The Group for the Upgrade of ISOLDE

Target R&D - Accomplished & Closed developments

ACCOMPLISHED AND CLOSED DEVELOPMENTS

Target	Beam	Isotopes	Experiment / Request		Time needed	Comments	Online	Offline	Responsible	User Exp. Contact	Status
ZrO_2 – HP	SeCO	^{70}Se	**IS405** **(IS394)**	REX ISOLTRAP		SeCO+ with strongly reduced injection energy to TRAP / injection to EBIS and breakup.	X	X	Wenander / Delahaye	Butler / Jenkins	Tested: ~10^3 s^{-1} ^{70}Se @ MINIBALL **DONE 2005**
C (graphite) - W		^{7}Be	**IS391** **IS366**	Coll.		Offline, RILIS Be, asked by users		X	ISOLDE	Reislöhner Haas	Offline PSI C target

											DONE 2004
UC_x – MK5	n-rich Sn	Many	**IS413**	ISOLTRAP		Adding ^{34}S as carrier to an UCx/C - MK5 → neutron-rich SnS+ molecules.	X	X	Köster	Herlert	**DONE 2005/2006**
REX dev.	—	Many	**REX**	REX MINIBALL		Longer pulse duration from the EBIS. *Slow extraction* should be implemented		X	*REX*	—	**DONE 2006**
UC_x	n-rich Zn	^{76}Zn -^{78}Zn -^{80}Zn	**IS412** **IS413**	REX		Ga and Rb contaminants: quartz transfer line for retention		X	Köster Mainz Bouquerel	Leuven IsolTrap	**DONE 2005**
U/Th – LIS	Au	^{201}Au $^{203,205}Au$	**I60** **IS447**	Decay spec.		LoI May 2005	X		Fedosseev	Podolyak	**DONE 2006**
UC_x – LIS	n-def. Po	RILIS Po	**I57**	In source spec.		LoI February 2005 RILIS schemes	X		Fedosseev	Lesher	**DONE 2006**
RILIS	Hg	RILIS	**TISD**	Hg efficiency		RILIS efficiency	X		Fedosseev	—	**DONE 2006**

		Hg									
SiC – W	F / AlF - LaF	^{17}F	**IS424**	REX		LaF+ *molecule injection*, F+ (stripper foils), AlF+ (+CO_2 contaminants)	X		*Fernandes* *REX*	Woods	**DONE 2007**
Ti foil Si "foil" SiC	n-def. Mg	^{22}Mg ^{23}Mg ^{21}Mg	**IS427** **IS413**	ISOLTRAP COLLAPS TARGISOL		RILIS tests ^{22}Mg (~10^6 ions/μC for 20 g/cm^2 target with ^{22}Na up to 10^8 ions/μC) Si higher cross sections than Ti	X	X	Mainz Köster	Herlert	**DONE 2007**
Pb	^{182,184}Hg	^{182,184}Hg	**IS452**	REX	Online test	Charge breeding successfully tested offline	X	X	Wenander	Butler Van Duppen	**DONE 2007**
ZrO_2 TiO free	^{62}Ga	^{62}Ga	**IS406**	TAGS		TiO free material to be tested	X		ISOLDE	Cederkäll	**DONE 2008**
UC_x	n-rich Cd		**IS393** **IS411**	Decay REX		Cs, In and Fr contaminants. Quartz transfer line	X	X	Bouquerel/	Kratz Krücken	**DONE 2008**

Y2O3 - VADIS ion source		^{72}Kr	**P228**	REX		increase of yield	X		Stora	Nara Singh Bondili, Clément	**DONE 2009**
CaO - VADIS	Ar	^{35}Ar	**IS433**	WITCH		^{35}Cl contamination + yield (nanomaterial)	X		Stora	Severijns Herlert	**DONE 2009&2011**
Several			**TISD**	Vibrometer	3 shifts	Stress waves			Wilfinger	—	**DONE 2007**
Light (MgO) Bi-valve			**TISD**	**EURISOL & ISOLDE**		Development of multi transfer line targets	X	X	ISOLDE AB	—	**DONE 2008**
Various standard	Various	Various	**TISD**	**EURISOL**		R&D in the framework of EURISOL-DS	X	X	ISOLDE AB	—	**DONE 2009**
Various			**TISD**			Studies of nanomaterials		X	ISOLDE AB	—	**DONE 2010**
UC_x	n-rich Cd	^{128}Cd	**P226**	REX		yield check	X		Stora	Kröll Fraile	**DONE 2009**
Y2O3 VD7	several	^{72}Kr				beam purity		X	A Gottberg	Bondili	**DONE 2011**
UC_x	Na	^{30}Na		REX		Re ionizer		X	T. Stora	Reiter	**DONE 2011**

