



The Abdus Salam
**International Centre
for Theoretical Physics**
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UNIVERSITY OF GHANA



4th African School on “Electronic Structure Methods and Applications” ASESMA-2016

12 - 25 June 2016

University of Ghana, Legon

The African School series on Electronic Structure Methods and Applications (ASESMA) is planned on a biennial basis from 2010 to 2020. The schools emphasize the theory and computational methods for predicting and understanding properties of materials through calculations at the fundamental level of electronic structure. Previous schools were held in Cape Town -South Africa (2010), Eldoret - Kenya (2012), and Johannesburg (2015).

PROGRAMME

The activity will cover basic methodological aspects such as density functional theory, electronic structure, many-body methods such as DFT+U, BSE, GW and quantum Monte Carlo, as well as molecular dynamics. It will also cover the application of these methods to the mechanical, dynamical, electronic, optical and magnetic properties of materials.

The school will consist of lectures and of hands-on computational laboratories based on state-of-the-art codes. Each participant will engage in a project depending upon his/her level. The projects will vary from calculation of the stable structures of materials for those without previous background in density functional calculations to more advanced calculations for those with more experience.

GRANTS

A limited number of grants are available to support the travel and living expenses of selected participants, with priority given to participants working in Africa and who are at the early stages of their career.

HOW TO APPLY FOR PARTICIPATION

Participants should have a background in solid state physics or chemistry at advanced undergraduate level, and be familiar with basic use of Linux and computer programming. The online application form can be accessed at the activity website

<http://indico.ictp.it/event/7664/>

Once in the website, comprehensive instructions will guide you step-by-step, on how to fill out and submit the application form.

DEADLINE for requesting participation: 11th March 2016

School Secretariat:

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***Organized in collaboration with
the University of Ghana***

Co-sponsors:

- *International Union for Pure and Applied Physics (IUPAP)*

- *National Institute for Theoretical Physics (NITheP), South Africa*

- *Swiss National Center for Computational Design and Discovery of Novel Materials (NCCR MARVEL)*

- *The Thomas Young Centre (TYC)*

- *US Liaison Committee for IUPAP*

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