

PHYSICS WITHOUT FRONTIERS: ZIMBABWE

Synchrotron Physics and X-ray Imaging Techniques Roadshow

18 – 27 October 2023

<https://indico.ictp.it/event/10442/overview>



The Abdus Salam
International Centre
for Theoretical Physics
Physics Without Frontiers



The roadshow will bring experts in the field of Synchrotron Physics and X-ray Imaging Techniques to five universities across Zimbabwe.

Lectures and discussions will be held on topics including synchrotron physics, materials science with radioactive isotopes at ISOLDE – CERN, computed tomography, diffraction contrast tomography, ptychography and the applications of x-ray imaging techniques in materials science, geosciences, anatomical sciences, and palaeontology.

Wednesday 18 October 2023: Harare Institute of Technology

Friday 20 October 2023: University of Zimbabwe

Monday 23 October 2023: Chinhoyi University of Technology

Wednesday 25 October 2023: Midlands State University

Friday 27 October 2023: National University of Science and Technology

SPEAKERS:

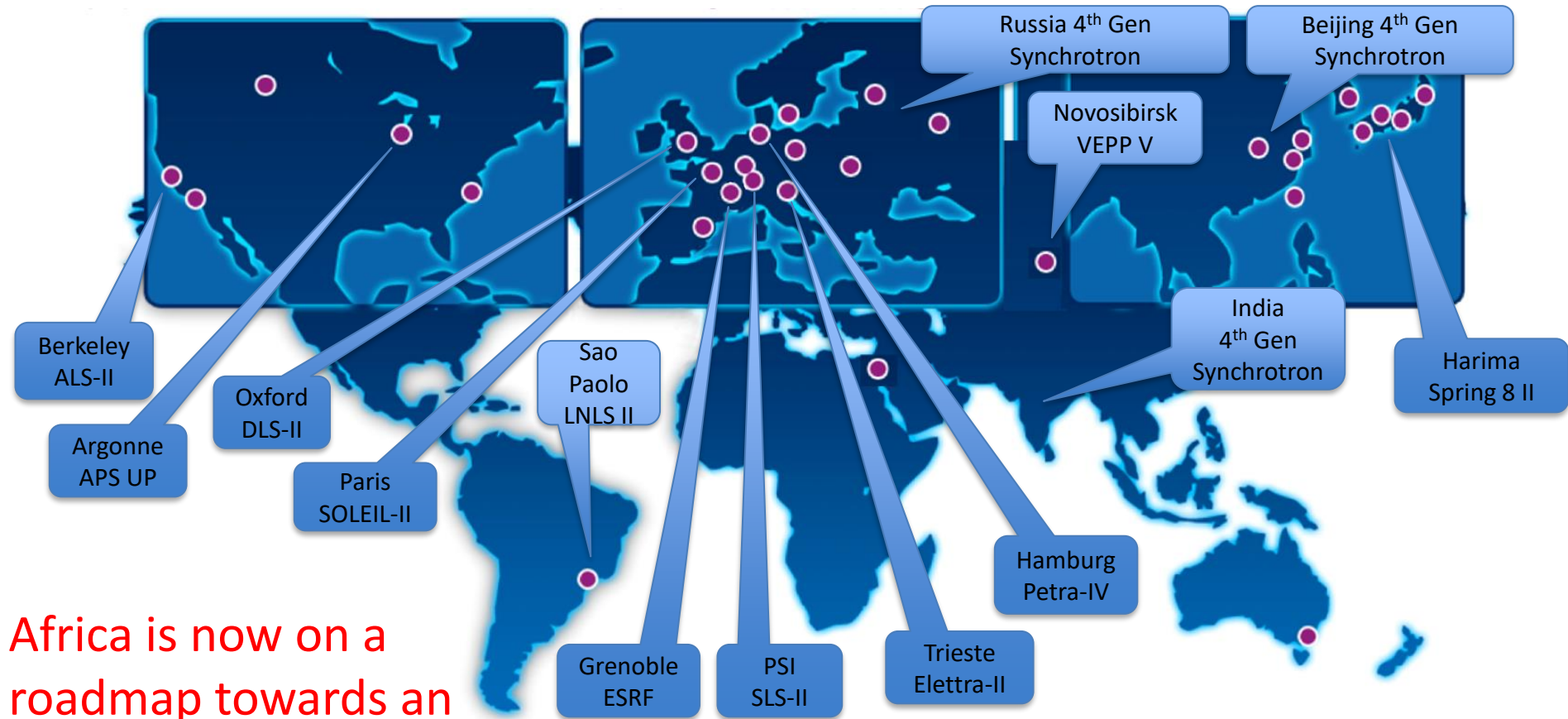
Kudakwashe Jakata, The Diamond Light Source, UK

