

May 2011 Alba mini newsletter

Beamlines:

<http://www.cells.es/Beamlines>

* BL04-MSPD: Materials Science and Powder Diffraction.

- The first x-ray image was obtained at the experimental hutch during the installation of the CCD detector for the high-pressure station (Figure 1).
- All optical components inside the Optics Hutch (OH) have been installed.
- Cabling of the components inside the OH is completed.

* BL09-MISTRAL: X-Ray Microscopy.

- The x-ray beam has gone through the white beam diagnostics including the first vertical slits and through the Kirkpatrick Baez (KB) mirrors so that the beam has reached the entrance slits of the monochromator.
- The control hutch has been built and cabling is progressing.

* BL11-NCD: Non-Crystalline Diffraction.

- The last vacuum section of the beam line has been installed and houses the vacuum-to-air interface to be placed right upstream the sample in due course.
- A temporary support table for the small angle x-ray scattering, SAXS, detector has been ordered that provides movement of the detector in four degrees of freedom, that is vertical, transversal, pitch and yaw adjustments.
- A setup that will allow the characterization of the photon beam during commissioning with photon beam consisting of a YAG crystal, holder, and microscope objective lens has been designed and is currently being manufactured for use in autumn 2011.
- The linear floor rails for movement of the sample table, x-ray flight tube, the WAXS detector with its support and to lesser extent the SAXS detector support table are now installed in the experimental hutch.
- The support structure for the vertically pneumatically controlled position of the acoustic delay line has been received from the external workshop that has manufactured the support. It is due to be installed in the experimental hutch in the next five days.

* BL13-XALOC: Macromolecular Crystallography.

- The installation of the End Station's detector table is nearing completion.
- The delivery of the PILATUS 6M is expected for May 10-11th and site acceptance tests will follow.
- Design of the detector protection cover has been finalized.
- The alignment of the white beam attenuator has been carried out and its bakeout will start shortly.

* BL22-CLÆSS: Core Level Absorption & Emission Spectroscopies.

- The comprehensive tests of the beamline optics have been done with a laser beam. The tests have successfully tested all the motors, including pseudo-motors (collective motions of complex supports), overtravel safety systems, complex homing procedures, and the precise correspondence of the physical optical devices to the underlying optical model. These tests have also simultaneously commissioned the motion control systems (Icepaps and Pimac) and the control software.
- The mirrors have been finally assembled and sealed, including the liquid metal cooling system of the first mirror.
- The vacuum system of the optics is assembled and closed for pumping and baking out.
- The components of the experimental station are being assembled on the final supports.

* BL24-CIRCE: Photoemission Spectroscopy and Microscopy.

- The laser pre-alignment is finished.
- Attenuator has been installed.
- One I_0 diagnostics has been completed.
- The functional tests of the Equipment Protection System (EPS) have started.

* BL29-BOREAS: Resonant Absorption and Scattering.

- The functional tests of the EPS are in progress.
- The motion tests with the final cabling are finished.
- The chiller for the water cooling system of the beamline has been received and is being installed.
- The contract for the design and construction of the superconducting magnet for the RSXS end-station MARES has been definitively awarded to HTS-110 Ltd.
- The optical metrology of the MEG and HEG gratings is in progress.
- The mechanical metrology of the KB refocusing system is in progress.
- The mirrors for the KB system have been accepted and should be delivered to Alba in the next days.
- The mechanical elements for the common rotating platform of the end-stations and the support for the XMCD end-station have arrived and will be assembled and installed in the next weeks.

IDs:

http://www.cells.es/Divisions/Accelerators/Insertion_Devices/Ids/

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- The Storage Ring commissioning has continued during April with the aim to achieve a stable and reproducible machine. We have been working on establishing a nominal orbit in which the electrons go through the centre of the quadrupoles and also refining our model of the storage ring so that we have a good agreement with the measurements. To have a good machine model is extremely useful in order to have a good prediction of the effect of the insertion devices on the machine.

