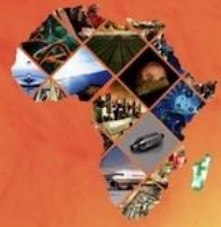





# The Africa Light Source Foundation

Towards a Lightsource for the African Continent



AfLS Website <https://www.africanlightsource.org>

Institute of Physics  Institute of Physics  
Learned society

*Debating the Societal Impact of Big Science in the 21st Century*

**Recent Progress Towards an African Light Source**

Simon Connell<sup>1,\*</sup>, Katharina C. Cramer<sup>2</sup>, Ed Mitchell<sup>3,†</sup>, Sekazi K. Mtingwa<sup>4</sup>, Prosper Ngabonziza<sup>5,6,#</sup>

To appear soon .....

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DOI: [10.1142/S0217732318300033](https://doi.org/10.1142/S0217732318300033)

**Synchrotron light sources in developing countries**





Sekazi K. Mtingwa  
Herman Winick\*

 World Scientific  
www.worldscientific.com


<https://www.worldscientific.com/doi/abs/10.1142/S0217732318300033>

**\*Research** Professional News

**African Light Source aims for science with ubuntu**

By Katharina Cramer et al Share    



 The African Review of Physics  
formerly published as The African Physical Review

The African Review of Physics (2018) 13: 0019

**Proceedings of the first African Conference on Fundamental Physics and Applications 2018, Namibia.**  
Guest Editors: K. A. Assamagan, M. Backes, D. Charlton, S. Muanza, D. Sahu, and D. Singh

The African Light Source Project

<http://lamp.ictp.it/index.php/aphysrev/article/view/1610/586>

 **Biophysical Reviews**  
pp 1-9 | [Cite as](#)

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Modern Physics Letters A | Vol. 33, No. 09, 1830003 (2018)  
| Brief Review  No Access

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## Roadmap : AfLS Conference 2015

<http://events.saip.org.za/conferenceDisplay.py/getPic?picId=66&confId=61>

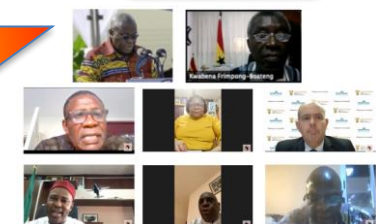
### Bottom Up

1. Human Capacity: scientists, engineers, technicians
2. African scientists access existing LSs
3. African relationships with existing LSs.
4. Involvement of industry
5. Community for the African light source Users
6. Conferences, Workshops, Outreach, Media



### Top Down

1. Strategic approach to African Governments and (Pan) African orgs.
2. Conceptual Design Report (CDR)  ← Ready soon !!!!
3. Inter-African co-operation on Regional feeder infrastructure
4. African multinational beamlines at existing LSs
5. Regional / Pan African membership of existing LSs
6. Technical Design Report (TDR)

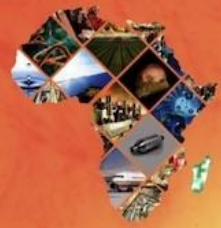


LoS



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Towards a Lightsource for the African Continent



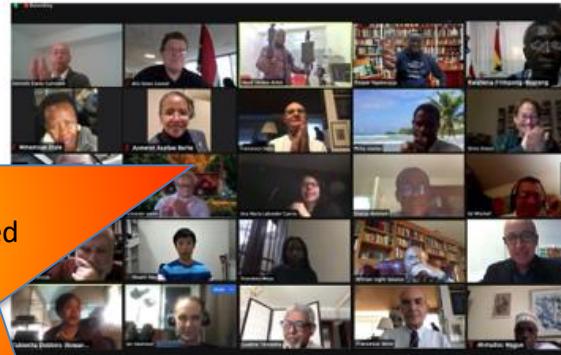
## Conferences

2015, 2019, 2020,

2021, 2022,

2023

2021  
Now 5 African  
Governments involved  
Many co-conveners  
Prof bodies  
Academies



2021  
>500 registrations

2022  
~1000 registrations



- AfLS1 2015  
<https://events.saip.org.za/event/61/>
- AfLS 2019  
<https://events.saip.org.za/event/145/>
- AfLS 2020  
<https://events.saip.org.za/event/211/>
- AfLS3 2021  
<https://events.saip.org.za/e/AFLS3>
- AfLS4 2022  
<https://events.saip.org.za/e/AfLS2022>



# The Africa Light Source Foundation

## Towards a Lightsource for the African Continent



## Feeder Facilities

### 1. South Africa

- Aaron Klug Centre, UCT, [link](#),  
U Witwatersrand, U Free State,  
U Stellenbosch, iThemba