Hilary Masenda, School of Physics, University of the Witwatersrand

Gideon Chinamatira, Evolutionary Studies Institute and School of Physics, University of the Witwatersrand



- Inform undergraduate and postgraduate students in Zimbabwe on x-ray synchrotrons and their science applications.
- AfLS 2024 Conference.
- Discuss the AfLS with heads of departments, or vice chancellors of each university and gain support and hopefully get the message across to the government.



Africa is now on a
roadmap towards an
African Light Source

Graphic adapted from ESRF source

Natasa Stojic (ICTP-PWF Coordinator)

Kate Shaw (ICTP-PWF Coordinator)

Margherita Di Giovannantonio (ICTP-PWF – Secretariat)

Ragnie Leahy (Senior Finance Administrative Officer - WITS)

Chido Manjokota (CEO of Netrolab Tech -Local Support in Zimbabwe)

Silvana Westbury (Project Manager - Lightsources.org)

- C. Zizhou (HIT)
- E. Matandirotya and E. Mashonjowa (UZ)
- C. Sumanya (CUT)
- H. Mafukidze (MSU)
- R. Mashingaidze and G. Nyambuya (NUST)



(Isotope Separator On-Line DEvice)

- Wed 18 Oct: Frank Browne
- Fri 20 Oct: Michael Pesek
- Mon 23 Oct: Patrick MacGregor (Pre-recorded talk)
- Wed 25 Oct: Michael Pesek
- Fri 27 Oct: Mark Bissell



Johannesburg to Harare

Harare to Chinhoyi

Chinhoyi to Gweru

Gweru to Bulawayo

Bulawayo to Johannesburg

**Total driving distance – about
3 200 km**

- 09:00 **Welcome and opening 15'**
- 09:15 **Introduction to Synchrotrons 30'**
Speaker: K. Jakata (Diamond Light Source)
- 09:45 **Beamline Instruments 30'**
Speaker: K. Jakata (Diamond Light Source)
- 10:15 **Tea Break 45'**
- 11:00 **Introduction to ISOLDE/CERN (remote lecture) 30'**
Speaker: ISOLDE Team
- 11:30 **Materials Science with Radioactive Isotopes 45'**
Speaker: H. Masenda (University of the Witwatersrand)
- 12:15 **Lunch break 1h45'**
- 14:00 **Computed Tomography Basics 20'**
Speaker: G. Chinamitra (University of the Witwatersrand)
- 14:20 **DCT, 3D-XRD, Ptychography and CDI 20'**
Speaker: K. Jakata
- 14:40 **Applications of X-Ray CT 30'**
Speaker: G. Chinamitra and K. Jakata (University of the Witwatersrand and Diamond Light Source)
- 15:10 **Tea break 30'**
- 15:40 **LAAAMP Visit to the ESRF 20'**
Speaker: G. Chinamitra
- 16:00 **Discussions and Synchrotron Careers 15'**
Speaker: H. Masenda, G. Chinamitra and K. Jakata (University of the Witwatersrand, University of the Witwatersrand and Diamond Light Source)



THE AFRICAN LIGHTSOURCE

Towards a Lightsource for the African Continent



Visit us at : <http://www.africanlightsource.org>

Home

AFLS ROADMAP: CONFERENCES, SCHOOLS



Conferences and Schools that focus on building awareness of the benefits of light source based research; enhancing education; developing human capacity; developing international collaborations, linkages and partnerships related to light sources. See Projects [here](#).

