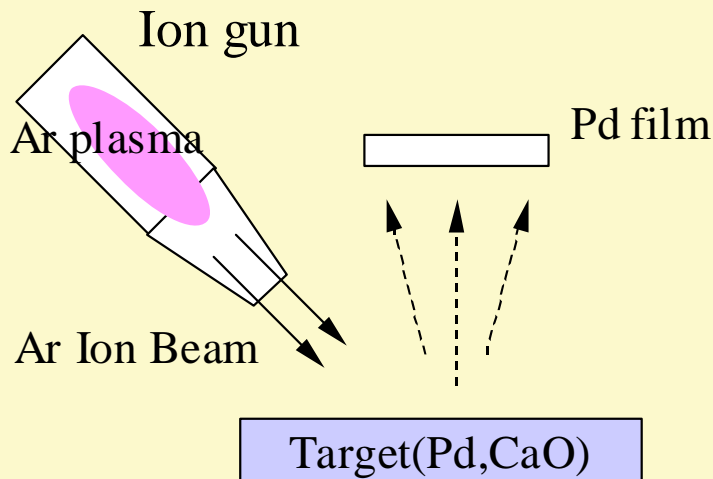
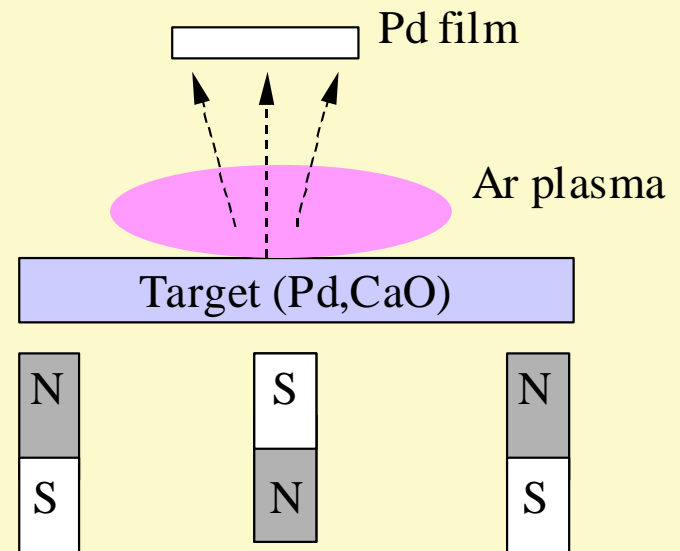


