

Profile of Professor David Dodoo-Arhin

Professor David Dodoo-Arhin is a Professor of Materials Science and Engineering and the Director of the Institute of Applied Science and Technology at the University of Ghana. He has over 26 years of experience in teaching, research and mentorship.

Prof. Dodoo-Arhin joined the Department of Materials Science and Engineering at the School (Faculty) of Engineering Sciences at the University of Ghana in January 2011 as a Lecturer, promoted to Senior Lecturer (2014), Associate Professor (2018) and Professor in 2021.

He was appointed the Head of the Department of Materials Science & Engineering, (2014 – 2016), Acting Director of the Institute of Applied Science and Technology (August-December 2016) and the substantive Director in 2022.

Education

Prof. Dodoo-Arhin started his primary education at the Monsignor Abatey Memorial School in Navrongo, Kassena Nankana District in the Upper East Region of Ghana and later at the Master Sam Memorial Preparatory School in Cape Coast. From 1989 to 1991, he attended the Junior Secondary School of the Advanced Teacher Training College (ATTC JSS) at Winneba, before proceeding to St. Augustine's College in Cape Coast, for his Senior High School Education (General Science) in 1992, completing in 1994.

He then went to the Foso Teacher Training College from 1995 to 1998 to obtain a professional Teacher's Certificate "A", before starting his professional teaching career at the Elmina Methodist 'B' Junior High School in the central region of Ghana.

David later enrolled at the University of Cape Coast in 2000 through the first Science remedial programme, from where he obtained a BSc. (Hons.) degree in Physics in 2004. Between 2004-2006, he taught Physics at St. Augustine's College and Holy Child High School both in Cape Coast. In November 2006, he obtained a scholarship from the Italian Government's "Ministero dell'Istruzione, dell'Università e della Ricerca (MIUR)" to enrol in the 22nd Cycle Doctor of Philosophy programme in Materials Engineering at the University of Trento in Italy, completing in April 2010. In the same year, he obtained a Postgraduate Diploma in Science Education (PGDE) from the University of Cape Coast. In 2023, he

obtained a MSc. degree in Development Finance at the University of Ghana Business School and received training in Science, Technology Parks and Areas of Innovation from the Korea Innovation Foundation (Daejeon, South Korea).

Career

Since joining the University of Ghana, Prof. Dodoo-Arhin has undertaken various postdoctoral research fellowships / visits at the University of Pretoria; University of Cambridge Graphene Centre (CAPREx programme); University of Strathclyde, UK; Université de Poitiers (France), Ecole des Mines d'Albi-Carmaux (France) and the Bundesanstalt für Materialforschung und -prüfung (BAM) (Germany), among others.

He is a visiting Professor at the University of Johannesburg, South Africa; a fellow of the Africa Science Leadership programme; a fellow of the Inter-Academy Partnership for Research on Science Advice for Policy and Alumni of the Ghana Young Academy. He is a member of numerous professional societies, including the Institution of Engineering, the International Union of Crystallography (IUCr) and the African Materials Research Society. Prof. Dodoo-Arhin has received several awards, including a meritorious service award by the College of Basic and Applied Sciences for his tenure as acting Director of the Institute of Applied Science and Technology at the University of Ghana in 2021.

Teaching, Research and Mentorship

Prof. David Dodoo-Arhin is a teaching faculty in the Department of Materials Science and Engineering, the Pan-African Doctoral Academy (PADA) and the Centre for Climate Change and Sustainability Studies. He has taught about 28 different courses at the undergraduate and postgraduate levels, examined more than 28 (masters and PhD) theses and has been an assessor for faculty promotions for universities in Ghana, Kenya, Germany, Canada, Botswana, Benin, Zimbabwe, Nigeria, and South Africa. Prof. Dodoo-Arhin has overseen the mentoring of 19 postgraduate students, over 30 undergraduate, and inspiring many young scientists in Ghana and throughout Africa.

Prof. David Dodoo-Arhin's key research areas include: advanced materials, sustainable energy materials and environmental solutions materials. He has executed several research projects with grant support from various funding agencies under these areas. In the area of advanced materials, Prof. Dodoo-Arhin's work has focused particularly on nanostructured

materials, engineering ceramics, construction materials and biomaterials. He has played a significant role in progressing sustainable energy materials, focusing on energy generation (solar cells) and storage technologies (batteries) while advocating for energy justice and facilitating the transition to renewable energy sources.

For environmental solutions materials, Prof. Dodoo-Arhin's interdisciplinary approach has been in photocatalysis, water treatment, biomass/agricultural waste valorisation and polymers/plastic waste valorisation. His current community impact project, "Valorisation of Waste Plastics for Fuel Production (VALOPLASTIQUES)", seeks to remediate the menace of plastic waste by reprocessing them into high value fuels and chemicals for households, outboard motors or small running engines.

He has authored over 105 peer-reviewed journal publications across a diverse array of reputable scientific journals, 7 book chapters and a patent. His work has garnered over 2700 citations on Google Scholar, with an h-index of 30 and an i10-index of 58.

At the University of Ghana, Prof. Dodoo-Arhin has served on several boards and committees. These include, Academic Board, Board of the School of Graduate Studies, Advisory Board of the College of Basic and Applied Sciences, Management Committee of the Institute of Applied Science and Technology (IAST), ORID Management Committee, WACCBIP Management Committee, School of Engineering Sciences Management Committee, Department Teaching Assessment Committee and the Macjannet Prize for Global Citizenship Review Committee.

Outside the University of Ghana, Prof. Dodoo-Arhin also serves on several boards and committees. These include the Ghana Commission for UNESCO's National Committee for the Sciences, National Screening Committee for the DANIDA Fellowships Centre, Steering Committee of the ARUA – The Guild Clusters of Excellence in Renewable Energy, Steering Committee for the AESA-RISE Postdoctoral Fellowship Programme, Awards Committee for the Materials Research Society, Executive board of the African Materials Research Society, African Synchrotron Light Source project, Advisory Board member of the Scientific African Journal, editorial board of Progress in Natural Science: Materials International and LOC chair for the 2025 International Union of Materials Research Societies' (IUMRS) International Conference on Advanced Materials. He is also manuscript reviewer for journals like the

Journal of Chemical Engineering & Materials Science, Journal of Case Studies in Construction Materials, and ACS Journal of Industrial and Engineering Chemistry Research.

Family

Professor David Dodoo-Arhin, the only male child of three (3) siblings was born on 13th October, 1977 at Mamprobi in Accra to Mr. Solomon Bernard Arhin (*a retired draughtsman - Irrigation Development Authority*) and Madam Mary Aidoo (*a retired midwife – Ghana Health Services*). He is married to Mrs. Barbara Dodoo-Arhin and they are blessed with three children: Paolo, Emmanuel and Menaye. Prof. Dodoo-Arhin worships with the Prince Emmanuel Seventh Day Adventist Church at Ring Road Estates, Osu-Accra. Apart from English, he speaks Italian and French (Basic proficiency) in addition to local Ghanaian languages.