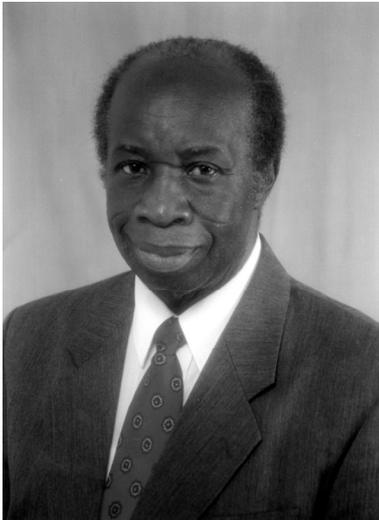


AFRICAN PHYSICIST, WORLD CITIZEN

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I was born on August 9, 1932 at Saltpond, Ghana, West Africa, along the coast of the Atlantic Ocean, usually called the Gulf of Guinea. My father was a general merchant. He owned a store and sold books, musical instruments, and fishing equipment. My mother was a dressmaker and my maternal grandmother was a fishmonger. As a young boy, my mother periodically sent me with provisions for my grandmother to a fishing village called Edumafa, in Ekumfi, a traditional area about six miles East of Saltpond. In those days, there was no motorable road between Edumafa and Saltpond and hence I had to walk. There I assisted my uncles in fishing.

I attended a Roman Catholic Elementary School at Saltpond. After classes my responsibilities were to dust and arrange books at my father's store. There I read books including biographies of renowned scientists: Newton, Einstein, Jeans, Hamilton, Gamow, Galileo, Maxwell and Rutherford. E.T. Bell's book "Men of Mathematics" had a profound influence on me. I

decided that I would also be a great scientist to learn more about the workings of the cosmos and to contribute to its understanding. After elementary school I went to a high school, Ghana National College at Cape Coast. The school was founded by Dr. Kwame Nkrumah, the first president of Ghana. After high school, I proceeded to the United Kingdom where I attended Borough Polytechnic, now called South Bank University, and then Imperial College of Science and Technology. Among my Professors at Imperial College were Abdus Salam, P.M. Blackett, Harry Jones and Eric Eady. I returned to Ghana in 1960 to teach mathematics for two years at Kwame Nkrumah University of Science and Technology.

In 1962, I went to Princeton University to study Mathematical Physics for my Ph.D. The Department of Physics at Princeton in the 1960's was a very exciting place. It was full of distinguished professors among whom were Wigner, Wheeler, Dicke, Hopfield, Bargmann and Goldberger. Oppenheimer, Dirac and Yang from the Princeton Institute of Advanced Study regularly visited the Department. During my stay in Princeton, Fitch and his group were working on their Nobel winning experiments on CP violation. Dicke and his collaborators were measuring oblateness of the sun, the cosmic background radiation of the universe and the gravitational constant to the accuracy of one part in 100 billion. As a graduate student, I occasionally assisted in some of the measurements of Dicke's group.

My earlier research investigation was on the quasi-static theory of air motion in the atmosphere due to heat and angular momentum sources. Lately, I have been working on the theory of condensed matter physics. I was the first to introduce electron-hole scattering resonances effect on soft X-ray spectroscopy. The effect has been observed in lithium. I am also working on the theoretical studies of superlattices and microstructures including chiral carbon nanotubes.

Some of my recent publications were ‘Photostimulated attenuation of hypersound in superlattices’, ‘Non-linear acousto-electric effect in semi conductor superlattices’ and ‘Differential thermopower of chiral carbon-nanotubes’. In Ghana, at the Kwame Nkrumah University of Science and Technology, I was Head of the Mathematics Department, Dean of the Faculty of Science, Founding Director of the Computer Science Department and Pro-Vice Chancellor. At the national level, I was Chairman of the Ghana Atomic Energy Commission on three separate occasions, Chairman of the Council for Scientific and Industrial Research, and Founder and National coordinator of the Ghana Energy Research Group.

Internationally, I was a member of the International Atomic Energy Agency (IAEA) Board of Governors and co-author of the Book “Comprehensive Study of Nuclear Weapons”, a UN Secretary-General report in 1979. I am a member of the Scientific Council of ICTP. Currently I am President, Society of African Physicists and Mathematicians. I am active in the field of Information Technology. I have served in various capacities for the past thirty years in Africa, Australia, Europe, USA and Latin America. I was Chairman of the Williamsburg Conference on International Information Economy in Virginia, USA 1986; Chairman and Organiser of the Section on Computer Education in Developing Countries of the 1980 International Federation of Information Processing (IFIP) Congress in Melbourne, Australia; and Chairman of the panel discussion on the Financial and Quantitative Aspects of Computer Education at the IFIP Congress, Marseilles, France (1975).

Why science? Apart from understanding the universe, and perceiving new potentialities, science is an essential means of meeting society’s needs for food, water, transport and communication, energy, good environment, health care, shelter, safety and alleviation of poverty. For example, utilizing science, less than 3% of people in the advanced countries are engaged in agriculture to produce sufficient food for their people. In Africa, because of the lack of scientific awareness, over 65% are engaged in agriculture and yet cannot produce enough food for their people. In fact, the development gap between the North and South is basically a manifestation of the technological gap.

As I wrote more than twenty years ago, “We (in the developing countries) paid the price for not taking part in the Industrial Revolution of the late eighteenth century because we did not have the opportunity to see what was taking place in Europe. We now see that information and communication technology (ICT) has become an indispensable tool. This time we should not miss out on this technological revolution”.

I am involved locally and internationally on policies and issues related to science and technology for sustainable development. In the area of rural development, I have assisted in the establishment of two elementary schools at Edumafa and Owomasi in the Central Region of Ghana. I also founded the only library at Saltpond.

I am a fellow of several professional and learned societies such as the Third World Academy of Sciences, the British Computer Society, the Nigeria Solar Energy Society, the Institute of Physics (U.K.), the Ghana Academy of Arts and Sciences, the Ghana Institution of Engineers. I am the founding fellow of the African Academy of Sciences and the Ghana Institute of Information Technology. I am the Patron of the Computing Association of Ghana, the Science Teachers' Association, the Ghana Physics Students' Association, and the Africa Institute of Mathematical Sciences (South Africa).

For my role in the development and promotion of mathematical sciences in Africa, the African Mathematical Union gave me an award and a medal. I have also received awards and medals from the Mathematical Association of Ghana and the Ivory Coast Mathematical Society as well as the Prince Philip Gold medal of the Ghana Academy of Sciences for my contribution to physical sciences in 1973. I also received the Deserving Scientist Award from the Ghana Science Association and the First World Bank-IMF African Club Award in 1999. I was awarded the Martin Luther King Jnr/Cesar Chevaz/Parks Visiting Professorship at the University of Michigan, Ann Arbor, USA (1997) for my contributions to physical sciences and the promotion of international relations in sciences.

In 1979, I was invited by the government of India for a month. I gave lectures and seminars in several institutions in the following cities: Bombay, New Delhi, Calcutta, Hyderabad, Madras, Bangalore and Trivandrum.

While a student in London, I married Edoris Enid Chandler from Barbados, West Indies who died in 1981. I remarried Asie Mirekua Akuamoah. I have four children, two boys and two girls, and four grandchildren.