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The X-TechLab platform in Benin: a regional feeder facility for the future African Light Sourcee Facility

X-TechLab is a regional training platform that aims to provide the region with skills and tools to use X-ray techniques for developing innovative solutions to critical issues in Africa. The initiative is the result of an interaction between the Lightsources for Africa, the Americas, Asia, Middle East, and the Pacific (LAAAMP) and the Sèmè City hub, one of Benin Government's flagship projects, which aims to create a world-class knowledge and innovation centre in Africa. The goals are to: 1) provide hands-on experience with the use of cutting-edge X-ray equipment, 2) develop X-ray-based problem-solving skills targeting specific socioeconomic issues, 3) meet the requirement for Feeder Facilities that allow the preparation of samples to be studied at world advanced light sources and 4) contribute to the emergence of a community of experts who will be active users of the future African Synchrotron.
The X-TechLab platform was established in 2019 within Sèmè City, one of Benin government's flagship project which aims to create a world class knowledge and innovation hub, focused on the challenges facing the African continent. The overall mission of X-TechLab is to provide the region with the skills and tools that are needed to use the potential of X-ray techniques in order to design innovative solutions to critical issues in various fields such as health, agriculture, energy, and the environment.
The initiative is the result of an interaction between the Lightsources for Africa, the Americas, Asia, Middle East, and the Pacific (LAAAMP) project and the Sèmè City hub. The specific goals are to: 1) provide hands-on experience with the use of cutting-edge X-ray equipment, 2) develop X-ray-based problem-solving skills targeting specific socioeconomic issues, 3) meet the requirement for Feeder Facilities that allow the preparation of samples to be studied at world advanced light sources and 4) contribute to the emergence of a community of experts who will be active users of the future African Synchrotron.
Learners participating in the X-TechLab are trained around 2 parallel, interrelated yet distinct, tracks: Crystallography and X-ray diffraction techniques, including both single and powder diffraction applied to structural studies; and Absorption and phase contrast X-ray imaging (Microtomography) using mathematical tools for research on sustainable and ecological materials. Started in 2019, X-TechLab training sessions gathered many scientists from several countries and scientific disciplines. About 20 Experts from several academic institutions worldwide (Africa, Europe, USA) are involved in the training sessions. This talk will emphasize the unique potential of X-ray techniques as a multidisciplinary tool for development in Africa. We will present the facility, the achievements so far and future prospects.

Summary

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