



The Abdus Salam
International Centre
for Theoretical Physics



School on Synchrotron Light Sources and their Applications

Description:

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.

MORE DETAILS:

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:

- Fundamentals of synchrotron radiation from storage rings
- Fundamentals of X-ray interactions with matter
- Design and operation of storage rings
- Beamline design: Photon transport and optics
- Bending magnets and insertion devices
- Project management at a large facility
- Ancillary devices for light sources
- Socioeconomic justification
- Cultural heritage
- Stakeholder engagement/communications
- Starting up user operations at a new facility
- Industrial Applications
- IR microscopy
- Basics of X-ray crystallography and powder diffraction
- Basics of structural biology
- Fundamentals of X-ray absorption: EXAFS and XANES
- XRF, TXRF, GXRF and their applications in materials and life sciences
- Tomography



15 - 26 January 2024



Online



**Deadline:
10 December 2023**

DIRECTORS:

M. AGBAHOUNGBATA, X-TechLab, Benin
S. CONNELL, University of Johannesburg, AFLS, South Africa
M. HARFOUCHE, SESAME, Jordan
G. KAMEL, SESAME, Jordan
A. LAUSI, SESAME, Jordan
K. LORENTZ, Cyprus Institute, Cyprus
A. MIGLIORI, IAEA, Austria
E. MITCHELL, ESRF, France
S. MTINGWA, TriSEED Consultants LLC, USA
P. NGABONZIZA, Louisiana State University, USA
Ö. ÖZTÜRK, University of Siegen, Germany
S. SCANDOLO, ICTP, Italy
M. ZEMA, University of Bari, Italy

LOCAL ORGANISER:

N. BINGGELI, ICTP, Italy

FURTHER INFORMATION:

E-mail: smr3917@ictp.it

Web: <http://indico.ictp.it/event/10455/>

Female scientists are encouraged to apply.



REGISTRATION:

There is no registration fee.