### 2. Benin, X-TechLab, Benin, [link](#)

### 3. Ghana, U Ghana, [link](#)

### 4. Côte d'Ivoire, LaCPM, Universite Felix Houphouet Boigny, [Abidjan](#), [link](#)

### 5. Senegal, Ziguinchor, [link](#)

### 6. Cameroon, Dschang, [link](#)

### 7. Kenya, Kenyatta University, [link](#)

### 8. Tunisia

- Monastir, [link](#), Nabuel, Tunisia, [link](#)

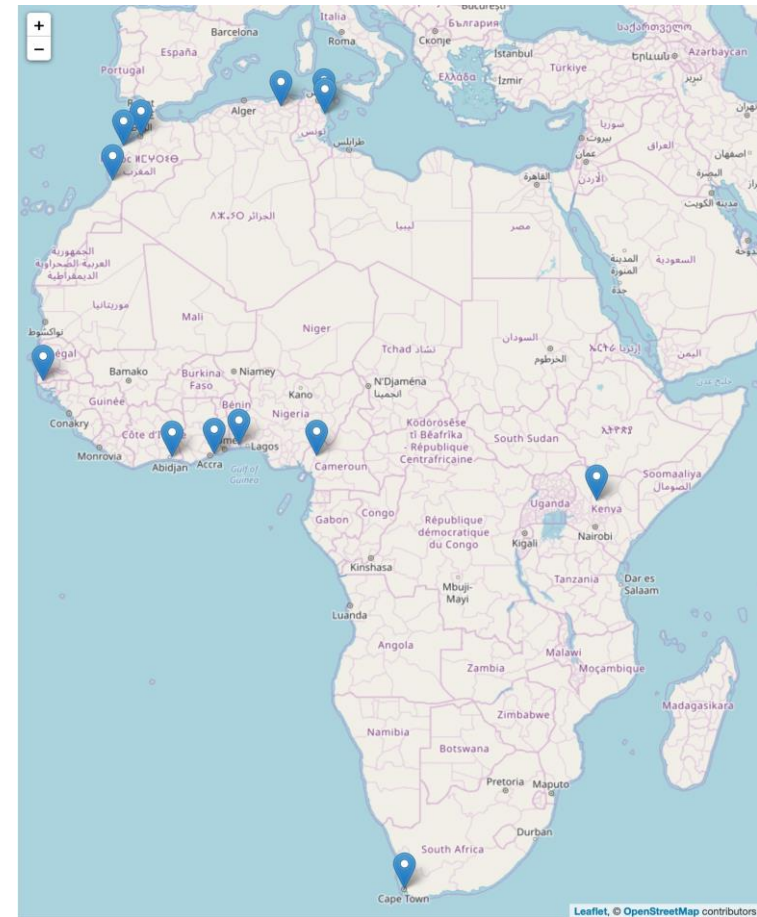
### 9. Algeria, Constantine 1, [link](#)

### 10. Morocco

- U Rabat,, [link](#), El Jadida, Morocco, [link](#) ,  
Agidir, Morocco, [link](#)

Significant  
facilities

IUCr  
OpenLab  
venues  
with  
facilities





# The Africa Light Source Foundation

Towards a Lightsource for the African Continent



## Bottom Up

### Bio-Science Capacity in Africa

- Ghana**  
University of Ghana
- Zambia**  
The University of Zambia
- Algeria**  
Ecole Nationale Polytechnique de Constantine
- Nigeria**  
Federal University of Technology, Akure  
University Ile-Ife
- Burkina Faso**  
Institute of Research in Health Sciences, Burkina Faso
- Morocco**  
University Sidi Mohamed Ben Abdellah
- Ivory Coast**  
Universite Felix Houphouet Boigny
- Egypt**  
Helwan University, Ain Shams University
- Lesotho**  
National University of Lesotho
- Ethiopia**  
Addis Ababa University



