OFFICE OF THE VICE-CHANCELLOR

VICE-CHANCELLOR'S SPEECH AT THE 8TH AFRICAN SCHOOL FOR ELECTRONIC STRUCTURE METHODS AND APPLICATIONS (ASESMA) 2025

ADDRESS BY:

PROFESSOR NANA ABA APPIAH AMFO

VICE-CHANCELLOR, UNIVERSITY OF GHANA

TUESDAY, JUNE 10, 2025

WACCBIP Conference Hall

University of Ghana

- *UNESCO Representative to Ghana, Mr. Edmond Moukala;*
- *Head, Ghana Commission for UNESCO, Dr Osman Damba Tahidu;*
- *The Scientific Committee of ASESMA, in particular Prof. Richard Martin, Prof. Nithaya Chetty, Prof. Nicola Seriani, and Prof. Shobhana Narasimhan;*
- *Provost of the College of Basic and Applied Sciences, Prof. Sandow M. Yidana;*
- *Deans and Directors Present;*
- *Ag. Dean of the School of the Physical and Mathematical Sciences;*
- *Ag. Head of the Department of Physics and other Heads of Department present;*
- *Faculty and Staff;*
- *Organizers of the School;*
- *Scientists and Participants;*
- *Invited Guests;*
- *Ladies and Gentlemen;*

Opening

It is both an honor and a privilege to welcome you to s, a gathering that brings together some of the brightest minds, innovative researchers, and dedicated practitioners in one of the most impactful and rapidly evolving fields in science and technology.

The University of Ghana is proud to host this august gathering of scientists, which has the objective of training young African scientists in the latest techniques of computational physics, for the second time. The first time we hosted ASESMA was in 2016, and it is worth noting that the impact of that School has been enduring, having led to a number of research projects, and the training of several Masters and PhD students both at the University of Ghana and beyond.

Indeed, at the Department of Physics currently, there are a number of active researchers in the field of computational condensed matter physics, and I anticipate that ASESMA 2025 will enhance the research capabilities of these faculty members and students and strengthen the University's profile as a hub for high-level international scientific collaboration.

Computational Science and Its Application

Computational science is key to research in many areas such as Materials Science and in Condensed Matter Physics, which is the immediate focus of ASESMA. Today's conference reflects a growing understanding that computational approaches are not confined to theoretical labs. They are actively shaping real-world solutions as outlined below:

- **Smartphones and Electronics**

  Simulation of semiconductors and dielectric materials has enabled faster, smaller, and more energy-efficient devices—found in every pocket and office around the world.

- **Clean Energy and Climate Action**

  Electronic structure modelling guides the discovery of materials that store and convert energy with lower cost and higher efficiency.

- **Health and Medicine**

  Simulations help design bio-compatible materials for prosthetics, drug delivery systems, and medical implants—offering safer, more effective treatments and faster innovation in healthcare.

- **Smart Homes and Cities**

  Materials for insulation, sensors, and LED lighting are improved using atomistic simulations, making buildings smarter, greener, and more responsive to human needs.

The list is endless, so are the opportunities.

Given Africa's rich mineral resources, this school provides a strategic opportunity to equip Ghanaian scientists with advanced computational tools to lead in research for development in the areas outlined above.

A Shared Vision

The University of Ghana prioritizes multidisciplinary and collaborative research that addresses the most pressing issues of our time. The broad application of computational science is therefore important to us because it encourages collaboration across different fields of science. We believe strongly in the power of collaboration and co-operation as highlighted in our fourth Strategic Priority *"Engagement and Partnerships"*, and are happy to note that ASESMA aligns with us.

I urge the organizers of ASESMA 2025 to seek further networks and collaborative opportunities beyond these two weeks, to build on what I believe will be a very successful school. ASESMA 2025 definitely offers a unique opportunity for collaboration with local and international institutions and agencies.

Women in Science

It is widely known that there are fewer women in science and engineering related fields however the trends are gradually changing. The University of Ghana is committed to inclusivity, and we are proud to say that in the area of science, we have several notable women researchers who are making their mark in the field – Prof. Nana Ama Browne Klutse, immediate past Head of the Department of Physics and a key member of the Local Organizing Committee of ASESMA 2025, who is a leading figure in Climate Science, and Prof. Elsie Kaufmann, Dean of the School of Engineering Sciences.

For the purposes of this event however, I would like to single out one of the prominent women in science for acknowledgement; Professor Shobhana Narasimhan, who is joining us from India. Her

enduring commitment to educating women in Physics can also be seen in her availability for teaching at ASESMA over the past several years.

Conclusion

The 8th African School on Electronic Structure Methods and Applications (ASESMA 2025) is more than a series of lectures. It is a platform for connection, a space for ideation, and a launchpad for global impact. As we open this School, I invite you to bring your full intellect, creativity, and passion into the dialogue. Ask bold questions. Share your insights. Challenge assumptions. And above all, imagine how our collective knowledge can serve humanity.

Before I take my seat, permit me to acknowledge the efforts of the organizing teams, the numerous organizations, local and international, which have come to support this school.

For our first time visitors, please make some time to explore our beautiful campus.

Thank you, and I wish you all a productive, engaging, and inspiring School.

Prof. Nana Aba Appiah Amfo

Vice-Chancellor

June 10, 2025