



Standing group for the upgrade of ISOLDE – 2008

Priorities for Target and Ion Source Development (TISD)



Resources and priorities...

FROM last GUI meeting:

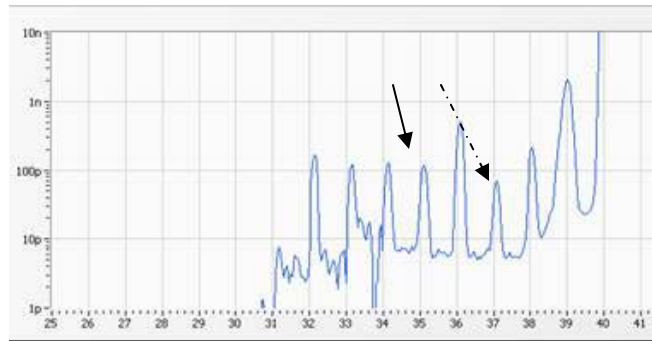
- 2008 will see a drastic reduction on manpower for TISD and target tests (- 5FTE).
- 1 new item should be selected to get priority:

^{35}Cl impurity seen in ^{35}Ar beam (WITCH)



^{35}Cl purification for ^{35}Ar

- Cl Impurity has always been seen in CaO-MK7 units

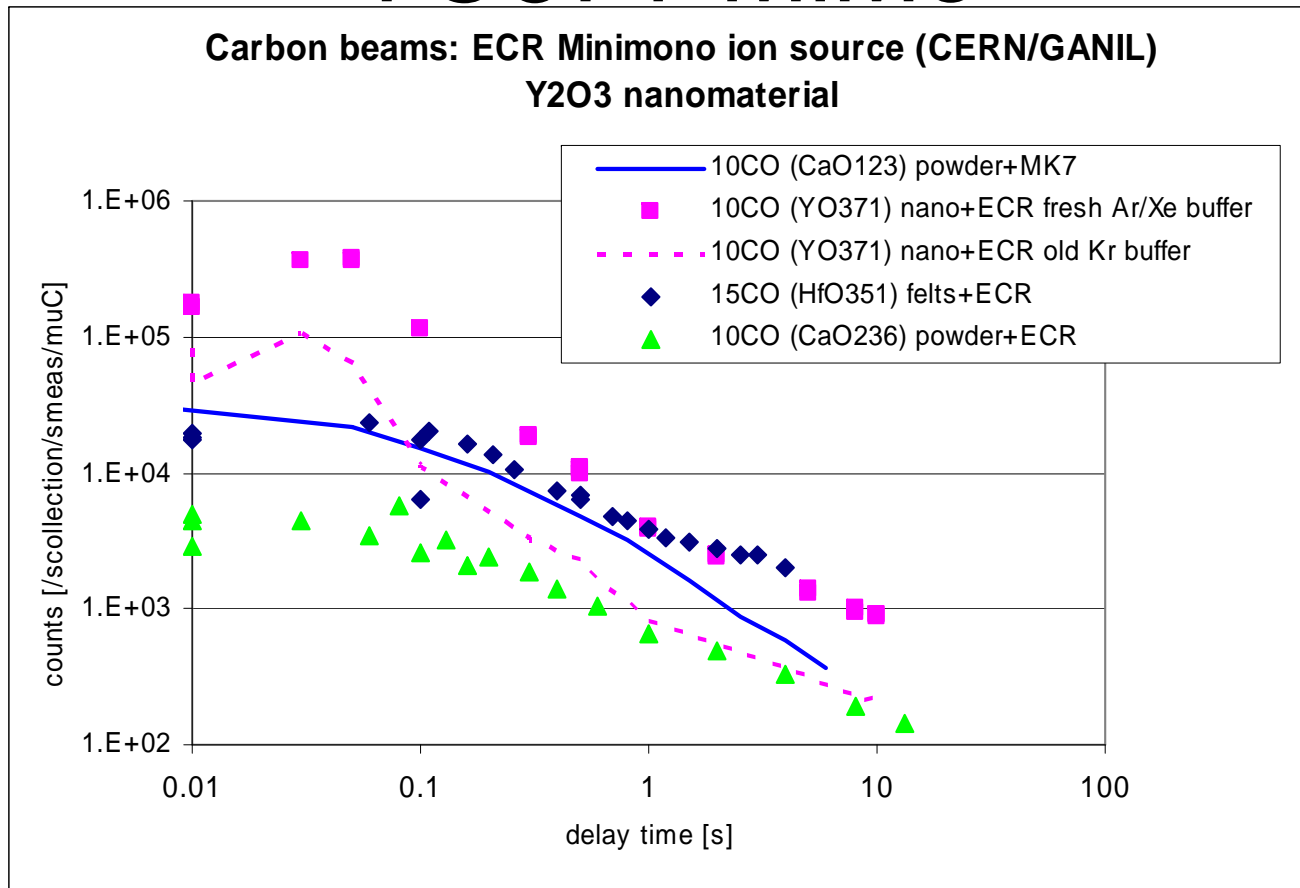


- Could be reduced down to $6e7$ $^{35}\text{Cl}/\text{s}$ by new cleaning procedure (HNO_3) + thermal outgassing of the transfer line
 - B. Crepieux, L. Penescu, N. Singh, T. Stora



