$E_{^{18}O}$ = 124.92→111.33 MeV, $I_{^{18}O}$: 4.00 eμA (4.17×10^{12} pps), T_{Au} = 900 °C

$$f_{^{A}Fr} = \varepsilon_{transportation}\ \varepsilon_{desorption}\ \varepsilon_{ionization}\ \varepsilon_{escape}\ \frac{P_{^{A}Fr}}{j}\ I_{^{18}O}$$

$P_{^{208/209/210/211}Fr}$: 1.3 / 12.6 / 18.3 / 5.0 [×10^6/s]

ε_{escape}($^{208/209/210/211}$Fr): 49.8 / 32.9 / 35.2 / 28.9 %

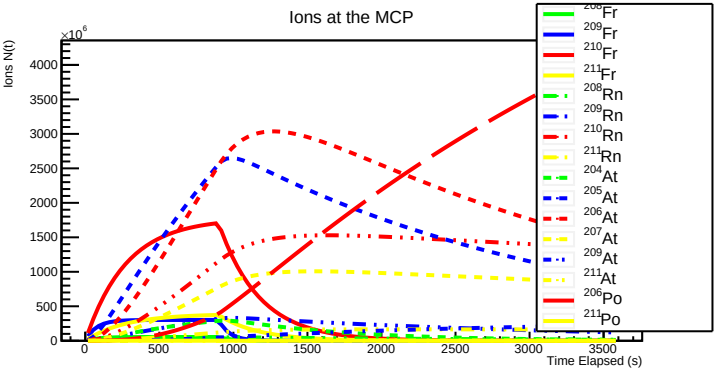
$\varepsilon_{ionization}$: 100.0%, $\varepsilon_{desorption}$: 100.0% (?), $\varepsilon_{transportation}$: 100.0% (?)

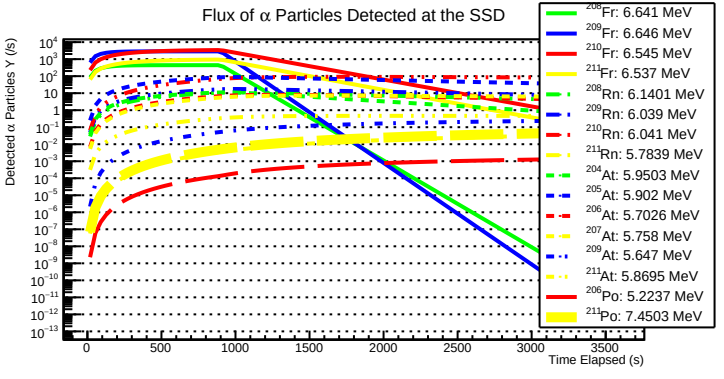
$f_{^{208/209/210/211}Fr}$: 0.6 / 4.1 / 6.4 / 1.4 [×10^6/s]

Number of ions at MCP surface

$$N_{^{A}Fr}(t) = f_{^{A}Fr}\tau_{^{A}Fr} + \left[N_{^{A}Fr}(t_{ON}) - f_{^{A}Fr}\tau_{^{A}Fr} \right] e^{-\frac{t - t_{ON}}{\tau_{^{A}Fr}}} \rightarrow N_{^{A}Fr}(t_{OFF})\, e^{-\frac{t - t_{OFF}}{\tau_{^{A}Fr}}}$$

**We assume that only Fr is extracted from the target.





Detected signal $Y_{^{A}Fr}(t) = \varepsilon_{signal}\ \varepsilon_{SSD}\ (1-\varepsilon_{OAR})\ \frac{b_{^{A}Fr}}{\tau_{^{A}Fr}} N_{^{A}Fr}(t)$

ε_{signal} = 100.0% (?), ε_{SSD} = 0.21%, ε_{OAR} = 63.0%

After 900.00 seconds of beam irradiation:

^{208}Fr: α detection 399.66 pps (6.64 MeV)

^{209}Fr: α detection 2548.76 pps (6.65 MeV)

^{210}Fr: α detection 3308.05 pps (6.54 MeV)

^{211}Fr: α detection 911.69 pps (6.54 MeV)