Consideration on the Role of CaO

Ion Beam Sputtering

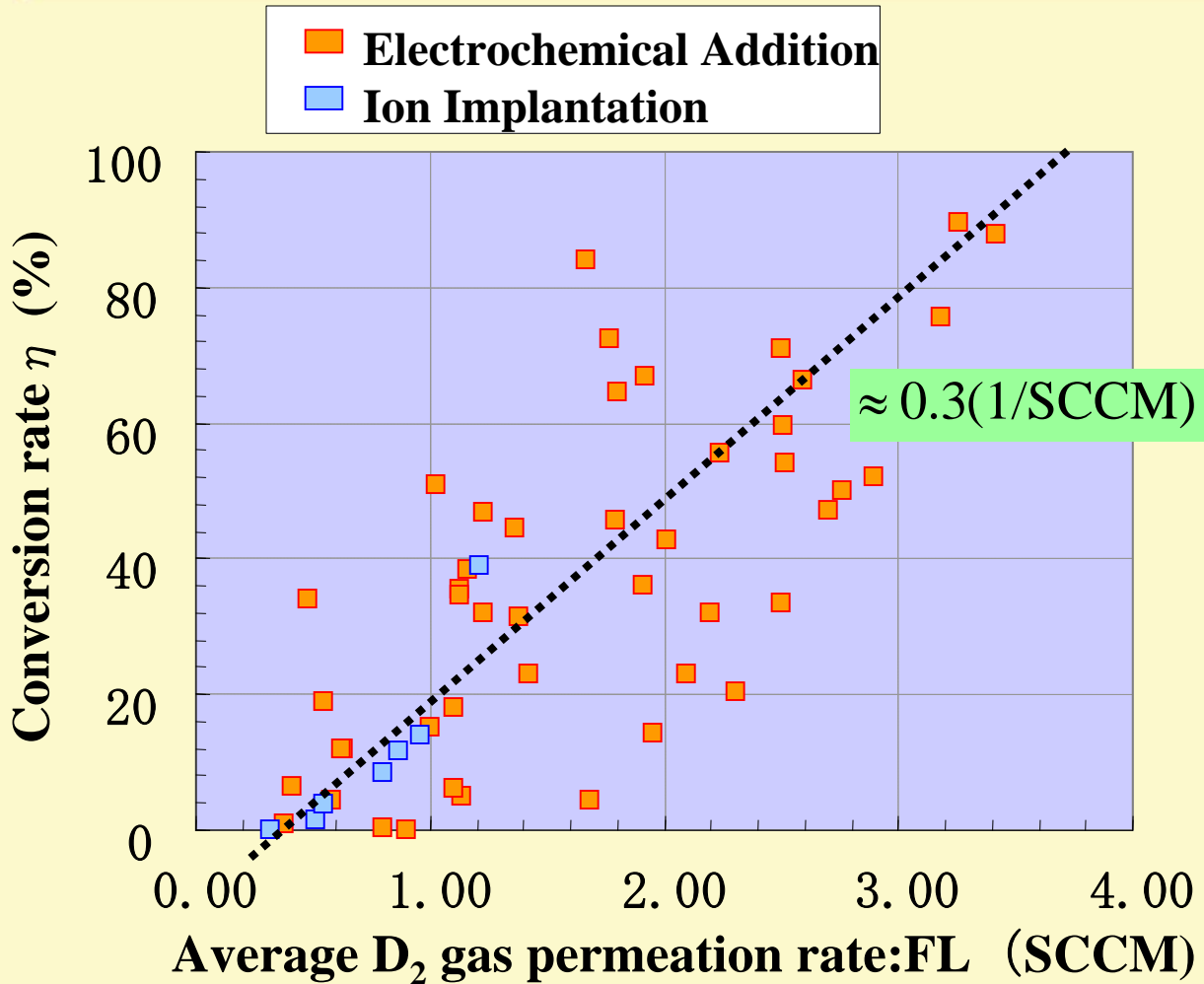


Magnetron Sputtering



Both magnetron sputtering and ion beam sputtering methods gave positive results.

Correlation between D₂ Permeation and Conversion Rate



