

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.

It 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;
- (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, GIXRF and their applications in materials and life sciences
- Tomography



13 - 24 January 2025



An ICTP Online Meeting



**Deadline:
10 December 2024**

DIRECTORS:

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FURTHER INFORMATION:



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Female scientists are encouraged to apply.

REGISTRATION:

There is no registration fee.

