

Improvements on ECR sources: cryogenics of Serse and oven of Caesar

Serse cryogenics critical from the operating point of view:

1. the system is quite complex and the path of ^4He is long from the liquefier to the cryostat (many dewars): big losses
2. priority is given to the Cyclotron



Autonomous system based on Helium recondensation and replacement of current leads with high T_c ones

2 phases:

- a) Design : the new system will be dimensioned and designed by a French company close to CEA Grenoble, who made the source
- b) Realization : Cost is expected to be 200-250 k€ therefore a call for tender will be launched based upon the executive drawings of a)

By the end of this year the new injection system of the room temperature source will be ready: an oven for metallic (low energy) beams will be available

Tandem status

1) Leaks in the accelerating tubes:

A quite careful campaign was accomplished from September to December 2010 to locate leaks detected in the first accelerating tubes. Once precisely located, they were fixed by means of a vacuum glue. The final value of the residual pressure is now almost 1 order of magnitude lower than before.



2) Charge system

- VIVIRAD (France) is going to produce an endless belt of the original type
“my personal feeling is that you can expect an MP belt sometime before the end of this year“
- another company in Italy
- Pelletron system: at Bucharest cost approx. 150.000 € Time: 2 months

EXCYT status

June 2010 Excyt session for production and delivery of 9Li to Chimera:

- Main problems at the primary and secondary accelerators: electrostatic deflector at the Cyclotron and vacuum problems at the Tandem
- Also problems at technical plants: room humidity and water conductivity, both limiting the HV platform performance (and causing time consumption)
- Good performance of the source after some modifications of the target heater and holder

List of the accomplished EXCYT activities aiming at safety and reliability:

Renovated front-end
Upgrading of the robot
Manipulation of the electrostatic deflector
Beam loss monitor
Control of vacuum pumps exhaust

EXCYT status

List of the not accomplished EXCYT activities concerning safety and reliability:

Air and water treatment from the radioprotection point of view
Dehumidification in the H.V. platforms
Control of the main parameters of the platforms
Mechanical problems related to the source remotization
Safety interlocks
Magnetic measurement devices
New optical element at the Tandem injection

Installation of the SPES-EXCYT test bench at LNS: now funded from SPES

Activities for production of ^{15}O oxygen :

- 1)target: collaboration with a group of Chemists of the University of Catania
- 2)characterization of the HPIS source at LNL