$$\eta = \frac{N_{Pr}}{N_{Cs}} \times 100\%$$

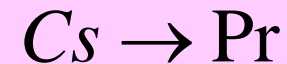
$$= \frac{N_{Pr}}{N'_{Cs} + N_{Pr}} \times 100\%$$

η : conversion rate(%)

N_{Pr} : detected Pr (ng)

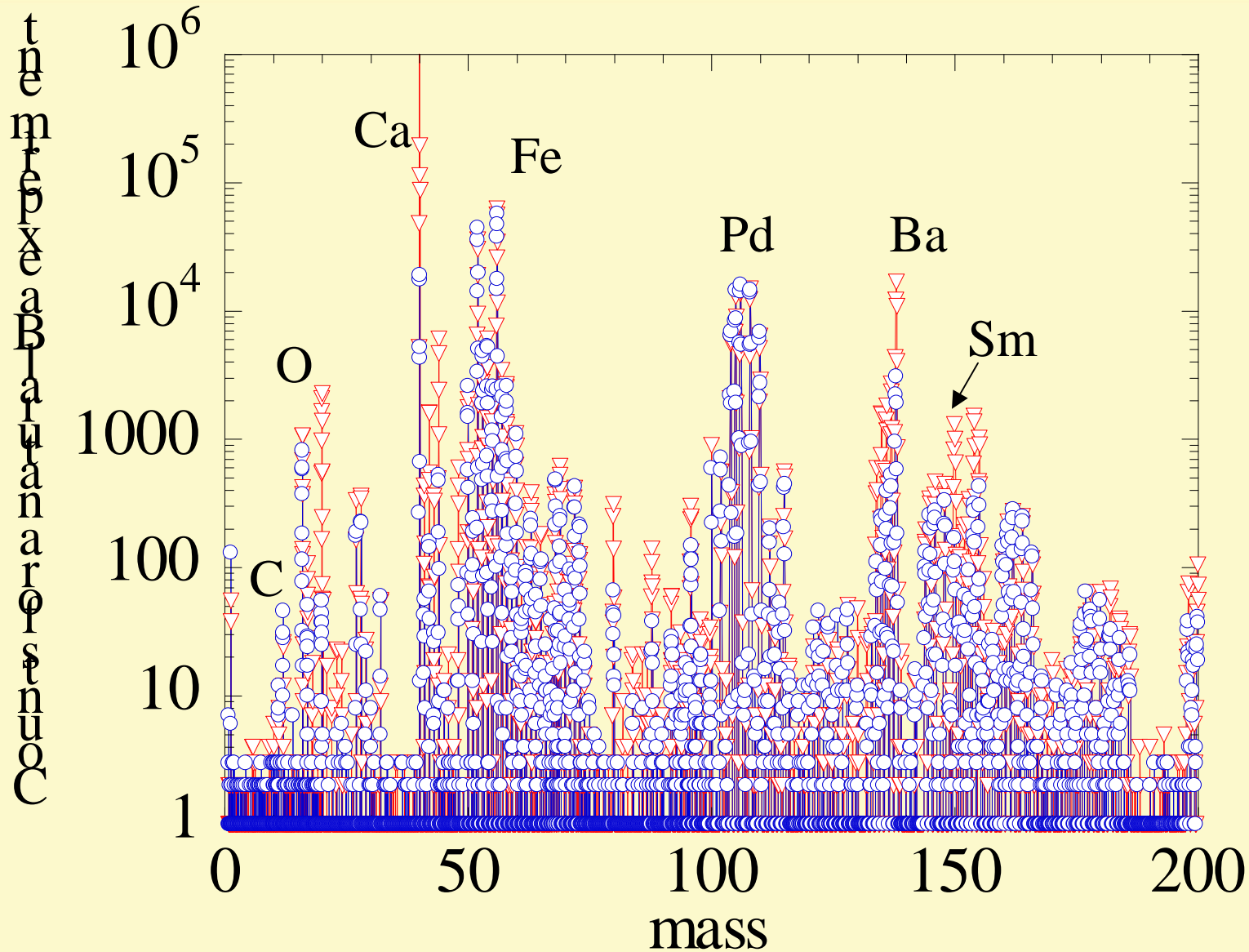
N_{Cs} : given Cs (ng)