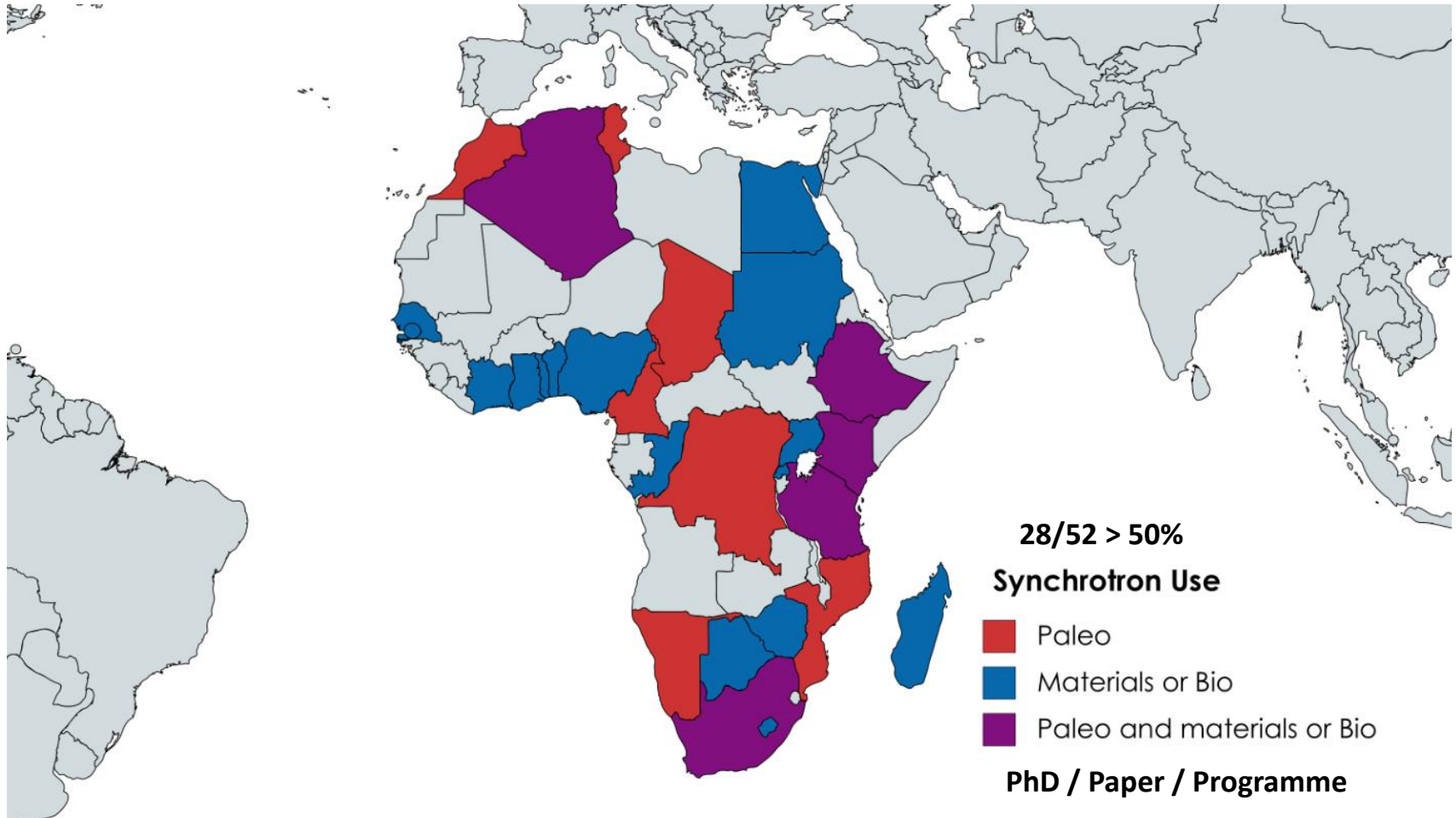


# The Africa Light Source Foundation

Towards a Lightsource for the African Continent



## Bottom Up





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Towards a Lightsource for the African Continent



## Some Existing Regional Facilities

### X-TechLab - Benin

Materials analysis, spectroscopy for many disciplines.  
Energy, health, environment, agriculture, materials



### Microscopy Centre - SA

Structural biology resource widely used in SADEC region

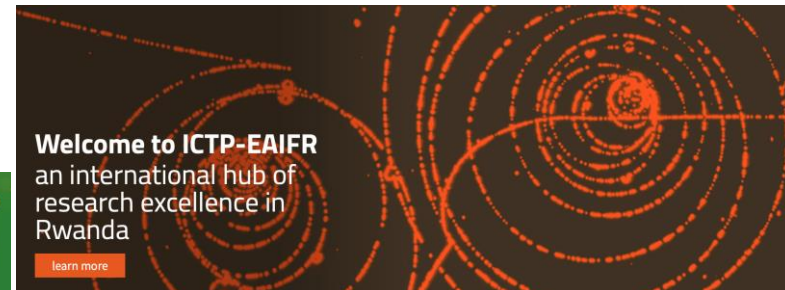
### African Laser Centre

Pan-African NEPAD flagship initiative

### ICTP-EAIFR - Rwanda

Condensed matter, Geology, Particle Physics,  
Cosmology, Astroparticle physics

Partner with LAAAMP, IUCr – OpenLABS, START, Others ....





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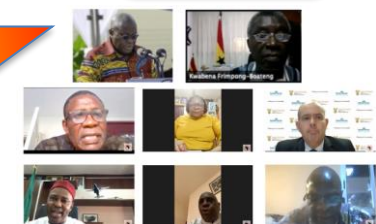
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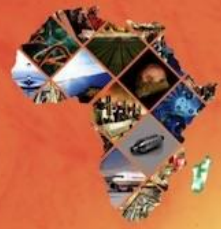


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## **African Light Source Strategic Task Force - African regional infrastructures**

- Diouma Kobor (Chair)
- Gihan Kamel
- Simon Connell
- Phillip Kurian
- Olufunso O. Abosedede
- Emmanuel Nji
- Sourou A. Sidoine Bonou
- Lawrence Norris
- Tshepo Ntsoane