

Daniel A. Addo, PhD

BIOMEDICAL ENGINEER (SPECIALIZED IN PHYSIOLOGICAL MODELLING) · MEDICAL PHYSICIST

Department of Computer Engineering, Kwame Nkrumah University of Science and Technology, Kumasi, Ashanti Region, Ghana.

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"Where there is determination, failure cannot dismantle the flag of success."

Education

UNIVERSITY OF AUCKLAND (AUCKLAND BIOENGINEERING INSTITUTE)

Ph.D. in Bioengineering

Auckland, New Zealand

Feb. 2016 - June. 2021

- Published a chapter of my thesis in the area of computational modelling and magnetic resonance imaging.

UNIVERSITY OF GHANA (MEDICAL PHYSICS DEPARTMENT)

MPhil. in Medical Physics

Accra, Ghana

Aug. 2012 - July. 2014

- Courses: Medical physics, radiobiology, human anatomy and physiology, magnetic resonance imaging, nuclear medicine.

UNIVERSITY OF GHANA (BIOMEDICAL ENGINEERING DEPARTMENT)

BSc. in Biomedical Engineering

Accra, Ghana

Aug. 2004 - June. 2008

- Courses: Engineering Mathematics, Biomaterials, Biomechanics, Chemistry, Biology, Physics, Introduction to Software Engineering, C and C++ Programming.

POPE JOHN SENIOR HIGH SCHOOL (SCIENCE CLASS)

SSSCE [Science]

Koforidua, Ghana

Aug. 2000 - Aug. 2003

- Courses: Biology, Physics, Chemistry, Elective Mathematics, English, Core Science, Social studies, Core Mathematics.

Skills

PROGRAMMING

Python, Fortran, Perl, C, C++.

SOFTWARE

Matlab, SolidWorks, Autodesk Mechanical Desktop, Microsoft Office, Latex.

PERSONAL ATTRIBUTE

Hardworking, Problem solver, Team player, Good time management.

LANGUAGES

English, Twi.

Publications

PAPERS:

- Addo, D. A., Kang, W., Prisk, G. K., Tawhai, M. H., Burrowes, K. S. (2019). Optimizing human pulmonary perfusion measurement using an in silico model of arterial spin labeling magnetic resonance imaging. *Physiological reports*, 7(11), e14077. <https://doi.org/10.14814/phy2.14077>
- Addo, D. A., Kaufmann, E. E., Tagoe, S. N., Kyere, A. K. (2022). Characterization of GafChromic EBT2 film dose measurements using a tissue-equivalent water phantom for a Theratron® Equinox Cobalt-60 teletherapy machine. *PloS one*, 17(8), e0271000. <https://doi.org/10.1371/journal.pone.0271000>.
- Addo, D. A., Boatemaa, M. A., Aniewu, E. P. (2022). Optimizing the determination of blood groups via image processing. *All Nations University Journal of Applied Thought (ANUJAT)*, 9(1): 32-47. All Nations University Press. doi: <http://doi.org/10.47987/ZRAO4601>. Available at: <http://anujat.anuc.edu.gh/universityjournal/anujat/Vol9/No1/3.pdf>

- Mensah, B., Onwona-Agyeman, B., Efavi, J. K., Ofor, R. A., Zigah, M., Koranteng, J., ... Addo, D. A. (2023). Investigating the Effect of Curing Activators on the Cure Kinetics of Acrylonitrile–Butadiene Rubber Filled with Graphene Oxide and Reduced Graphene Oxides Nanocomposites. *International Journal of Polymer Science*, 2023. <https://doi.org/10.1155/2023/6387898>

THESIS:

- Addo, D. A. “Implementation of in vivo Dosimetry for External Photon Beam Radiotherapy Using Gafchromic Ebt 2 Film.” PhD diss., University of Ghana, 2014.
- Addo, D. A. “In silico modelling to advance arterial spin labelling magnetic resonance imaging.” PhD diss., University of Auckland, 2020.

ABSTRACT:

- Addo, D. A., A. R. Elliot, R. Thielmann, A. Niese, C. Darquenne, G. K. Prisk, M. H. Tawhai, and K. S. Burrowes. “Optimizing Conduit Vessel Removal from Perfusion Quantification Using Arterial Spin Labeling Magnetic Response Imaging Via in Silico Modeling.” In A68. *New Techniques, Methodologies, and Mathematical Modeling*, pp. A2267-A2267. American Thoracic Society, 2019.
- Addo, D., Tawhai, M. H., Clark, A. R., Glenney, R. W., Prisk, G. K., & Burrowes, K. S. (2020). A Theoretical Comparison of ASL MRI and Microsphere Estimation of Pulmonary Blood Flow. In A57. *Pulmonary Vascular Diseases and RV Functions: Novel Signalling Mechanisms, exciting models and Emerging Treatment Options* (pp. A2097-A2097). American Thoracic Society.