N'_{Cs} : detected Cs after
an experiment (ng)

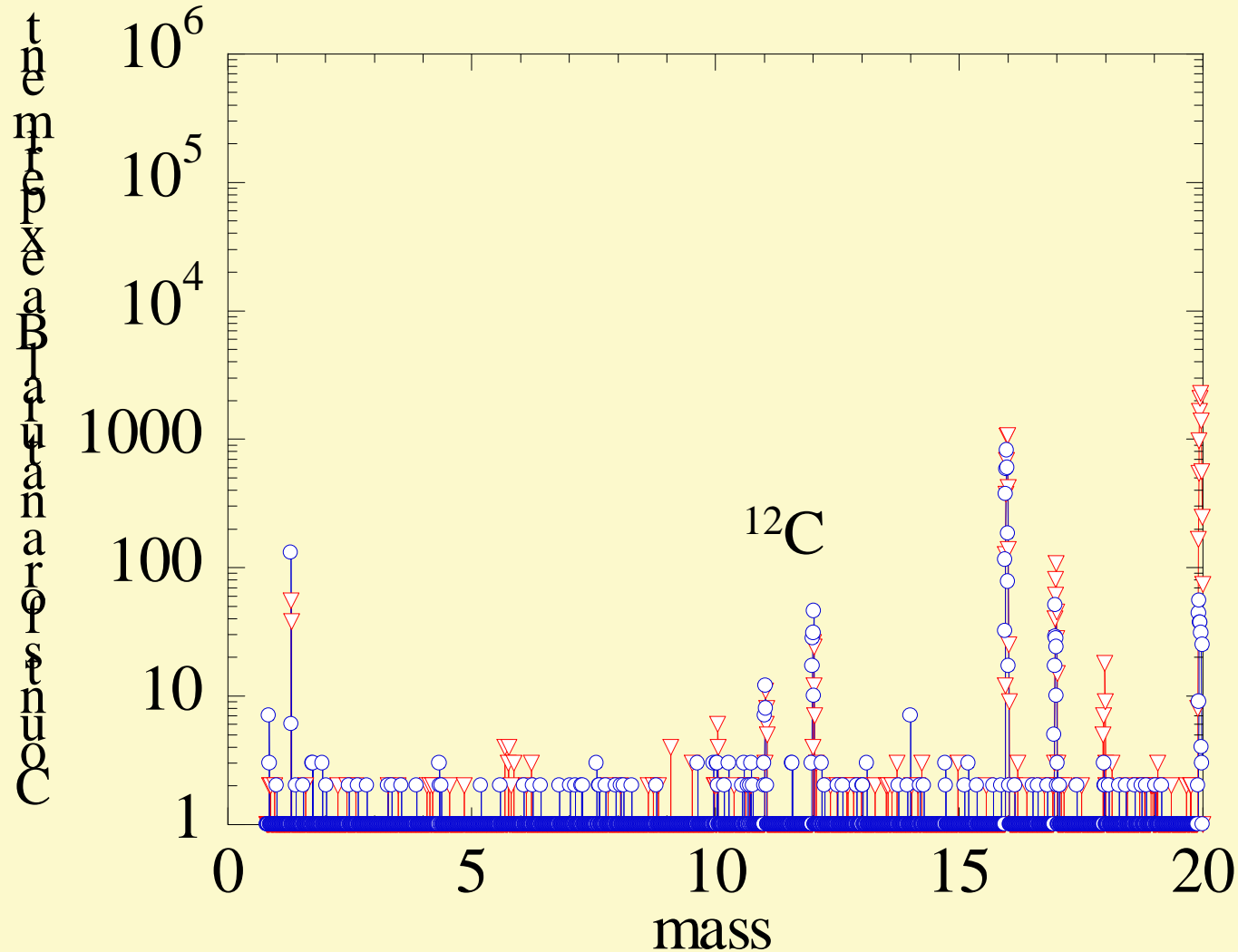


Positive Correlation between D₂ permeation and Conversion Rate

