

July 2011 Alba mini newsletter

Accelerators

<http://www.cells.es/Divisions/Accelerators>

- The first In-vacuum undulator, providing light to the XALOC Beamline, has already been installed in the Storage Ring. The second in-vacuum undulator for NCD is currently being installed and before the end of July the superconducting wiggler will also be installed.
- In addition the shut down period has been used to do a few finishes on cabling, and other conventional infrastructures.

IDs

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

- On June 14th the installation of in-vacuum undulators in the Storage Ring was started (Figure 1). First in-vacuum was installed on June 28th and second in-vacuum was installed on July 5th. Both of them are currently being baked out and the completion of installation it is foreseen for the end of July.
- On July 18th the installation of superconducting wiggler in the Storage Ring is foreseen to be started. Completion of mechanical installation is foreseen for beginning of August.
- Tests with beam are foreseen on mid September for the in-vacuum undulators and on mid October for the superconducting wiggler. Once these tests are completed, the installation phase of the initial ALBA photon beam sources will be finished.

Beamlines

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

* BL04-MSPD: Materials Science and Powder Diffraction.

- The assembly and cabling of the Alba in-house mad26 detector is finished.
- The control and first acquisition tests of the Mythen (<http://www.dectris.com/sites/mythen1k.html>) are progressing well (Figure 2).
- The secondary table for powder diffraction has been assembled.

* BL09-MISTRAL: X-Ray Microscopy.

* BL11-NCD: Non-Crystalline Diffraction.

- We have re-installed the acoustic delay line after having modified its support, included a pneumatic height adjustment system, that will allow us to align the system with some efficiency without breaking the vacuum.
- We received a group of perhaps 25 future users that participated in a discussion looking towards starting as soon as possible to carry out experiments in solution and in particular the discussion

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focused on the possibility to carry out temperature jumps and more from an early stage after the beam line becomes available to the user community.

- One of the ultra-high-vacuum, UHV, slit units developed a minor fault whilst under vacuum and the supplier came to solve this minor problem at the end of the month. At the same time the beam defining slits, also UHV compatible, situated in the experimental hutch were re-fitted with scatterless knife-edges made out of single crystal silicon.

- The design of the control hutch and its services has been closed and the hutch is expected to be installed in the Experimental Hall area at the end of July and ready for use by the third week in August.

* BL13-XALOC: Macromolecular Crystallography.

- The bakeout of the Laue monochromator, fluorescence screen, and white beam attenuator has been completed successfully.

- The on-site installation and acceptance tests of the PILATUS 6M detector were successful (Figure 3).

- Final cabling campaigns are finalized.

- The design of the control room is about to be completed.

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

- A significant technological progress in making a ground-bent analyzer crystal has been achieved: a cylindrically polished crystal has been successfully diced into independent flexible columns. The dicing was done in collaboration with Hasylab (Hamburg, Germany). The diced parts will then be assembled as a two-dimensionally bent analyzer of fluorescence. This design will provide an exact point-to-point imaging for the complete surface of the crystal, simultaneously enabling high energy resolution and high collection efficiency.

- The design of the beamline control cabin has been determined. The manufacturing has started.

* BL24-CIRCE: Photoemission Spectroscopy and Microscopy.

- Around 20 prospective CIRCE users took part in the ALBA workshop celebrated last June 10th. After a visit to the beamline, research ideas and possible additions to the end stations were discussed.

- The CVD diamond filter has been installed in the White Beam Attenuator chamber. The DiagOn thermocouple, which was failing, was replaced and both chambers are currently being baked out.

* BL29-BOREAS: Resonant Absorption and Scattering.

- The MEG and HEG gratings have been installed inside the monochromator which is now undergoing its final bakeout.

- The PM/TM mechanics was upgraded and the UHV vessel is now undergoing its final bakeout.

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- The mechanical elements for the common rotating platform of the end-stations and the XMCD end-station support have been received and are being installed.
- The I_{zero} monitor and the Beam ReFeRence Monitor (BRFM) have been completed and are ready for final bakeout.
- The Factory Acceptance Tests of the XMCD cryomagnet are taking place at the Scientific Magnetics premises on 12th-14th of July.
- The Factory Acceptance Tests of the double rotary feedthrough of the MARES end-station have taken place at the Pink premises and the results have been approved.
- The contract for the construction of the conventional hutch has been awarded.



Figure 1. IDs: A snapshot taken during the installation of the in-vacuum undulator 1 (IVU-1).

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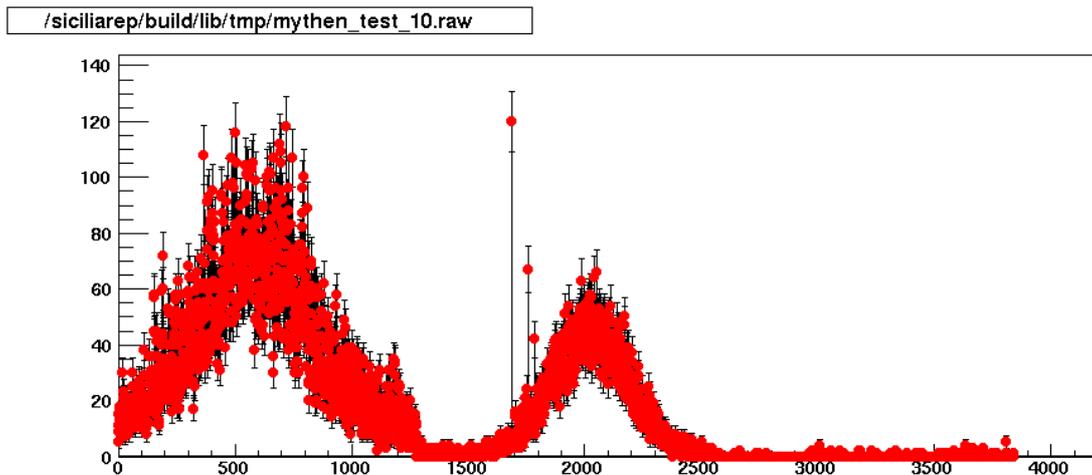


Figure 2. BL04-MSPD: Raw counts versus channel number (three Mythen detector modules). The peaks correspond to the counts produced by two radioactive sources (Fe55 and Cs137, each of them pointing to one of the three Mythen modules), fortunately they are not diffraction peaks.



Figure 3. BL13-XALOC: The PILATUS 6M detector installed at the beamline.