

## March 2011 Alba mini newsletter

### Beamlines:

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

- \* BL04-MSPD: Materials Science and Powder Diffraction.
  - Vacuum conditioning is in progress.
  - The cabling for the beam conditioning elements has started.
  - The acceptance and assembly of multi-crystal detector has started.
  
- \* BL09-MISTRAL: X-Ray Microscopy.
  - The commissioning of the beamline has been postponed until April.
  - Last scan tests with the final cables of the monochromator are ongoing.
  
- \* BL11-NCD: Non-Crystalline Diffraction.
  - We have ordered and received the lead for the two shadow shields to be installed in the optics hutch (OH), downstream the moveable masks and downstream the double crystal monochromator (DCM).
  - We have placed an order with an external workshop for the production of the supports for the shadow shields such that they can be installed in March 2011.
  - We have received the support structure for the last vacuum stage of the optical layout to be installed in the experimental hutch (EH) just upstream from the sample table.
  - We have modified the manipulation of the acoustic delay line so that its mean height above floor level can be varied using pneumatic activators. In addition, this height variation, two extremes, is expected to accurate enough such that the height can be varied reliably and routinely without having to survey it into position each time.
  - We have ordered and are expecting the baseplate for the linear floor rails to be installed in March inside the experimental hutch.
  
- \* BL13-XALOC: Macromolecular Crystallography.
  - Vibration studies of the Si crystal of the monochromator are being carried out in cryogenic conditions.
  - The granite of the detector table has been installed in the EH and aligned. Its mechanical installation is underway.
  - Vacuum tests on several beam-conditioning elements were successful.
  
- \* BL22-CLÆSS: Core Level Absorption & Emission Spectroscopies.
  - The cabling of the optics is ready.
  - The motion tests of the 5-meter-long experimental granite table have been performed.
  - A [Virtual CLÆSS beamline](#) has been created.
  
- \* BL24-CIRCE: Photoemission Spectroscopy and Microscopy (Figure 1).
  - The vacuum conditioning of the monochromator has been completed and the exit slits opening has been calibrated by diffraction of a laser beam.
  
- \* BL29-BOREAS: Resonant Absorption and Scattering.
  - The cable testing is progressing.

- The first bakeout of the  $I_0$  and beam reference monitor (BRFM) chambers is finished.

**IDs:**

[http://www.cells.es/Divisions/Accelerators/Insertion\\_Devices/Ids/](http://www.cells.es/Divisions/Accelerators/Insertion_Devices/Ids/)

- The installation of three out-vacuum insertion devices has been completed: EU71 feeding BOREAS beamline, EU62 feeding CIRCE beamline and MPW80 feeding CLAESS beamline are already in the tunnel.

- The commissioning of the Storage Ring will be done initially with the gaps of these three IDs opened to their maximum values. After the commissioning of the Storage Ring, they will enter progressively into service.

- Currently both In-vacuum undulators have been moved to the ID-lab in order to be commissioned, baked out and to complete the integration of the control system. Their installation into the Storage Ring is foreseen for Spring/Summer this year.

**Accelerators:**

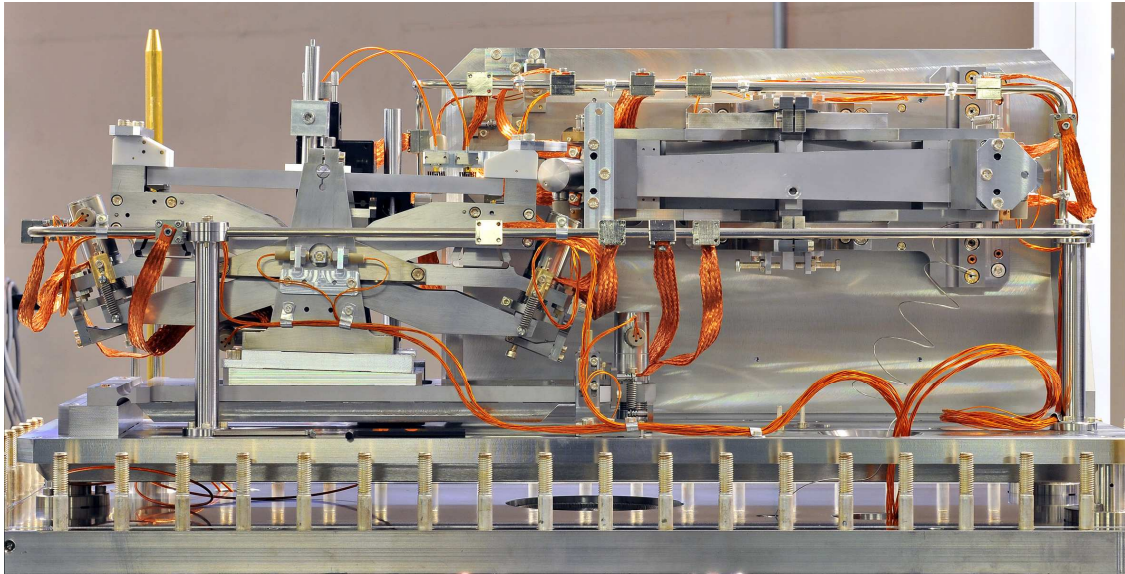
<http://www.cells.es/Divisions/Accelerators>