AFLS ROADMAP: POLITICAL SUPPORT



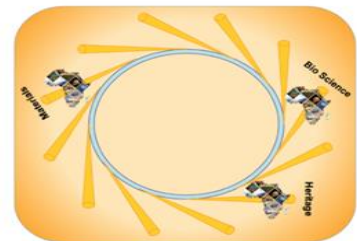
The AfLS Steering Committee is working to make the AfLS a priority for

AFLS ROADMAP: TRAINING AND MOBILITY



Promoting mobility and access to current light sources to develop deep training. Visits can be from weeks to years. Develop human capacity and establish longer term international collaborations, linkages and partnerships related to light sources. See projects [here](#).

AFLS ROADMAP: AFRICAN CONSORTIA



AFLS ROADMAP: LOCAL AND REGIONAL RESOURCES



Promote the development of local and regional facilities that act as research facilities in their own right, as well as training, support and feeder infrastructure enabling successful programs at light sources. but also as training. See projects [here](#).

AFLS ROADMAP : CDR



AfLS team is working on the



AFLS IN THE NEWS



1. **Ghana will champion the African Light Source** (AfLS) Ghana Business News Jan 30 (2019).
2. The University of Ghana has hosted the Joint 2nd African light source (AfLS2) and Pan African Conference on Crystallography (Pccr2) - [News section of the website of the University of Ghana](#)
3. **African Light Source Garner Critical Political Backing** APS News 28/3 March 2019 : International News
4. Via PhysicsWorld **Physicists urged to back plans for Africa's first synchrotron**
5. Via BBC Science & Technology **African**

Search ...

FUNDING FLASH

1 year training + MSc for SA Engineering students at ESRF

UPCOMING EVENTS

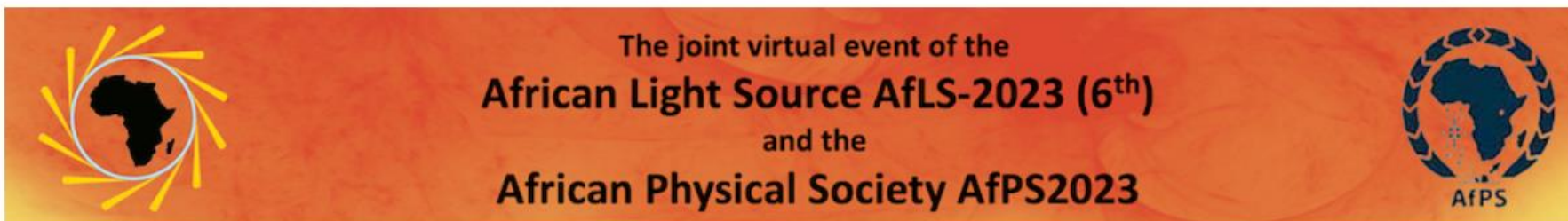


1. The African Calling Stick is Calling all stakeholders to **AfLS 3 in Kigali, Rwanda** from 16-20 November 2020 in Africa
2. **School on Biophysical Approaches to Macromolecules and Cells:** Integrated Tools for Life Sciences and Medicine, 9 - 20 September 2019 NM-AIST, Arusha, Tanzania.

PREVIOUS EVENTS

1. **START Launch Event** 27-28 Mar 2019
2. **AfLS 2 Accra, Ghana** 28 Jan - 2 Feb 2019
3. **Biophysics & Structural Biology at Synchrotrons** 17-24 Jan 2019

<https://events.saip.org.za/event/243/page/556-conference-topics>



13-17 November 2023

Africa/Johannesburg timezone

Big Science and Big Goals for Africa

Overview

Conference Topics

Registration

Call for Abstracts

Author Instructions

Connection Details

Important Dates

Organising Committees

Programme : Conference
and Workshop

The time zone is controlled by you as an Indico Setting (top right). The session times will therefore be shifted if you are not set to Central Africa Time (CAT) = GMT+2.

Welcome to the 2023 joint virtual meeting of the African Light Source (AfLS), the African Physical Society (AfPS), and co-convened with several other Pan African professional science societies, all hosted by . We hope that you will join us as we communicate and celebrate **Big Science and Big Goals for Africa!**

Participating Organisations

As advanced light sources support multiple disciplines, the AfLS conference formally includes participation by the following Pan African scientific societies, which we are proud to count as supporters and partners in [our vision to establish an advanced light source on the African continent](#).