Work Experience

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY
Lecturer (Current Job)

Kumasi, Ghana
January 2022 -

- Teaching Biomedical Engineering Design, Basic Electronics, Biomedical Signal Processing.

ALL NATIONS UNIVERSITY
Lecturer

Koforidua, Ghana
February 2021 - January 2022

- Taught Medical Physics, Medical Imaging and Biomaterials.

AKIM STATE COLLEGE
Biology Teacher

Accra, Ghana
March 2010 - May 2012

- Taught senior high school students biology.
- Appointed as a house-master for one of the high school boys dormitory.

UNIVERSITY OF GHANA (BIOMEDICAL ENGINEERING DEPARTMENT)
Teaching Assistant

Accra, Ghana
August 2008 - February 2010

- I gave tutorials on engineering mathematics, biomaterial, biomechanics, tissue engineering.
- Assisted with administrative duties.

Honors & Awards

BHARATH INSTITUTE OF HIGHER EDUCATION AND RESEARCH

Chennai, India

- Appointed as external examiner to evaluate a PhD thesis.

July, 2021

ALL NATIONS UNIVERSITY

Koforidua, Ghana

- Part of a three member team that developed a curriculum for a new undergraduate programme. July, 2021
- Part of a team that developed a curriculum for a postgraduate degree in Biomedical Engineering. March, 2021

UNIVERSITY OF AUCKLAND

Auckland, New Zealand

- University of Auckland Doctoral Scholarship Feb. 2016 - Jan. 2020

UNIVERSITY OF GHANA (DEPARTMENT OF BIOMEDICAL ENGINEERING)

Accra, Ghana

- First Class Honours (3.78/4.00) August 2008
- Best Overall Graduating Student from the Faculty of Engineering Sciences. August 2008
- Best Overall Graduating Student from the Department of Biomedical Engineering. August 2008
- Abstract Accepted and Published in the Conference Proceedings of the 1st Ghana Biomedical Convention, GhanaBiomed. August 2008

Presentation

BIOMEDICAL ENGINEERING DEPARTMENT [ALL NATIONS UNIVERSITY]

Koforidua, Ghana

Oral Presentation

May 2021

- Research Methods in Engineering.

AUCKLAND BIOENGINEERING DEPARTMENT

Auckland, New Zealand

PhD Exit Oral Presentation

September 2020

- In silico modelling to advance arterial spin labelling magnetic resonance imaging.

MEDTECH CORE CONFERENCE

Auckland, New Zealand

Poster and Oral Presentation

July 2019

- Simulated and quantified ASL MRI within a porcine pulmonary circulation.
- Assessed the influence of intensity thresholding on ASL MRI within the porcine pulmonary circulation

AMERICAN THORACIC SOCIETY CONFERENCE

Dallas, U.S.A.

Poster Presentation

May 2019

- Simulated and quantified ASL MRI within a porcine pulmonary circulation.
- Assessed the influence of intensity thresholding on ASL MRI within the porcine pulmonary circulation

AUCKLAND BIOENGINEERING RESEARCH FORUM

Auckland, New Zealand

Poster Presentation

February 2018

- Assessed the effects of thresholding on ASL signal quantification..
- Assessed the effects of slice location, posture and cardiac output on ASL signal quantification.

MEDSCI CONFERENCE

Queenstown, New Zealand

Poster Presentation

September 2017

- Assessed the effects of inversion gap on ASL signal quantification..
- Assessed the effects of conduit vessel signal on ASL signal quantification.
- Assessed the effects of intensity thresholding on ASL signal quantification.

Research and Design Interest

- Design of Medical Devices.
- Medical Image Processing.
- Computational Physiological modelling.
- Applications of Deep Learning, Machine Learning and Artificial Intelligence in Biomedical Engineering.

Referees

[Please Contact Referees directly for reference letters].

DR. KELLY SUZZANE BURROWES:

Auckland Bioengineering Institute.

University of Auckland.

Auckland-New Zealand.

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Auckland Bioengineering Institute.

University of Auckland.

Auckland-New Zealand.

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DR. FRANCIS HASFORD:

Medical Physics Department.

University of Ghana.

Accra-Ghana.

Email: haspee@yahoo.co.uk.