**CURRICULUM VITAE**

**ISAAC ACQUAH** *BSc, MSc, PhD*

*PE-GhIE, FTCC*

**Department of COMPUTER Engineering**

**Faculty of ELECTRICAL and COMPUTER engineering**

**College of Engineering**

**Kwame Nkrumah University of Science and Technology**

**Kumasi Ghana**

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**PERSONAL PROFILE**

Surname: Acquah

First Name: Isaac

### Date of Birth: 11thMay, 1982

Place of Birth: Winneba

Gender: Male

Marital Status: Married

Nationality: Ghanaian

Current Rank**:** SeniorLecturer

Professional Affiliation: Professional Engineer, Ghana Institution of Engineering

Fellow, Technology Consultancy Center, KNUST, Kumasi

**1. ACADEMIC DEGREES AND INSTITUTIONS ATTENDED**

**1(a) Academic degrees earned with dates**

**BSc** Computer Engineering, June 2005

**MSc** Biomedical Engineering, November 2007

**Certificate**, Test of Proficiency in Korean, July 2013

**PhD** Biomicrosystem Engineering (Biomedical Engineering Major), August 2017

**1(b) Institutions attended with dates**

2001 – 2005 Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

2006 – 2007 University of Surrey, Guildford, England

2012 – 2013 Language Institute, Inha University, Incheon, Republic of Korea

2013 – 2017 Korea University, Seoul, Republic of Korea

**2. UNIVERSITY TEACHING AND RESEARCH EXPERIENCE**

**2(a) Academic ranks held and subjects taught**

2019 – date Senior Lecturer, Department of Computer Engineering, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

*Courses Taught:* Bioinstrumentation I & II, Biomedical Engineering Design, Optometric Instrumentation, Research Methods, Biosignal Processing and Analysis, Medical Device Regulation

2008 – 2019 Lecturer, Department of Computer Engineering, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

*Courses Taught:* Bioinstrumentation, Medical Instrumentation, Biomedical Engineering Design, Optometric Instrumentation, Biotechnology, Healthcare Technology Management, Basic Electronics, Data structures and Algorithms, Introduction to Information Technology, C-Programming

2005 – 2006 Teaching Assistant, Department of Computer Engineering, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

**2(b) Other professionally related experience**

*(i) Conference and Training workshops I have participated in*

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| February, 2020  December, 2019  August, 2018  March, 2018  March, 2018 | * “Addressing Local Healthcare Needs through Biomedical Engineering Innovations”, 2nd National Conference, Ghana Society of Biomedical Engineers, KNUST, Ghana. * “Gender Mainstreaming in Higher Enducation and Research: Behind the Scenes”, hosted by the Brew-Hammond Energy Centre, KNUST. * 8th KNUST Summer School for Academic Staff on “Improving Quality of Higher Education through Effective Measurement and Evaluation” – KNUST, Ghana * Faculty Development Symposium by Arizona State University Team on Project-based Learning and research publication– KNUST, Ghana * PhD Supervision Guidelines under the Building Stronger Universities Project (BSUII) – KNUST, Ghana |
| August, 2017 | * 7th KNUST Summer School for Academic Staff on “Technology, Manpower Training and Development” – KNUST, Ghana |
| June, 2014 | * 22nd Polymer Academy by the Polymer Society of Korea on polymerization, elastomers for stretchable electronics, rheology and rheological process of polymer coating, structure, thermal and mechanical properties of polymers, lithium battery principle, application and polymer material.– Korea University, Seoul, South Korea |
| July, 2014 | * Nanotechnology Toward Advanced Healthcare Materials, Special Session on Wiley Small Journal (Wiley-VCH)–#327 Coex, Seoul, Korea |
| May, 2014 | * International Symposium on Extracellular Vesicles for Biomedical Applications, Molecular Medicine and Biopharmaceutical Sciences, Seoul National University– Seoul National University Children’s Hospital, South Korea |
| September – December, 2013 | * English Mediated Instruction Program for Faculty and Graduate Students (2 hours/week) organized by Centre for Teaching and Learning, Korea University– Seoul, South Korea. |
| August, 2012  May, 2012  August, 2011  July, 2009  February, 2009 | * 2nd KNUST Summer School for Academic Staff – KNUST, Ghana * Seminar on Stem Cells and Tissue Engineering organized by Technology Consultancy Centre-University of Pennsylvania Development Summer Institute – KNUST, Ghana * 1st KNUST Summer School organized by QAPU for Staff on “ Equipping Staff for Leading Change in Academia” – KNUST, Ghana * 7th College of Engineering Research Retreat on “The Role of Science, Technology and Innovation in Achieving the MDGs” – Koforidua, Ghana * KNUST Institutional Policy and OER Workshop on “Open Educational Resources and its potential Contribution to KNUST” – KNUST, Ghana |