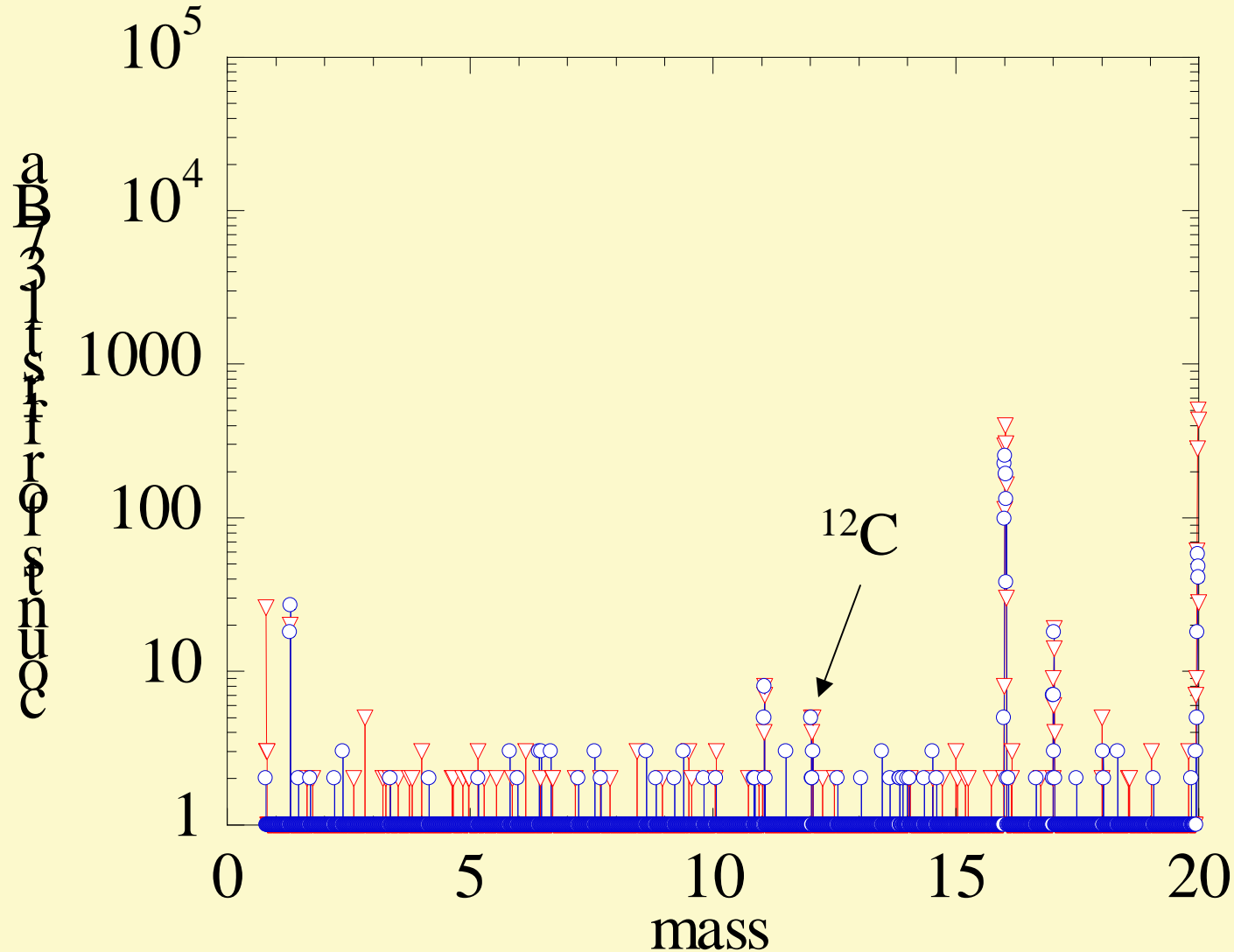
Full SIMS Spectra for a Natural Ba Experiment



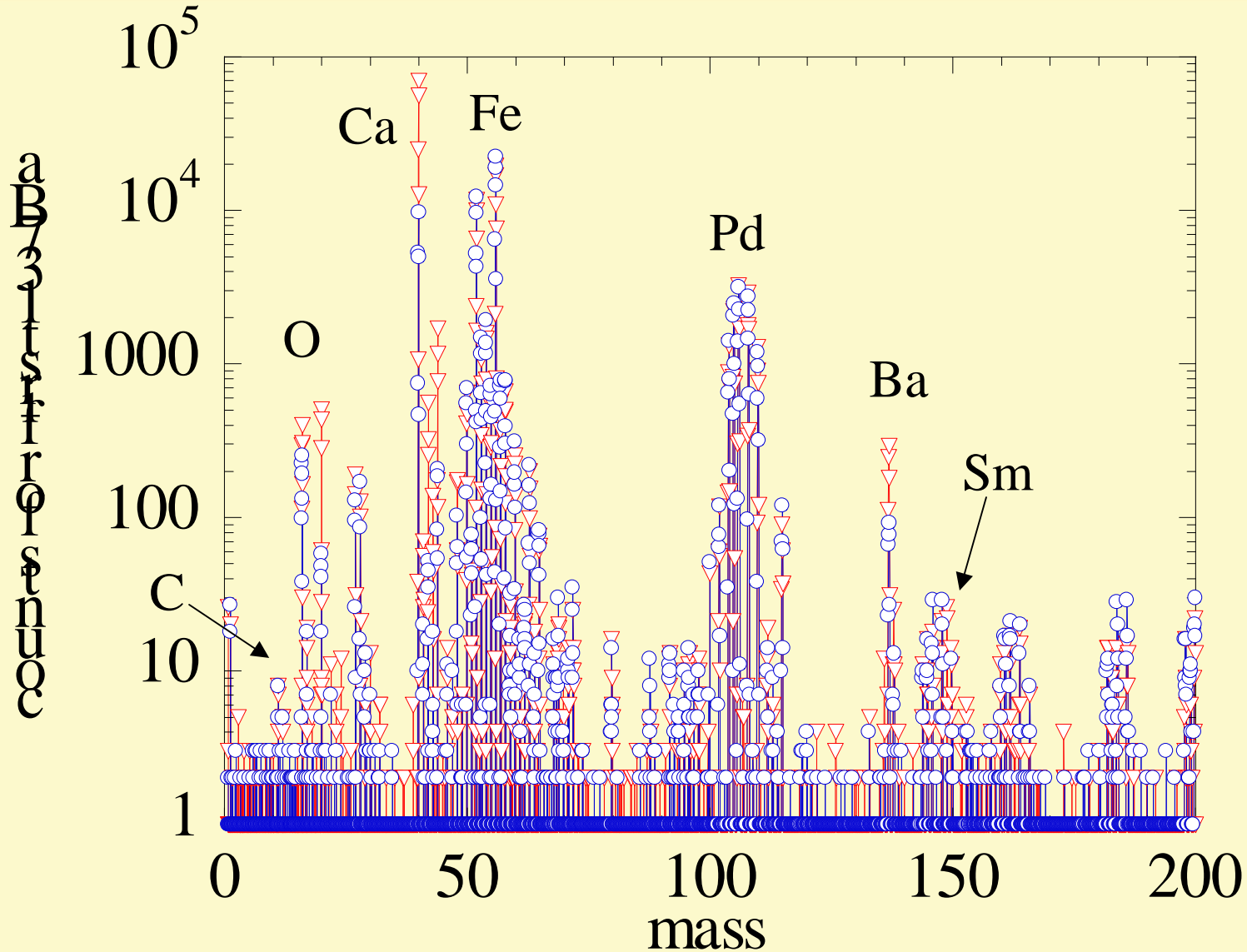
SIMS Spectra around mass 12 for a Natural Ba Experiment