Minimono ECR ion source Y2O3 nanograined target YO371-MiMo




ISOLDE
CERN

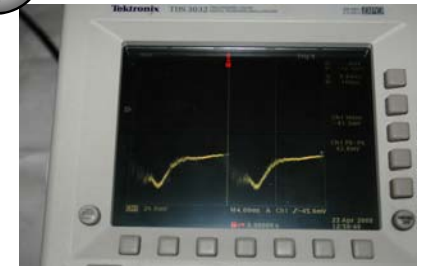


L. Penescu, S. Fernandes, N. Singh, B. Crepieux, E. Barbero, R. Catherall, F. Wenander, P. Fernier, A. Dorsival, H. Franberg, S. Sgobba, G. Izquierdo, M. Eriksson, U. Koester, J. Lettry, T. Stora, D. Carminati, T. Stora, AB-ATB-IF, CERN

GUI-May 2008

YO371 learnings

- Some improvement for 72Kr 
- Improvement for (9)10CO beam
- Some losses in beam transport 
- Drop in ECR performance : 



 – for Physics run:

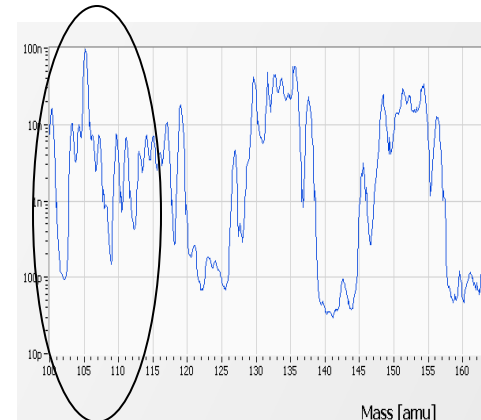
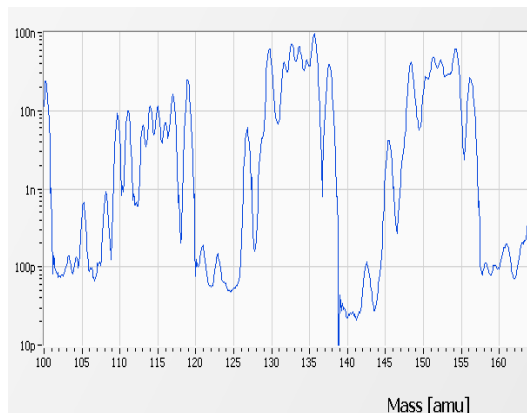
2 RF generators – 1 RF waveguide required

- Injection into REX-TRAP : Ok 
- Fast release – stability of target Ok 

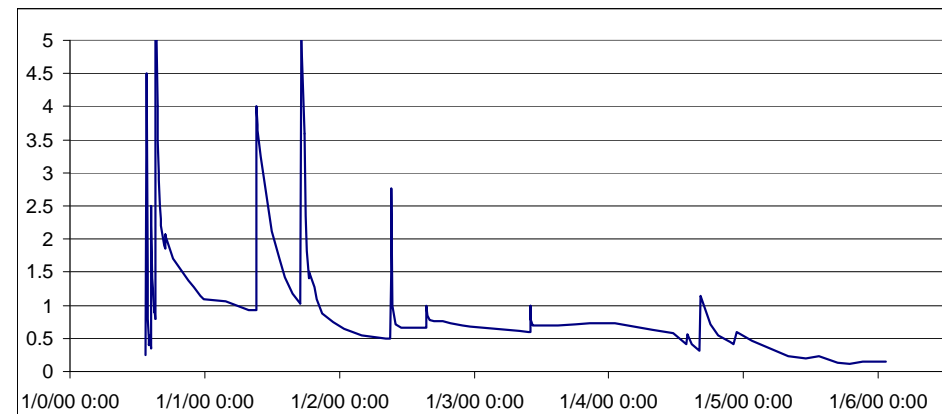
TiF₃⁺ ionization

– For ⁴⁴Ti (LoI):

- MK3+CF₄: Target #366 : did not work out
- MK5+CF₄: Target #369 : 3.5% as TiF₃⁺



| | Ti (mass 48) (nA) | TiF (mass 67) (nA) | TiF₂ (mass 86) (nA) | TiF₃ (mass 105) (nA) |
|---------------------------------|--------------------------------|---------------------------------|---|--|
| Oven=0A | Hidden | 8 | 0.8 | 0.7 |
| Oven=70A | No change | 20 | 20 | 100 |
| Net increase: | 0 | 12 | 19 | 99 |
| Percentual Distribution: | 0 | 9.2% | 14.6% | 76% |

