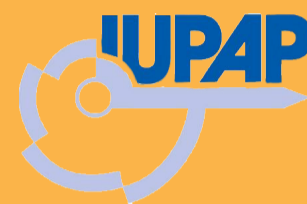


# Laboratory and Synchrotron X-ray Crystallography: Applications to Emerging Countries

**20 November – 2 December 2017**  
**Université Assane Seck de Ziguinchor, Sénégal**



Further information:

Activity URL: <http://indico.ictp.it/event/8243/>

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Crystallography is an interdisciplinary science that finds application in technological areas of strategic importance for emerging countries, such as cement, mining, electronic and pharmaceutical research. Special emphasis will be placed on the role of advanced synchrotron light sources.

## Description:

Crystallography enables to access the inner properties of matter and accurate atomic structures of molecules, materials, proteins and any kind of compound; without the knowledge of the structure, the functionality of a given material cannot be understood and therefore improved. Mining and cement companies use crystallography for quality and purity control and for research aimed at developing novel materials; the pharmaceutical industry uses crystallography to identify the correct polymorph and understanding the functionality of new medicines. Today synchrotron light sources complement laboratory X-ray equipment and allow access to unprecedented capabilities. Students will be encouraged to test their understanding on crystallography using single crystal and powder portable diffractometers, which will be installed on site for at least the duration of the school.

## Topics:

- X-ray and neutron diffraction physics;
- powder and single-crystal methods;
- physical properties of crystals;
- symmetry and space groups;
- structural refinement;
- crystallographic databases;
- applications to cement, mining, electronic and pharmaceutical industries;
- nano-crystallography;
- bio-crystallography;
- quasicrystals;
- synchrotron light sources.

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## How to apply:

Online application:  
<http://indico.ictp.it/event/8243/>

## Grants:

A limited number of grants are available to support the attendance of selected participants, with priority given to participants from the region. The participation fee is 100 Euro.

## Deadline:

**31 July 2017**



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