

# Standing group for the upgrade of ISOLDE – 2007

## Priorities for Target and Ion Source Development (TISD)

# Last GUIs (Oct06-May07)

## – **Minimono for C beams (IS445):**

CaO236-Apr07-tests (RF cable failure)

$2e6$   $^{35}\text{Ar}/\mu\text{C}$     $2e3$   $^{33}\text{Ar}/\mu\text{C}$     $50$   $^{32}\text{Ar}/\mu\text{C}$

HfO351-Aug07 (Magnet overheating)

$5e4$   $^{15}\text{CO}/\mu\text{C}$

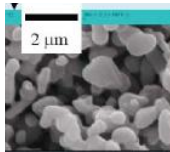
## – **SiC $^{21}\text{Mg}/^{17}\text{F}$ beam (IS427-IS424):**

SiC353-May07

$1e6$   $^{22}\text{Mg}/\mu\text{C}$     $2e4\text{pps}$   $^{21}\text{Mg}$  at COLLAPS

SiC364-Sept07

$1.4e5$   $^{17}\text{F}/\mu\text{C}$     $8e3\text{pps}$  at Miniball



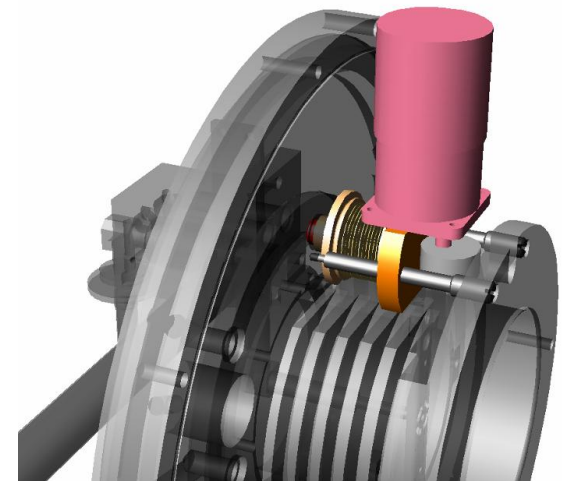
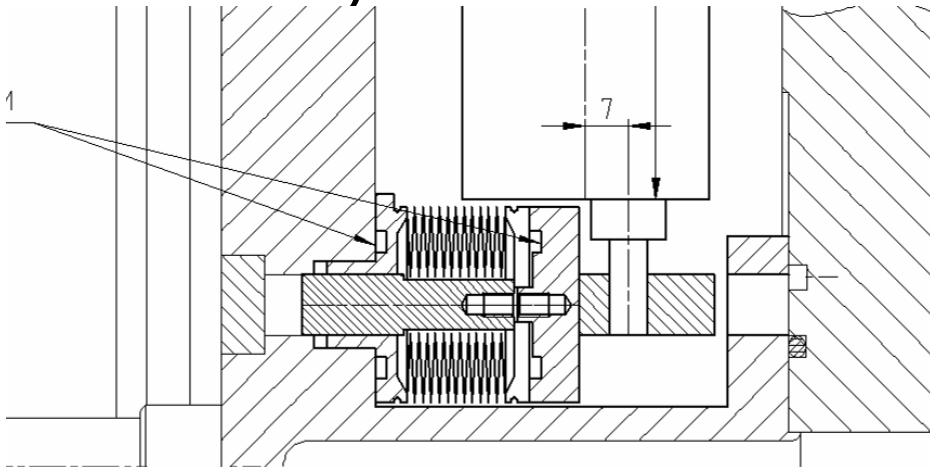
- LIST (Cooling+Laser): low work function cavities offline instead.

Cavity	Temperature / K	Selectivity*	$\epsilon_{\text{Gallium}} / \%$	$\epsilon_{\text{Rubidium}} / \%$
W	2500	6	13,5	-
BaOSrO	1300	$5 \cdot 10^5$	9,5	6,8
GdB6	1500	100	2,4	55

\* Ga laser ions / Ga surface ions

U. Mainz (K. Wendt et al.)  
 AB-ATB (RILIS, ATB-IF)

- For Negative ion sources (Lols 70gBr, ~~30S~~) :  
Upgrade of offline separator with fast valve/FC for effusion: started target #366
- For selective trapping (Fr suppression for Tl, Hg) : UCx-362 (v3.0) 300-600 C – not fully analyzed



- For  $^{44}\text{Ti}$  (LoI): tests with MK3+CF4: started offline, Target #366
- For selective thermochromatography :  
New materials (ORNL) : ongoing  
(workshop on chemical beam purification,  
CERN, Sept 2007)



# Long term R&D

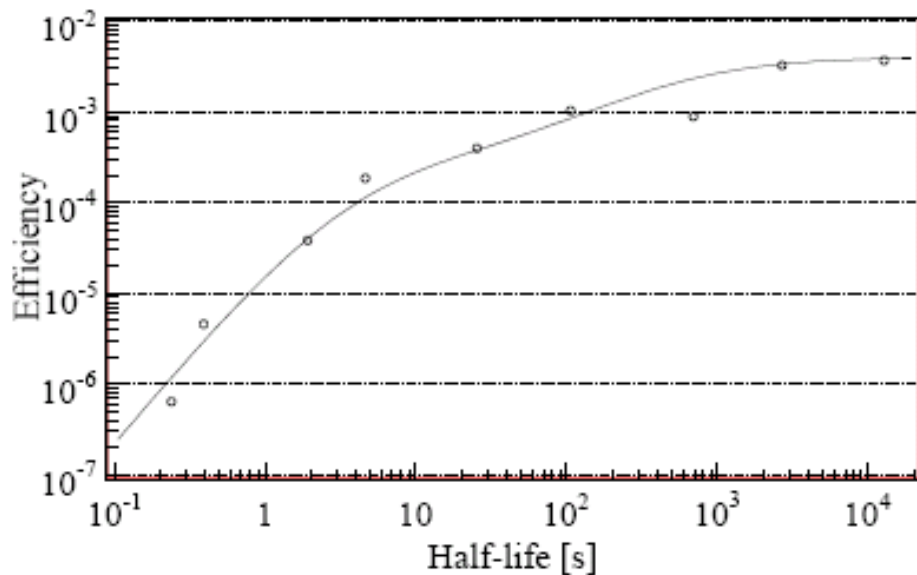
- Development of UCx targets:  
AcTAS Marie-Curie project in FP7 did not pass 1<sup>st</sup> round (got 81% overall mark - over threshold)
- N-JRA1 “ISOL targets and beam generation techniques” submitted to ENSA steering committee
- High density UC tests for EURISOL



# Recent developments used for Physics in 2007



## Po RILIS for IS456



<sup>184</sup>Hg beams at REX  
For IS452

T. Cocolios et al. EMIS07



# New items in 2007

(see also talk of A. Herlert)

- $^{35}\text{Cl}$  impurity seen in  $^{35}\text{Ar}$  beam (WITCH)
- $^{148,150}\text{BaF}$  (lanthanides suppression) at REX
- $^{75}\text{Cu}$  ( $^{75}\text{Ga}$  suppression) at REX
- $^{72}\text{Kr}$  at REX: needs increased yield (ZrO<sub>2</sub> thickness, Minimono)
- $^{140}\text{Nd}$ ,  $^{142}\text{Sm}$  beams: combining ThO/low work function cavities/RILIS (LoI)
- $^{22}\text{Mg}$  ( $^{22}\text{Na}$  suppression) at REX (LoI)





# Resources and priorities...

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