
School on Synchrotron Light Sources and their Applications

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An ICTP online meeting

Starts 23 Jan 2023

Ends 3 Feb 2023

Central European Time

Registration: <https://indico.ictp.it/event/10057/>

Deadline: Monday, 5 January 2023

There is no registration fee.

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) the physical aspects concerning the design and function of the main components: accelerators, insertion devices and beamline optics (2) an overview of the arguments that can be made in order to fund and build a synchrotron light source, including socioeconomic benefit, stakeholder engagement, communication (3) Overview of common synchrotron light techniques including synchrotron infrared techniques and XANES/EXAFS.

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

Organizer(s)

Andrea LAUSI (SESAME, Jordan), Edward MITCHELL (ESRF, France), Gihan KAMEL (SESAME, Jordan), Ian Peter SWAINSON (IAEA, Austria), Kirsi O.LORENTZ (Cyprus Institute, Cyprus), Michele ZEMA (University of Bari, Italy), Ozgul OZTURK (University of Siegen, Germany), Sekazi MTINGWA (TriSEED Consultants LLC, USA), Simon H.CONNEL (University of Johannesburg, AFLS, South Africa),
Local Organiser: Nadia Binggeli (ICTP)

Secretary

Monica Petronela Ancuta, Viktoriya Lvova, Adriana Pinto

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