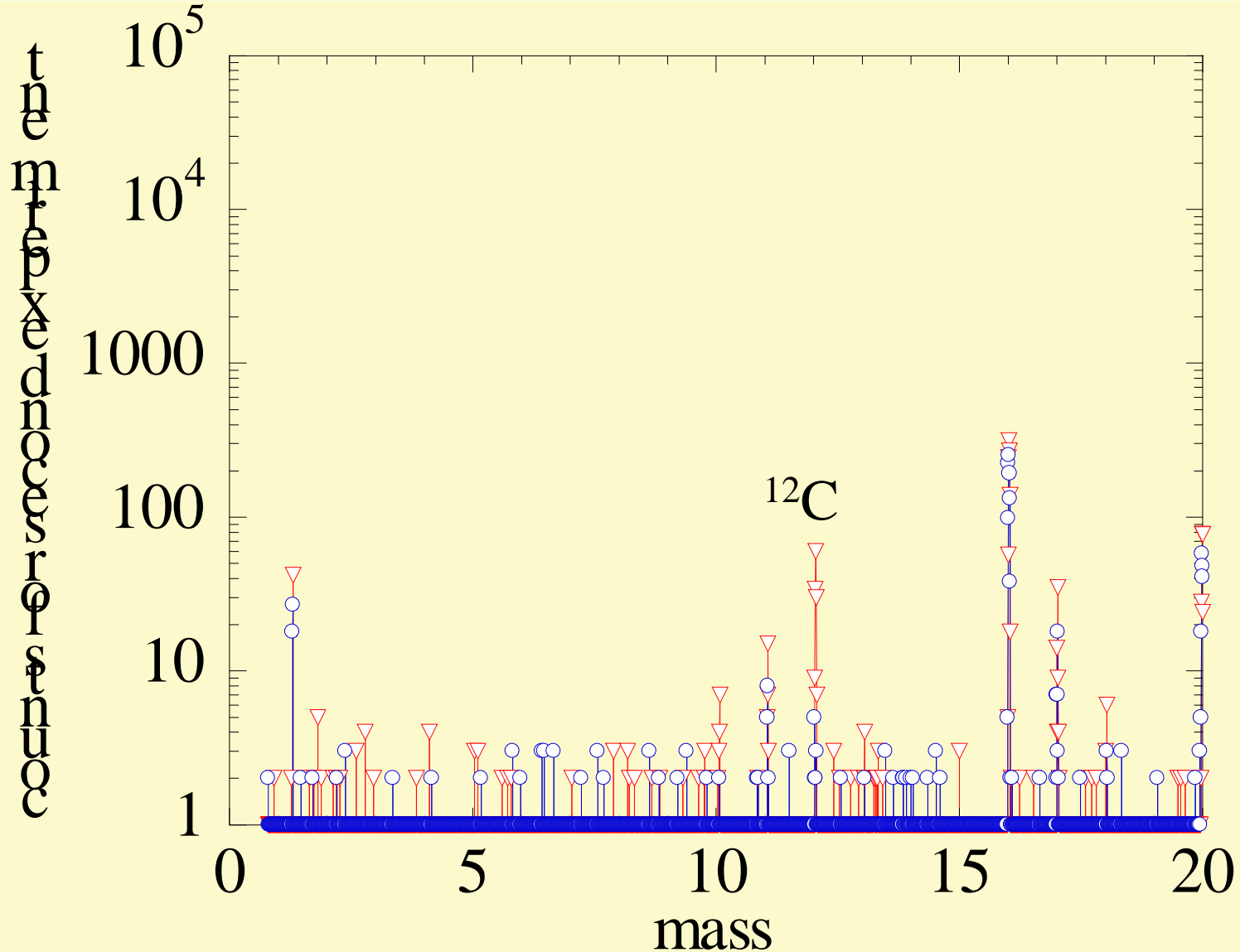
SIMS Spectra around mass 12 for the first ^{137}Ba experiment



