

- **Facility name:** Centro Nacional de Aceleradores.
- **Name of institute:** University of Seville, the Spanish Research Council (CSIC) and the Andalusia's Regional Government (Junta de Andalucía).
- **Machine type:** 3 MV Tandem Pelletron (NEC).
 - o **Type, current and energy of available particles:** protons from 600 keV up to 6 MeV and all kind of stable ions can be provided with energies ranging from around 600 keV to several MeV. The maximum current is the order of tens of μA .
 - o **Irradiation area with microbeam:** scanning from few μm^2 to mm^2
 - o **Irradiation area with no microbeam:** scanning up to $16 \times 20 \text{cm}^2$
- **Machine type:** compact 18/9 Cyclotron (IBA)
 - o **Type, current and energy of available particles:** This machine provides a unique energy for protons (18 MeV) and deuterons (9 MeV), but a series of degraders are being placed in order to decrease the energy value at will. There is not the possibility to scan the beam but it is possible to obtain different beam sizes decreasing the beam energy. The current in this external beamline ranges from few pA to $40 \mu\text{A}$.
 - o **Irradiation area:** any depending of the beam energy.
- **Machine type:** RADLAB (^{60}Co source).
 - o **Activity source:** 307 TBq (January 2015).
 - o **Dose rate:** 0.36-360 Gy(Si)/h (it is possible to use additional attenuation system).
 - o **Dose rate uncertainty:** $\leq 4\%$.
- **Availability:** On request ([beam time request tandem-cyclotron](#); [beam time request RADLAB](#)).
- **Costs:** contact with us.
- **Supplementary information:** The IBIC (Ion Beam Induced Charge) technique is available in the microbeam line linked to tandem accelerator. Count rates of only few particles/s can be employed to avoid radiation damage.
- **WEB site:** <http://acdc.sav.us.es/cna/>
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