

SBS Seminar Announcement

Recent progress of robot based systems for crystallography on beamlines and in the laboratories

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Abstract

Development of 6-axis robotic arm based systems for protein crystallography on beamline FIPBM30A (ESRF) significantly changed the experiment strategy. These robotized systems play as fully integrated, multi-purpose diffractometers and can be used on beamlines as well as in the laboratories. They integrate the following functions: sample changer; goniometer for frozen samples, capillaries; crystallization trays handling for in situ screening and data collection; powder diffraction; beam monitoring; on line crystal fluorescence/absorption... Thanks to its tool changer, the robot arm can go automatically from one application to another. Several systems, both at synchrotrons (ESRF, LNLS, BNL) or as laboratories in-house systems (EPFL, CBS) are now available for the crystallography community.

New results obtained on FIP-BM30A will be presented, including

- High density in situ experiment: 1536-well batch crystallization plate was prepared at HWI Buffalo, shipped to ESRF and successfully screened for diffracting crystals.
- Experiments demonstrated the possibility of the automated structural screening for the fragment based drug design strategy.

New capabilities are also under development such as the remote controlled robotized crystal harvesting, based on a micro-gripper robot tool. Such manipulations of individual crystals with the robot makes possible fully remote operation.

Thursday, 21 Nov 2013 2.30pm to 3.30pm SBS Classroom 2 (SBS-01n-22)

Host: Assoc Prof Julien Lescar