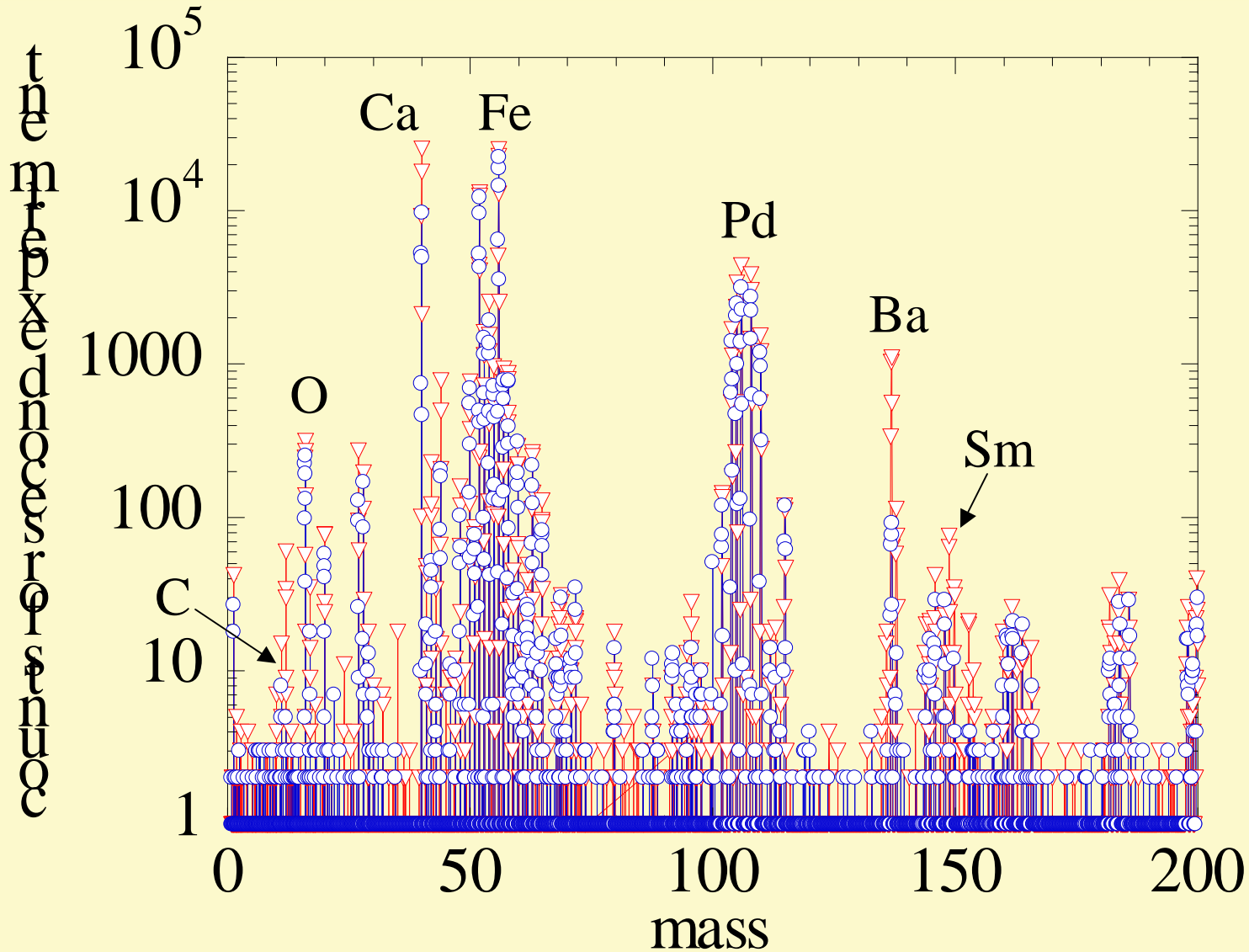
Full SIMS Spectra for #1Experiment



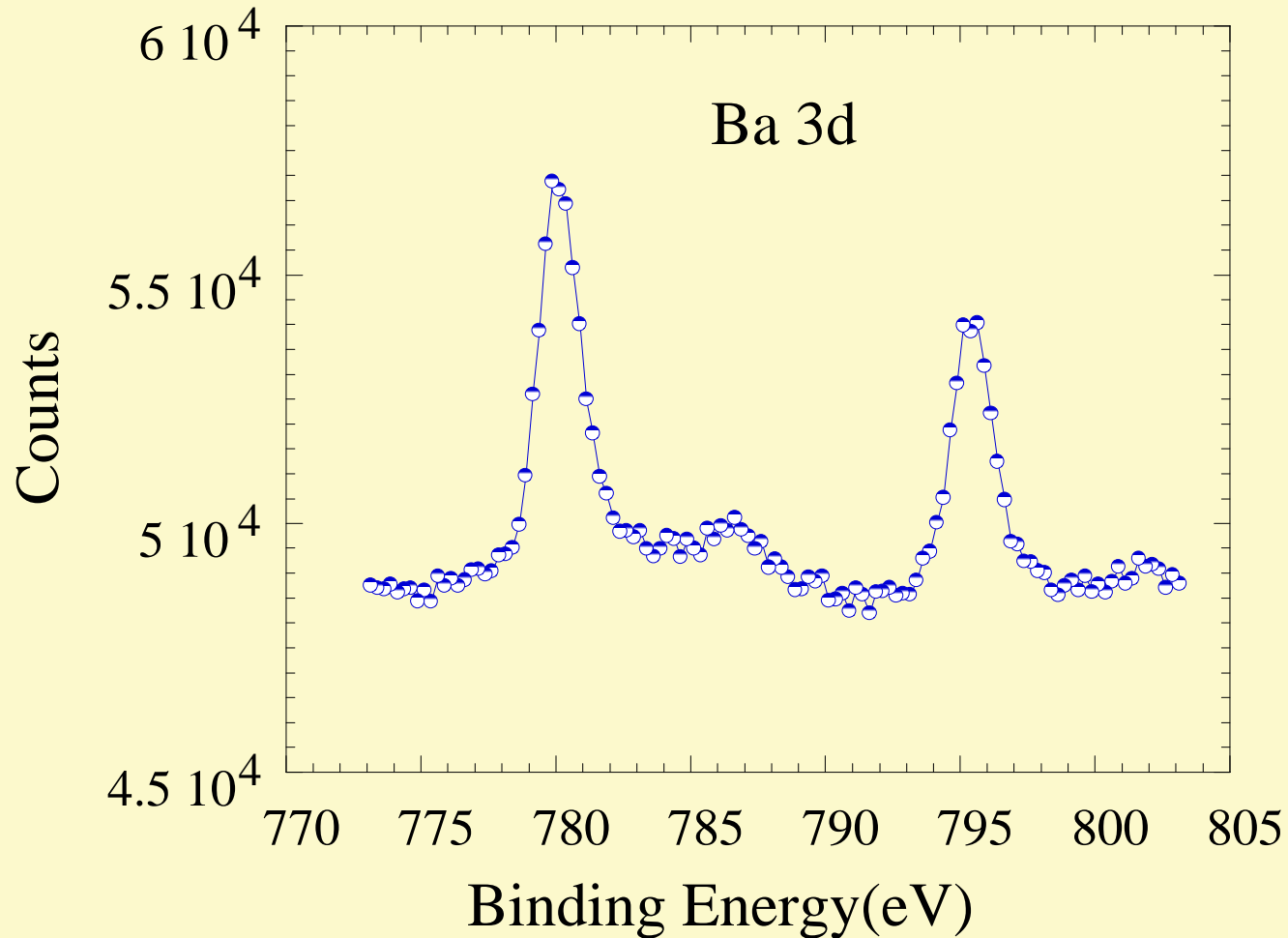
SIMS Spectra around mass 12 for the second ^{137}Ba experiment