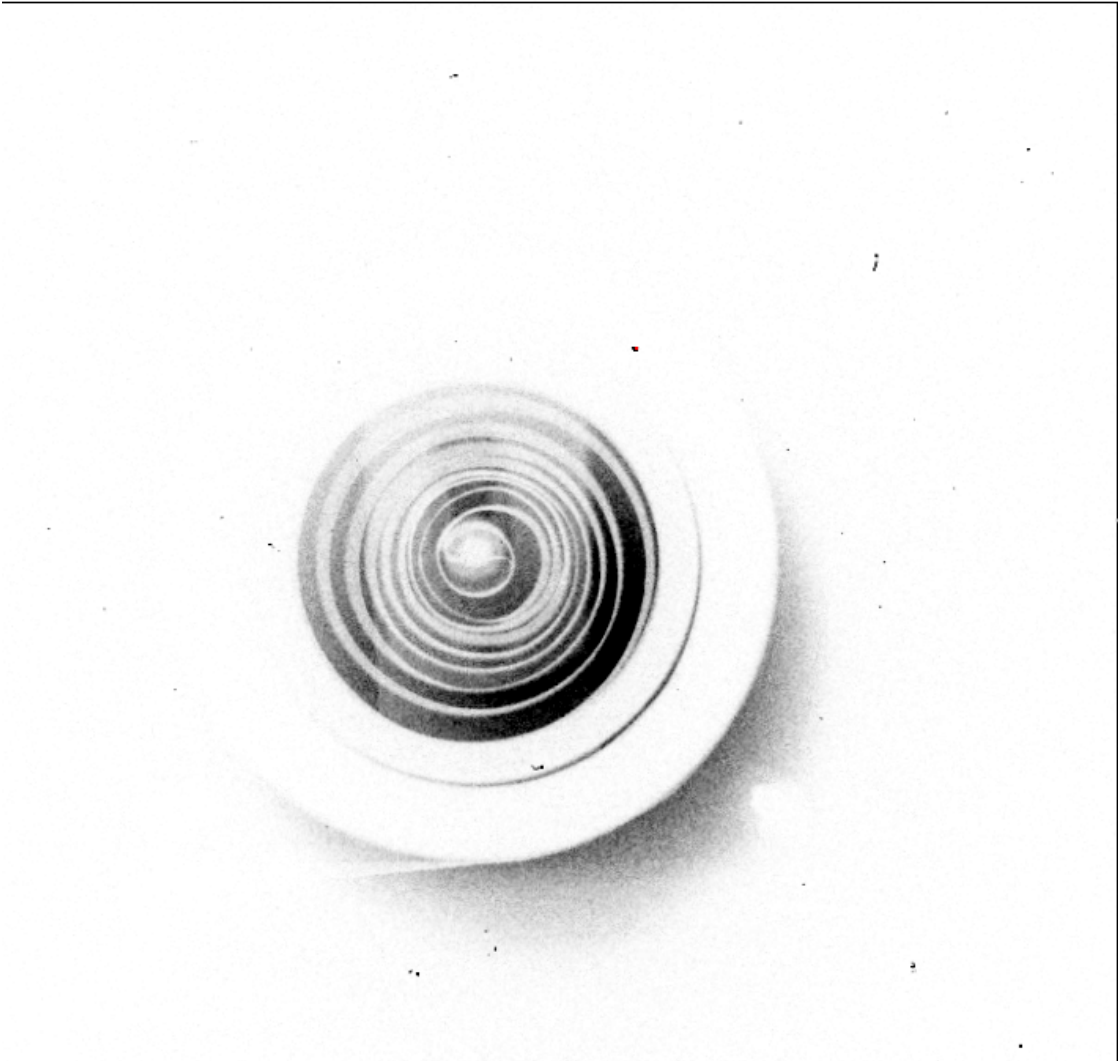


Figure 1. BL04-MSPD: An x-ray image of a measuring tape (in transmission mode) from the CCD detector for the high-pressure station during the site acceptance tests. The x-ray source was Am-241 source (59 KeV).