**3. RESEARCH AND PUBLICATIONS**

**3(a) Research Interests**

My research interests is mainly focussed bioinstrumentation, healthcare technologies and rehabilitation engineering.

1. Bioinstrumentation
2. Healthcare technology development
3. Nano and micro structure fabrication and their sensing applications
4. Biomaterials

**3(b) Publications arising out of the research**

*Journal Publications*

1. **I. Acquah**, D. Adarkwah, I. Andorful, and Y. Ahmed, “Shea Butter as a Viable Couplant for Ultrasound Imaging”, *Journal of Biomedical Science and Engineering*, vol. 12(1), pp. 31-39, 2019.
2. **I. Acquah**, “Synthesis, Characterization and Biomedical Applications of Dye-Doped Silica Nanoparticles”, *International Journal of Pharma and Bio Sciences*, vol. 10(1), pp. 115-126, 2019.
3. E. T. Tchao, **I. Acquah**, S. D. Kotey, C. S. Aggor, J. J. Kponyo, “On Telemedicine Implementations in Ghana”, *International Journal of Advanced Computer Science and Applications*,vol. 10(3), pp. 193-201, 2019.
4. X. Tan, **I. Acquah**, H. Liu, W. Li, and S. Tan, "A critical review on saline wastewater treatment by membrane bioreactor (MBR) from a microbial perspective," *Chemosphere,* vol. 220, pp. 1150-1162, 2019.
5. J. O. Agyemang, J. J. Kponyo, and **I. Acquah**, “Lightweight Man-In-The-Middle (MITM) Detection and Defense Algorithm for WiFi-Enabled Internet of Things (IoT) Gateways”, *Information Security and Computer Fraud*,vol. 7(1), pp. 1-6, 2019.
6. **I. Acquah**, J. Roh, and D. J. Ahn, "Dual‐fluorophore raspberry‐like nanohybrids for ratiometric pH sensing," *Chemistry–An Asian Journal,* 2017. DOI: 10.1002/asia.201700616
7. **I. Acquah**, J. Roh, and D. J. Ahn, “Dual-Fluorophore Silica Microspheres for Ratiometric Acidic pH Sensing*," Macromolecular Research*, vol. 25. pp 1-6, 2017.
8. D. A. Y. Agyapong, H. Zeng, W. Du, **I. Acquah**, and Y. Liu, "Comparative analysis of the structural and physical properties of magnetron Co-sputtered Ag-doped and Si-doped hydroxyapatite coatings on titanium substrates," *Integrated Ferroelectrics,* vol. 180, pp. 69-76, 2017.
9. **I. Acquah**, S. Tan, W. Li, and H. You, "Isolation and Cell Immobilization of Marine Halophilic Bacteria for Saline Wastewater Treatment," *Fresenius Environmental Bulletin,* vol. 26, pp. 885-891, 2017.
10. S. Tan, **I. Acquah**, and W. Li, "Cultivation of marine activated sludge to treat saline wastewater," *Fresenius Environmental Bulletin,* pp. 3134 - 3141, 2016.
11. D. A. Y. Agyapong, H. Zeng, **I. Acquah**, and Y. Liu, "Structural and Physical Properties of Magnetron Co-sputtered Silver Containing Hydroxyapatite Coatings on Titanium Substrates," *Integrated Ferroelectrics,* vol. 163, pp. 64-72, 2015.