- The Nuclear Safety Council (CSN) granted CELLS an exceptional permit to inject into the storage ring over the week-end of the 12<sup>th</sup>-13<sup>th</sup> of February. The list of tasks were:

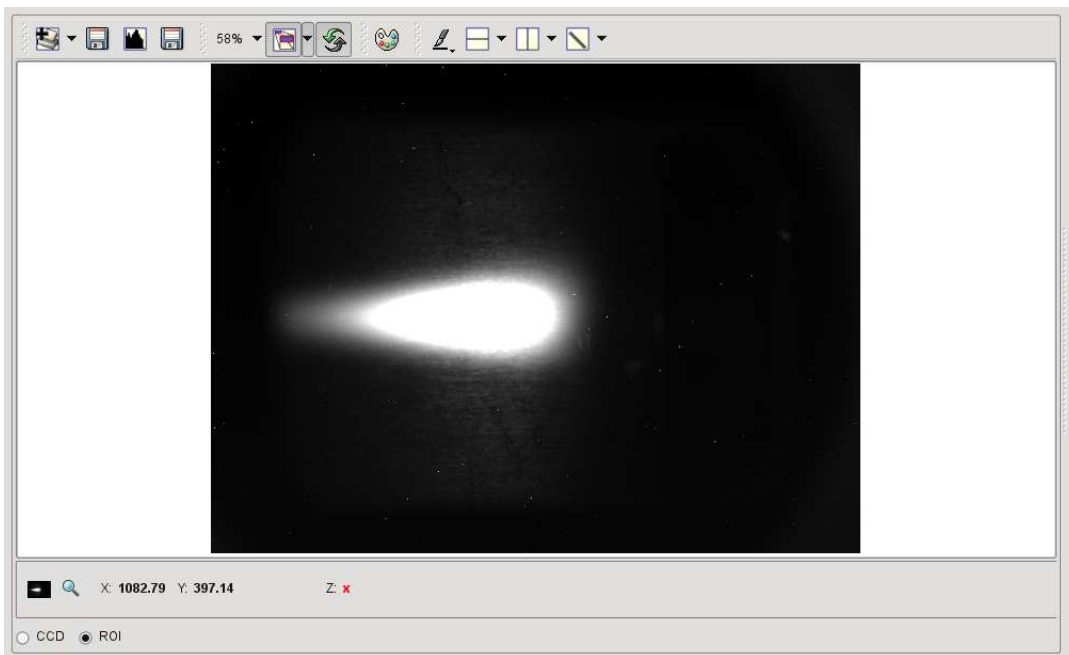
- \* Beam extracted from the Booster (BO).
- \* Beam through the transfer line.
- \* Beam injected into the Storage Ring (SR).
- \* First turn.

The first three tasks were achieved without major difficulties (Figure 2). However, a hardware problem with the BO extraction kicker put a stop to the trials earlier than expected. We did not have time to perform the first turn.

- On the current operation plan, SR commissioning starts on the 8th of March. The approval from the CSN should arrive just on time.



**Figure 1.** Kirkpatrick-Baez (KB) mechanics with dummy mirrors that can be seen during the mechanical metrology tests (BL24-CIRCE).



**Figure 2.** First image of the electron beam on the ALBA Storage Ring, right after the injection septum.