Raza, W. Raza, S. Madeddu, K.-H. Kim, Synthesis and characterization of amorphous precipitated silica from alkaline dissolution of olivine, September 2018, *RSC Advances*8(57):32651-32658 (Q1 journal, **IF 3.9**) DOI: [10.1039/C8RA06257A](https://doi.org/10.1039/C8RA06257A).
18. Raza, K.-H. Kim, **H. Agbe**, S.K. Kailasa, J.E. Szulejko, R.J. Brown, Recent advances in titania-based composites for photocatalytic degradation of indoor volatile organic compounds, *Asian Journal of Atmospheric Environment*, 11 (2017) 217-234. (**IF 1.5**). <https://doi.org/10.5572/ajae.2017.11.4.217>.
19. **H. Agbe**, C. Ducati, The Strange world of the Nanoscale. *Applied Thought (Multidisciplinary Approach)*, 3 (2015) 235-244. (Popularization and awareness article)
20. **H. Agbe**, C. Ducati, the prospect of using photocatalytic metal oxide nanoparticles for degrading oil spill-An innovative Approach in Environmental Remediation. *Applied Thought (Multidisciplinary Approach)*, 3 (2013) 35-43. (Popularization and awareness article)

**Yet to be submitted**

1. **H. Agbe**, D. K. Sarkar, X.-G. Chen, N. Faucheux, G. Soucy, J. L. Bernier, Silver-based nanocomposite coatings on aluminum with tunable antibacterial and antifouling properties,

**Book Chapter:**

Biomaterials handbook (Under 2<sup>nd</sup> Review)

Chapter title: Biomedical Co-Cr-based alloys

**Teaching and supervising experience:**

KNUST, Ghana. Supervised 30 under graduate students; and supervising 2 Masters students. 2023-Present.

ANU, Ghana. Supervised 25 under graduate students. 2012-2016

**Under graduate taught course @ KNUST**

- Electrometallurgy
- Corrosion of Engineering Materials
- Engineering Ceramics
- Properties of Engineering Materials
- Introduction to Metallurgical Engineering
- Hydrometallurgical Applications

**Postgraduate taught course @ KNUST**

- Biomaterials

**Postgraduate taught course @ Laval University**

- Biomaterials for implants and Artificial Organs.

**CONFERENCES:**

- Oral Presentation on "Antimicrobial Aluminum Surfaces for Curbing Healthcare Associated Infections" at the Sustainable Innovative Technologies for Development Conference, November 2023-University of Ghana.
- Oral Presentation: 7<sup>th</sup> International Conference and Exhibition on Advanced and Nanomaterials – Montreal, Canada, 12-14<sup>th</sup> August, 2019

## CURRICULUM VITAE- HENRY AGBE

- Oral Presentation: Journée des étudiants du REGAL | JER2019- Laval University, Canada October 2019.
- Poster Presentation: Journée des étudiants du REGAL | JER2019- Laval University, Canada October 2019.
- Poster Presentation: Journée des étudiants du REGAL | JER2018- McGill University, Canada June 2018.
- Oral Presentation: 2nd International Conference on New Photocatalytic Materials for Environment, Energy and Sustainability-Slovenia - July 2017
- The International Oil Spill Conference (IOSC)- Long Beach, California, USA-May 2015
- Poster Presentation: Wolfson Research Event- University of Cambridge, England. -Feb 2017
- Oral Presentation: National Physical Laboratory- Teddington, Middlesex-UK. – May

### **OTHER INVOLVEMENTS:**

- 2024-2026: College of Engineering Intellectual Property Representative, KNUST.
- 2024-2026: Policy Advocate on Proposal writing and development, Obuasi Campus KNUST.
- 2024-Present: A member of Curriculum development for Metallurgical Engineering Programme, KNUST.
- 2024-Present: A member of National Curriculum Development for STEM Teachers in Ghana, KNUST.
- 2023-2025: Faculty Mechanical and Chemical Engineering's Co-Ordinator for Grant and Research-KNUST.
- 2023-2025: Materials Engineering Department's Co-Ordinator for Grant and Research.
- 2018-Date: Reviewer for: Results in Physics (RINP); Materials Today: Proceedings; Scientific African.

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**REFEREES:**

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