*Conference Papers*

1. **I. Acquah**, and N.K. Imbeah, “Customization of a Derbian Linux Distribution for KNUST*,* In *Proceedings of the 7th College of Engineering Research Retreat*, Eds. Kyei-Baffour N., Bart-Plange A. and Fiagbe Y.A.K. pp 1-6, 2009.
2. **I. Acquah**, and S.K. Boachie, “Implemntation of Router on Linux Platform*,* In *Proceedings of the 7th College of Engineering Research Retreat*, Eds. Kyei-Baffour N., Bart-Plange A. and Fiagbe Y.A.K. pp 1-6, 2009.

**4(a) Service to University (KNUST) Community**

1. Alumni Representative: Campus Chapter, KNUST. 2010 – 2012.
2. College of Engineering Representative: College of Health Sciences Board. 2010 – 2011.
3. Collection Administrator: Library of College of Engineering, KNUST. 2010 – 2012.
4. Member: Quality Assurance Committee, College of Engineering (chaired by Prof. N. Kyei-Baffour) 2011 – 2012.
5. Faculty Examinations Officer: Faculty of Electrical and Computer Engineering, KNUST. 2009 – 2010 & 2017 – date.
6. Member: Examination Coordinating Committee, KNUST. 2009 – 2010 & 2017 – date
7. Member: Committee of Enquiry – Incidents requiring investigations for 2nd Semester Examinations, 2008/2009 in the Faculty of Electrical and Computer Engineering. 2009.
8. Departmental Examinations Officer: Department of Computer Engineering, KNUST. 2008 – 2009.
9. Course Facilitator: BSc. Computer Engineering Program at the Institute of Distance Learning, KNUST. 2008 – 2012.
10. Program Coordinator: BSc. Computer Engineering Program at the Institute of Distance Learning, KNUST. 2008 – 2012.
11. Member: Tender Evaluation Panel, KNUST. 2018 – date.
12. Member: Orientation planning committee, Department of Computer Engineering, KNUST. 2017
13. Member: Curriculum Development Committee, Department of Computer Engineering, KNUST. 2017 – date.
14. Chairperson: Biomedical Laboratory Restoration Committee, Department of Computer Engineering, KNUST. 2017
15. Academic Supervisor: Department of Computer Engineering, KNUST. 2008 – 2012.
16. Academic Supervisor: Department of Computer Engineering, KNUST. 2017 – date.
17. Academic Tutor: Department of Computer Engineering, KNUST. 2017 – date.
18. Program Coordinator: Biomedical Engineering, KNUST. 2017 – 2018.
19. Member: Security Committee, College of Engineering (CoE), KNUST. 2018 – date.
20. Member: Faculty Board, Faculty of Electrical and Computer Engineering (FECE), College of Engineering (CoE), KNUST. 2017 – date.
21. Member: Faculty Examinations Audit Team, FECE, CoE, KNUST. 2018 – date.
22. Examiner: Doctoral and Masters Viva Voce, Graduate School, KNUST. 2019
23. Mentor and Fellow: Unity Hall, KNUST. 2018 – date.

**4(b) Record of Service to National / International Community**

1. Guest Speaker: 2nd National Conference, Ghana Society of Biomedical Engineers, KNUST, Ghana. 27th February, 2020
2. Moderator: Biomedical Engineering Program, All Nations University College, Koforidua. 2011 – 2013 & 2017 – date
3. External Examiner: Br. Tarcisius Prosthetics and Orthotics Training College, Adoagyiri-Nsawam. 2017 – date.
4. Assessor: Senior High Schools Engineering Project Competition, Ghana Institution of Engineering (GhIE), Ashanti Region. 2018 – 2019
5. Panel Member: Admission Examinations, Ghana Institution of Engineering (GhIE), Ashanti Region. 2018 – date
6. Reviewer: Macromolecular Research, Springer. From 2018 - Date