Laboratory for Ion Beam Interactions Logbook v1.0



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Experiment Date: 2021 02 17

Duration (Days):

User: Zdravko Siketic, Marko Barac, Matea Krmpotic, Marko Brajkovic

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Accelerator: Van de Graaff
Beam Line: Old uProbe
Project: RADIATE TA

Experiment Title: MeV TOF-SIMS

Beam: 5 MeV Si4+

TDT accelerator

Method:

FC = 19.5 kHz; STIM = 4.5 kHz; FC3 = 235 nA

Me = 92.8; Ox = 91.0

x = 10; y = 2.8; $SS = 10 \times 1$

Vbunc = +- 500 V

Positive mode Vext = +5 kV

Negative mode Vext = -4.0 kV

Samples from 2102133 to 2102239 measured with 5 MeVSi⁴⁺ from TDT accelerator. <u>TDT source failed</u>. Switched to VDG.

VDG accelerator (from sample 2102240)

FC = 11.7 kHz; STIM = 2.2 kHz

Me = 97.4; Ox = 93.1

Position of the beam spot within the tissues (in the grid, 4×4 squares):

1	2	
3	4	

Spectrum ID	Sample description	Comment
2102133	Leucin mrezica	TDT accelerator; SS = 10 x 1 (850 x 850 um2)
2102134	Sample #4, only PET, around tissue 1, ouside of tissue	PET non coated, no signal, SS = 10 x 1
2102135	Sample #4, tissue 1, position 1 (in the grid)	low yield, SS = 10 x 1; t = 485 s
2102136	Sample #3, only PET carbon coated, outside tissue 1	PET carbon coated, t = 481 s
2102137	Sample #3, tissue 1, position 3 (in the grid)	SS = 10 x 1, t = 550 s, I(FC3) = 245 nA
2102238	Sample #3, tissue 1, position 4	negative mode, Vext = -4.2 kV, no signal
2102239	Sample #3, tissue 2, 9-AA matrix, position 3	Vext = -4 kV, NO BEAM
2102240	Leucin	VDG accelerator
2102241	Sample #3, only PET, outside tissue 1	Vext = +5 kV; SS = 10 x 1, t = 480 s
2102242	Sample #3, tissue 1, position 1	Vext = +5 kV, t = 500 s (?)
2102243	Sample #3, tissue 1, same position	Negative mode, Vext = -4 kV, t = 1200 s, I(anal) = 300 nA
2102244	Sample #3, tissue 2, 9-AA matrix, position 1	Vext = -4 kV
2102245	Sample #3, tissue 2, 9-AA matrix,, same position	Positive mode, Vext = +5 kV
2102246	Sample #3, tissue 3, CHCA matrix, position 1	Vext = +5 kV, t = 600 s
2102247	Sample #3, tissue 3, CHCA matrix, same position	Negative mode, Vext =-4 kV, t = 1387 s; I(anal) = 310 nA
2102248	Sample #3, tissue 4, DHB matrix, position 1	Vext =-4 kV, t = 1481 s
2102249	Sample #3, tissue 4, DHB matrix, same position	Positive mode, Vext = +5 kV, t = 705 s