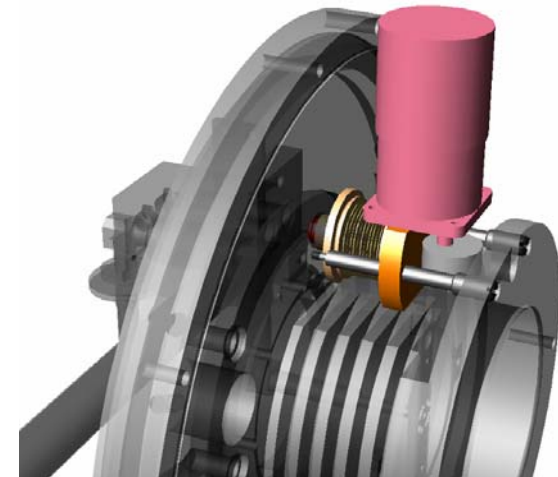
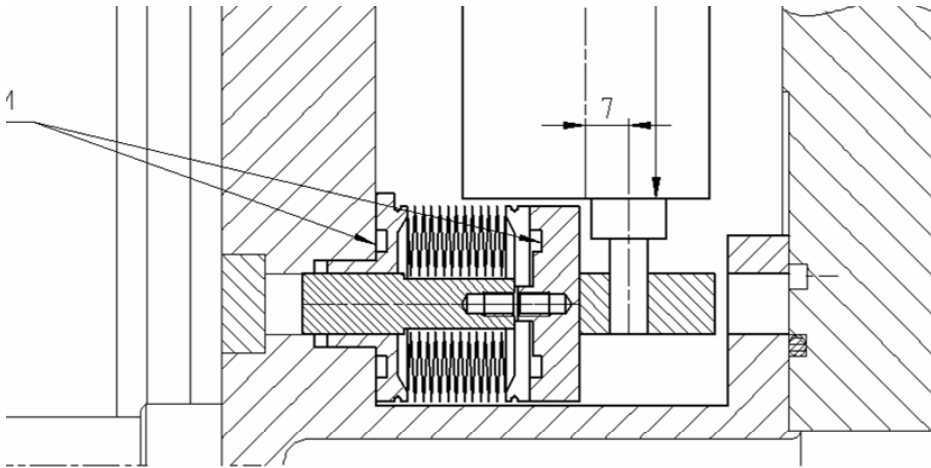


L. Penescu, B. Crepieux, D. Carminatti, T. Stora

T. Stora, AB-ATB-IF, CERN

GUI-May 2008

- Selective trapping (Fr suppression for TI) :
UCx-362 (v3.0) 300-600°C – New tests





Long term R&D – UCx targets

- WP9 - JRA2 ISOMATT has been submitted within ENSAR (follow-up of EURONS)
- High density UC tests for EURISOL- tb cont'd

— GAO "YEHASHBROFOT" — TENEX — "YEHASHBROFOT" —
 078FMT0E BHEHEDHDMHKEKDE AKUHHKPHOE OBULECTBO "YEHASHBROFOT"

Fax Message

| | | | |
|----------|---|--------------------------------------|--------------------|
| Date | May 15, 2008 | No | 05343 / 7772 |
| To: | Chief Scientific Officer Deputy Director-General CERN | From: | Mr.A.E.Lebodov |
| Attn: | Professor Jos Engelen | Department of Isotope Products | |
| Copy to: | | Exec: Senior Manager | |
| | | Mr.T.Mitrović | |
| Fax No.: | +41 22 766 9039 | Ytel: | (+7 495) 544-41-03 |
| Mail: | CERN-CRO-2008-019/G | Fax: | (+7 495) 951-17-90 |
| Subject: | Mutual cooperation | Number of pages including this page: | 1 |

- Actinide target WP in LENITA (AcTAS) to be submitted to 2nd Marie-Curie FP7 call (sept 2008)



ENSAR ISOMATT (WP9)

- Budget requested to EU : 520 k€
(183 k€ for CERN)

| | | | | | | |
|--------------------------------|----------------------------------|-------------------------------|------|------|-----|---|
| Work package number | WP09 | Start date or starting event: | | | | 1 |
| Work package title | ISOL Mesoporous Actinide Targets | | | | | |
| Activity Type | RTD | | | | | |
| Participant number | 2 | 3 | 6 | 7 | 34 | |
| Participant short name | GANIL | INFN | CERN | CNRS | PSI | |
| Person-months per participant: | 18 | 48 | 28 | 43 | 12 | |

Task 1

D-JRA02-1: Novel synthesis of actinide targets – target prototype

Task 2

D-JRA02-2: Characterization of new actinide targets – Report

Task 3

D-JRA02-3: Characterization of irradiated materials in hot cell – Report

Task 4

D-JRA02-4: Isotope release properties and modelling – Report



Items for 2008

(see also talk of A. Herlert)

- $^{148,150}\text{BaF}$ (lanthanides suppression) at REX
- ^{75}Cu (^{75}Ga suppression) at REX
- ^{72}Kr at REX
- ^{140}Nd , ^{142}Sm beams: combining ThO/low work function cavities/RILIS (LoI)
- ^{22}Mg (^{22}Na suppression) at REX (LoI)
- Negative beams
- This INTC: ^{35}Ca , BaCl , ...