“The first African Light Source: lighting the future of Africa”

Gihan Kamel [1, 2]

(1) SESAME Synchrotron (Synchrotron-light for Experimental Science and Applications in the Middle East), 19252 Allan, Jordan.
(2) Department of Physics, Faculty of Science, Helwan University, Cairo, Egypt.

Bringing forward the African educational systems, employment status, scientific and technological advancement, besides the human capacity building - which is alleged to be the backbone of any advanced society- is considered a huge challenge that puts more question marks on many other deep distresses such as (1) how to establish sustainable cutting-edge research infrastructures and institutions?, (2) how to reverse the brain-drain dramatic concern?, (3) how to efficaciously address the local and regional alarms related to health, environment, and human heritage?, (4) how to use science as a vehicle for industrial development and growing economy?, and (5) how to minimize the gender gap in science?.

Well-established large infrastructures as light sources can give answers to the above. They have a global role and sustainable impact by serving a wide range of applications of basic and applied science giving answers to agricultural domains, diseases and public health, environment, air and water pollution, food security, new materials science, industrial applications, as well as energy and climate change. Light sources are the best example of an open and multidisciplinary research infrastructure. Being beyond the financial and operational capacity of individual countries, they provide strong opportunities for networking, cost-sharing, and promote multi-disciplinary collaboration with wider global community, while promoting science diplomacy and peace at large in particular cases.

Back again to Africa, this presentation will travel around the history and the milestones of the African Light Source (AfLS). The AfLS Foundation - together with its community- is extensively and expansively working towards founding the first synchrotron facility in Africa being the only continent that is left behind without such technology. It pursues to answer the above mentioned questions in Africa through collective brainpower, networking, community engagement, and constructive agreements and partnerships. Many doors are opened, and the best is yet to come.

A special light will be also shed on the African Strategy for Fundamental and Applied Physics (ASFAP) Light Sources Working Group goals and outcomes.

Reference:

“ASFAP impact towards the 1st African Light Source”, Gihan Kamel, https://doi.org/10.48550/arXiv.2207.08127