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SESAME

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EXPERIMENTAL SCIENCE
AND APPLICATIONS IN
THE MIDDLE EAST

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Overview

Programme

Speakers

Apply here

Secretariat:

✉ smr3917@ictp.it

School on Synchrotron Light Sources and Their Applications | (smr 3917)

🕒 Starts 15 Jan 2024
Ends 26 Jan 2024
Central European Time



Online -
Online

Strada Costiera, 11
I - 34151 Trieste (Italy)

An ICTP Online Meeting

The School will introduce young scientists to the design, operation, and research opportunities offered at a modern synchrotron light source and how such sources are realized.

The school will be held over two weeks and will consist of three modules: (1) Physical aspects concerning the design and function of the main components: accelerators, insertion devices and beamline optics; (2) Overview of the arguments that can be made in order to fund and build a synchrotron light source, including socioeconomic benefits, stakeholder engagement, communication; and (3) Overview of common beamline techniques, including those utilizing X-rays and infrared radiation.

Topics:

Organizers

Marielle AGBAHOUNGBATA (X-TechLab, Benin), Ozgul OZTURK (University of Siegen, Germany), Simon CONNELL (University of Johannesburg, AFLS, South Africa), Messaoud HARFOUCHE (SESAME, Jordan), Gihan KAMEL (SESAME, Jordan), Andrea LAUSI (SESAME, Jordan), Kirsí O. LORENTZ (Cyprus Institute, Cyprus), Alessandro MIGLIORI (IAEA, Austria), Edward MITCHELL (ESRF, France), Sekazi MTINGWA (TriSEED Consultants LLC, USA), Prosper NGABONZIZA (Louisiana State University, USA), Sandro SCANDOLO (ICTP, Italy), Michele ZEMA (University of Bari, Italy),
Local Organiser: Nadia Binggeli (ICTP)

Co-sponsors



- Well attended seminars with about 350 participants registered.
- Had meetings with senior institution personnel and discussed the AfLS and the message will be transmitted to government.
- Institutions suggested MSc programs on synchrotron science.
- Request from Botswana for a similar roadshow.



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The Abdus Salam International Centre for Theoretical Physics
Physics Without Frontiers



SCIENCE CENTRE



“We want to host the African light Source Conference at the University of Zimbabwe and we hope that next time, the speakers will include women”.

Dr E. Matandirotya (UZ)

“This is a wonderful initiative. It should not end here, but maybe we should organise a school on synchrotron techniques or something similar”.

Dr C. Sumanya (CUT)

“How do we get jobs at such facilities and how do we get funding/scholarships to study at these institutions”.

Student

“The workshop should have been run over a long period”.

Student

“Looking forward to more such seminars”.

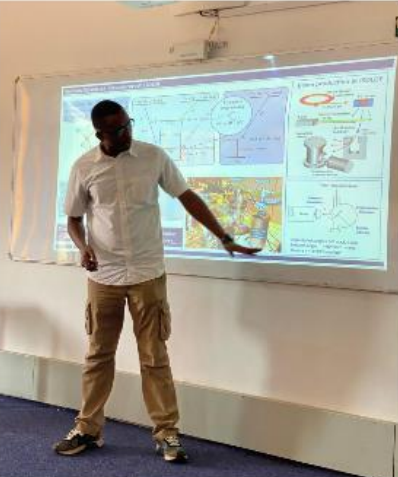
Student

- Electricity cut-off at some venues.
- Program cut short at two institutions.
- Equipment to do science leading up to the use of advanced light sources.
 - ☐ *NUST have x-ray equipment but no detector*
- Funding for MSc



Gideon Chinamatira (CPhys) · 1st
 PhD Candidate in X-ray CT | MSc Applied Physics (Medical Physics) | Phase c...
 1mo · Edited

Day 1 - ICTP-Physics Without Frontiers-Zimbabwe at [Harare Institute of Technology](#) with [Kudakwashe Jakata](#) and [Hilary Masenda](#), [Abdus Salam International Centre for Theoretical Physics \(ICTP\)](#), [Diamond Light Source](#), [Lightsources.org](#), [IsoldaCERN](#).







Reactions




11:29



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ICTP PWF
 @ictpPWF

You reposted

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Day 3 of the [@ictpPWF](#) Zimbabwe Roadshow at Chinhoyi University of Technology!
 PWF volunteers Kudakwashe Jakata, Hilary Masenda, and Gideon Chinamatira are travelling around Zimbabwe providing training to physics students in Synchrotron Physics and X-ray Imaging Techniques!



