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Message ID: **158** Entry time: **Thu Dec 8 15:49:36 2022**

Experiment Date:	2022 12 05
Duration (Days):	3
User:	Masedi Masekane, Iva Bozicevic Mihalic, Stjepko Fazinic, Anja Miokovic
Accelerator:	VDG & TDT
Beam Line:	Old uProbe
Project:	LIIS
Experiment Title:	Multiple ionization satellites of Sn La and Lb lines with H, C and Si ions
Beam:	2 MeV H+, 15 MeV C, 8 MeV Si4+
Method:	HR PIXE

5.12.2022. 2 MeV H+ with TDT

Ge(220) crystal

Crystal	Line	Crystal position in Mauri's code (mm)	Cryal position in the chamber (mm)
Ge	Sn La	61.3	75.2
Beryl	Mg Ka	22.5	114

Difference in the position of Sn La with Ge and Beryl calculated with Mauri's code was 38.8. Beryl crystal for Mg Ka line was positioned at 114 mm for Mg Ka line so taking into account the difference of 38.8 mm we reach to the value of 75.2 that we need to adjust to measure Sn La line with Ge.

Energy window for Sn in the analysis of HR PIXE spectra was 800 - 1000

Me 16.5 Ox 34.6

Final crystal position 79 mm for Sn La, 92.3 for Sn Lb

File	texp(s)	No of frames	Sample	Comment
2212006	30	1	Sn La	
2212007	10	1	Sn La	crystal moved
2212008	4	10	Dark	
2212009	4	600	Sn La	
2212010	10	10	Dark	
2212011	10	300	Sn Lb	I=0.5 nA, deflection was off for the first 16 frames

6.12.2022. 15 MeV C with VDG

Deflection -700 V

Me 39.1 Ox 82.5 I=2 nA, later it increased to 8 nA

Final crystal position 79 mm for Sn La, 92.3 for Sn Lb

At the current position of the SDD (10 cm piece inserted for the adjustment of the distance of the SDD), rate was too high (15 kHz?) so we didn't record PIXE spectra

File	texp(s)	No of frames	Sample	Comment
2212012	20	1	Sn La	
2212013	2	10	Dark	crystal moved
2212014	2	900	Sn La	
2212015	20	1	Sn Lb	
2212016	6	10	Dark	
2212017	6	450	Sn Lb	I
2212018	6	450	Sn Lb	

7.12.2022. 8 MeV Si⁴⁺ with VDG

Me 46.2m Ox 97.2 I=1.5 nA

We focused on the edge of the paper, paper itself has some layer on the top so the Si ions don't reach the fluorescent part. We roughly focused using the calculate to switch from H to Si on the edge of the paper and then used CsI to focus better.

We don't see the line in Vista even with 2 minutes exposure time so we collected approximately 50 frames, processed the data and then the line was visible.

File	texp(s)	No of frames	Sample	Comment
2212019	10	10	Dark	
2212020	10	100	Sn La	
2212021	10	100	Sn La	
2212022	10	300	Sn La	
2212023	10	300	Sn La	
2212024	10	300	Sn La	I
2212025	10	150	Sn La	