Ta-GdB6	Lanthanides	^{140}Nd, ^{140}-^{142}Sm	**IS496**	REX		dev. RILIS + GdB6 cavity for impur. suppress.	X	X	Stora/Fedosseev	Siem	**DONE 2010&2011**
Ti-LIST ZrO-LIST	RILIS TiO2 impur.	n-def Mg	**TISD IS462**			Reduction of TiO/Alkali contamination LIST development	X	X	ISOLDE	Wendt / Fedosseev	**DONE 2011** (Ti-LIST)
source + VD5 + CF4 leak as TiF3+	Ti	^{44}Ti	**I70 IS543**			^{44}Ti from PSI ERAWAST project		X	Stora	Lindroos Murphy	**DONE 2012**
neutron converter	fissions (Cd, Zn, Cu, etc)	n-rich	several			Beam purity/intensity	X	X	R. Luis		**PHASE I DONE 2012**
UCx-LIST	RILIS		**TISD**			Alkali suppression + RILIS			Wendt / Fedosseev	—	**DONE 2012**
UC_x	various	various	**TISD**			nanoUCx dvlpt - ENSAR_ActI Lab			Stora/Gottberg		**DONE 2012**
nanoTi, RILIS	n-def K, Ca	37K	**IS527**			Beam intensity	x	x	JP Ramos		**DONE 2014**
MgF, CaF, CNTs + CF4	B	^{8}B	LoIs				X	X	C. Seiffert	Di Pietro	**DONE 2015**

ThO2, nanoUC, LIST	Cu	^{75}Cu $^{76-79}$Cu	**IS535**	REX tbc		Ga cont./intensity	X		Stora	Georgiev	**DONE 2015**
Pb UCx	n-rich Hg, Tl	$^{207-210}$Hg $^{208-214}$Tl	**IS463**	ISOLTRAP		Cs, In and Fr contaminants. Quartz line	X	X	TISD	S. Kreim	**Part 1 (^{207,208}Hg) DONE 2015**
nanoUCx-VD7	n-rich Ar	46-48Ar	**IS490**			Beam intensity	x	x	JP Ramos		**Part 1 DONE 2015**
Ucx, ThO, GeS	Ge	64-66Ge	**IS570**								**DONE 2016**
NiO/Cr_2O_3/CrC_x	n-def. Mn	^{47}Mn	~~P94~~	Spec.		Release measurements to be performed	X	X	Köster	Jokinen	Closed
UC_x	Sr,Ge,Se	$^{84-89}$Ge, $^{90-93}$Se $^{102-104}$Sr	~~IS458~~	ECR		molecular beams partly tested	X		Stora	Marie-Jeanne Delahaye	Closed
UC_x	Short lived Ni	^{66}Ni	~~IS412~~ -	REX	2 shifts with IS412	Ni RILIS, Carbon coated target. Also ^{66}Ni implantations Low yields	X		Köster / Catherall	Van Duppen	Closed

	rare earth		~~**IS461**~~	ISOLTRAP			X	X	Stora	Kowalska Herlert	Closed
	n-def. Mg	22Mg	~~**I51**~~	REX		22Na contamination	X		Stora	Cederkäll	Closed
1+ ECR ion source	C beams N, O Noble gases	^{9}C n-rich C ^{14}~~O~~	**IS445** ~~**(IS420)**~~ ~~**IS413**~~	Decay REX	Offline test	Improvement of Ionization efficiency for He, Ne New materials HfO	X	X	Kronberger/Seiffert	Riisager	Closed
UC_x	Sr beam	^{96}Sr	**IS451**	REX		molecular beam injection to EBIS and breakup.	X		REX	Görgen Clément	Closed
	Sn	^{105,107}Sn	**IS459**	REX		yield check and increase of yields	X		Stora	Cederkäll	Closed
Ta(&W&Ir)-W UC-W	Lanthanides, At	$^{140/141}$Pr(int) $^{178-180}$Yb Dy, Er $^{221-223}$At(pur)	**IS517** ~~**IS498**~~	COLLAPS ISOLTRAP		Beam purity/intensity			T. Stora	S. Kreim, D. Yordanov	Closed
YO-molten ZrF4 - VD5	Kr	70,71Kr	**IS490**	ISOLTRAP		Beam intensity			T. Mendonca/JP Ramos	S. Kreim	Closed

nanoUCx, ThO	n-rich At, Au	$^{221-223}$At, $^{202-205}$Au	**IS518**			Beam intensity/purity	x	x	A. Gottberg		Closed
SiC	Al	$^{25-26m}$Al	**I63**			SiC and other materials	X	X	Fernandes	Cederkall	Closed

Last update: June 30, 2016 - TS