You and 8 others

11:55 · 27 Oct 23 · 340 Views

2 Reposts 5 Likes

Post your reply

11:30



←
Liked
 by Kate Shaw


Diamond Light Source @Dia... · 11 Oct

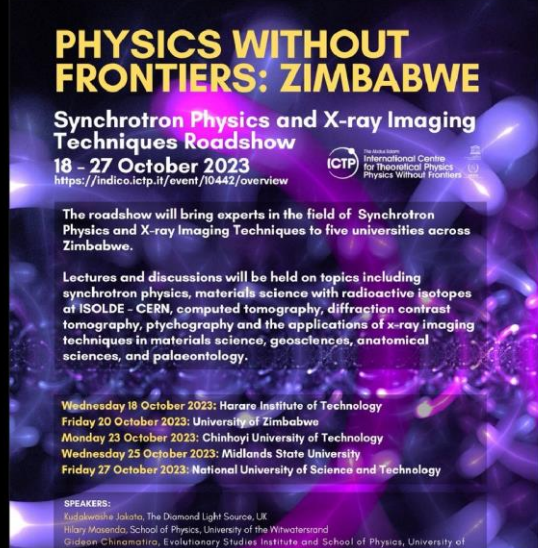
You reposted

We are proud to highlight this fantastic technical roadshow, featuring [#SynchrotronScience](#) on Tour! Diamond scientist [@kuda05](#) (alongside colleagues [@HilaryMasenda](#) [@Numero_Uno01](#)) will be visiting 5 institutions in 4 cities across [#Zimbabwe](#), showcasing opportunities in [#XrayImaging](#)


lightsources.org @lightso... · 11 Oct

Hugely excited and delighted to be supporting @kuda05 and colleagues with their upcoming Physics Without Frontiers tour of universities across #Zimbabwe. Teaching students abou...

Show this thread



X-ray Visions: Experts Gather at MSU for Discussion on Cutting-Edge Imaging Techniques

Home / News, Research News / X-ray Visions: Experts Gather at MSU for Discussion on Cutting-Edge Imaging Techniques



Notices

VIVA NOTICE: DISSERTATION
ORAL PRESENTATIONS FOR
MANAGEMENT SCIENCES
DEPARTMENT FOR SEPT-DEC
2023 SEMESTER

HARARE WEEKEND LECTURES 17
TO 19 NOVEMBER 2023

WEEKEND LECTURES 10 TO 12
NOVEMBER 2023

Notice for practical exams for
monitoring and evaluation

Graduate School of Business
Leadership Block Dates



Gideon Chinamatira (CPhys). • 1st

PhD Candidate in X-ray CT | MSc Applied Physics (Medical Physics) | Phas...
1mo •

Day 4 of the ICTP-Physics Without Frontiers- Zimbabwe Roadshow was held at [Midlands State University](#) on Wednesday 25 October 2023 with [Kudakwashe Jakata](#) and [Hilary Masenda](#), supported by [Abdus Salam International Centre for Theoretical Physics \(ICTP\)](#), [Diamond Light Source](#), [Lightsources.org](#) [ISOLEatCERN](#).



 Hilary Masenda and 31 others

1 comment



Like



Comment



Repost



Send



Add a comment...



- Two samples for a research project using synchrotron imaging.
- Students interested in MSc related to advanced light sources.
- Collaborative projects to be undertaken.
- Managed to obtain funding for one PhD student via the NRF-MINDS scholarships.



PHYSICS WITHOUT FRONTIERS CALL FOR PROPOSALS

**Train and inspire physics and mathematics
students in the Global South**

ICTP's Physics Without Frontiers works to teach, train, and inspire physics and mathematics university students worldwide, with focus on countries in the Global South, to help build the next generation of scientists.

PWF organises projects working with volunteer scientists who are PhD students, postdoctoral researchers, or lecturers from all over the world, who are passionate about promoting and supporting physics and mathematics. Each project is unique, and is developed with the country's specific needs in mind.

Deadline: 29 February 2024

Contact: pwf@ictp.it

Learn more & Apply: ictp.it/physics-without-frontiers

Call for ICTP-PWF proposals 2024

THANK YOU



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Physics Without Frontiers