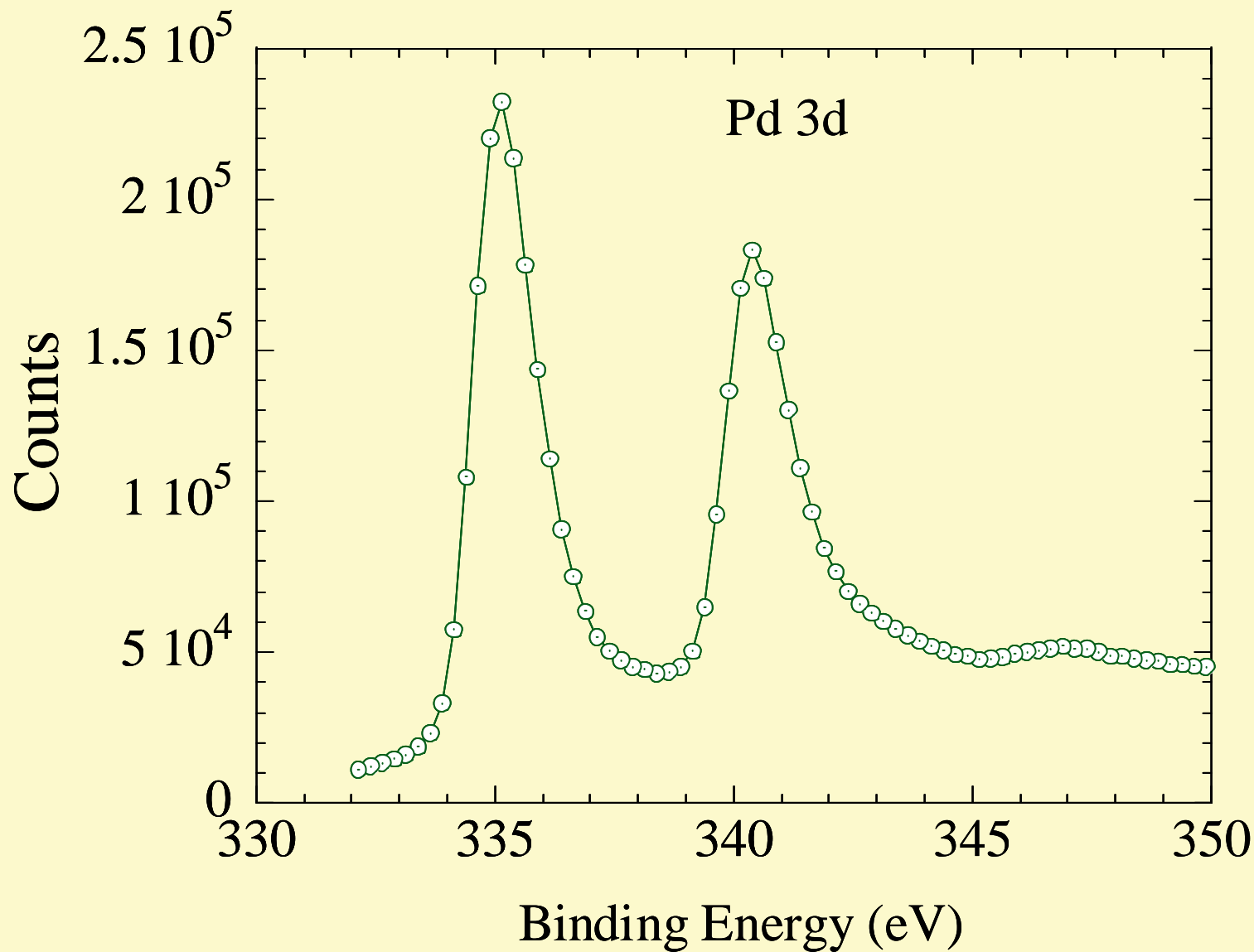
Full SIMS Spectra for #2Experiment



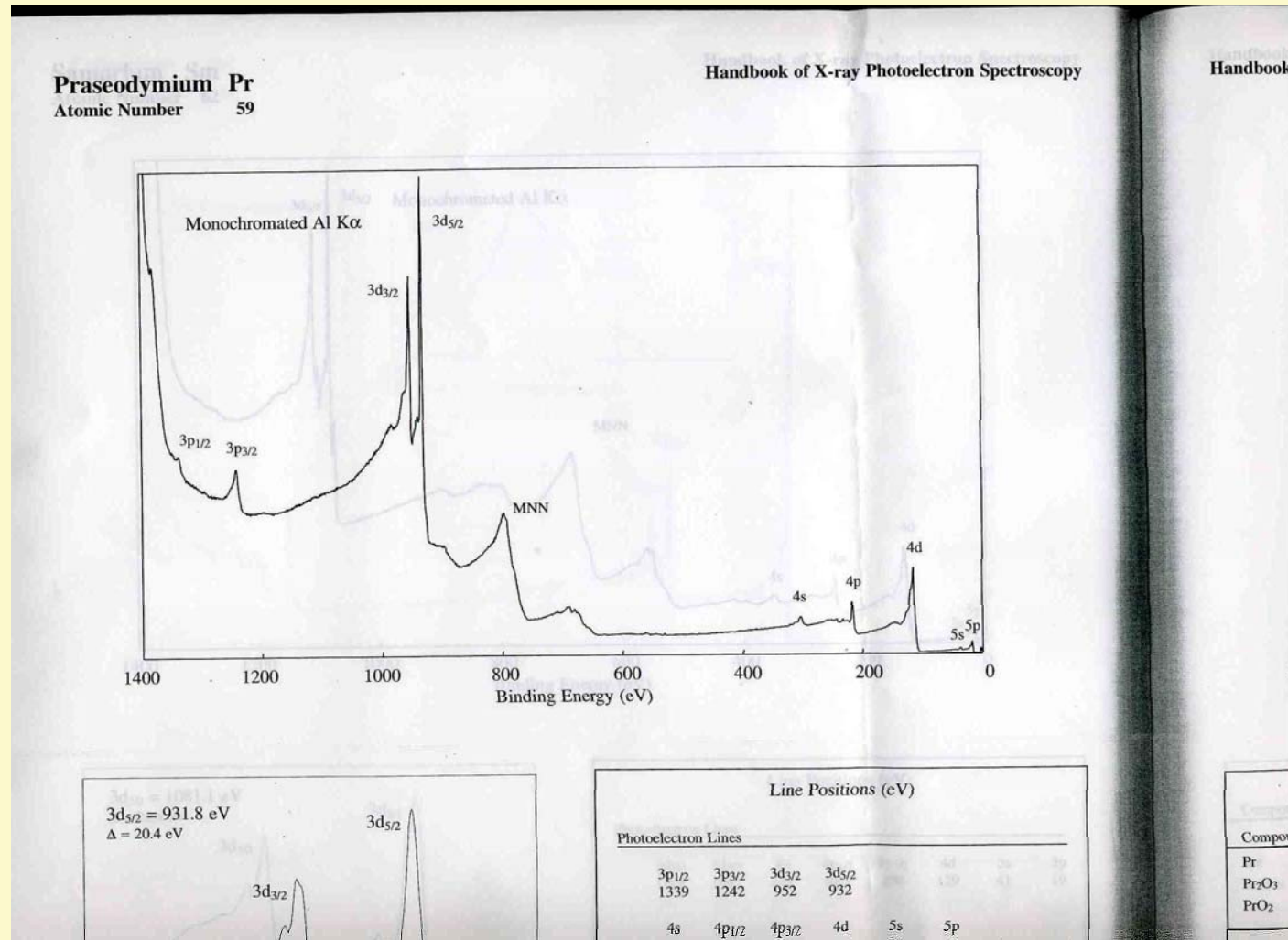
XPS Spectrum for Ba the second ¹³⁷Ba experiment



XPS Spectrum for Pd the second ¹³⁷Ba experiment



An Example of XPS Spectrum for Pr



Examination of Molecular Ions

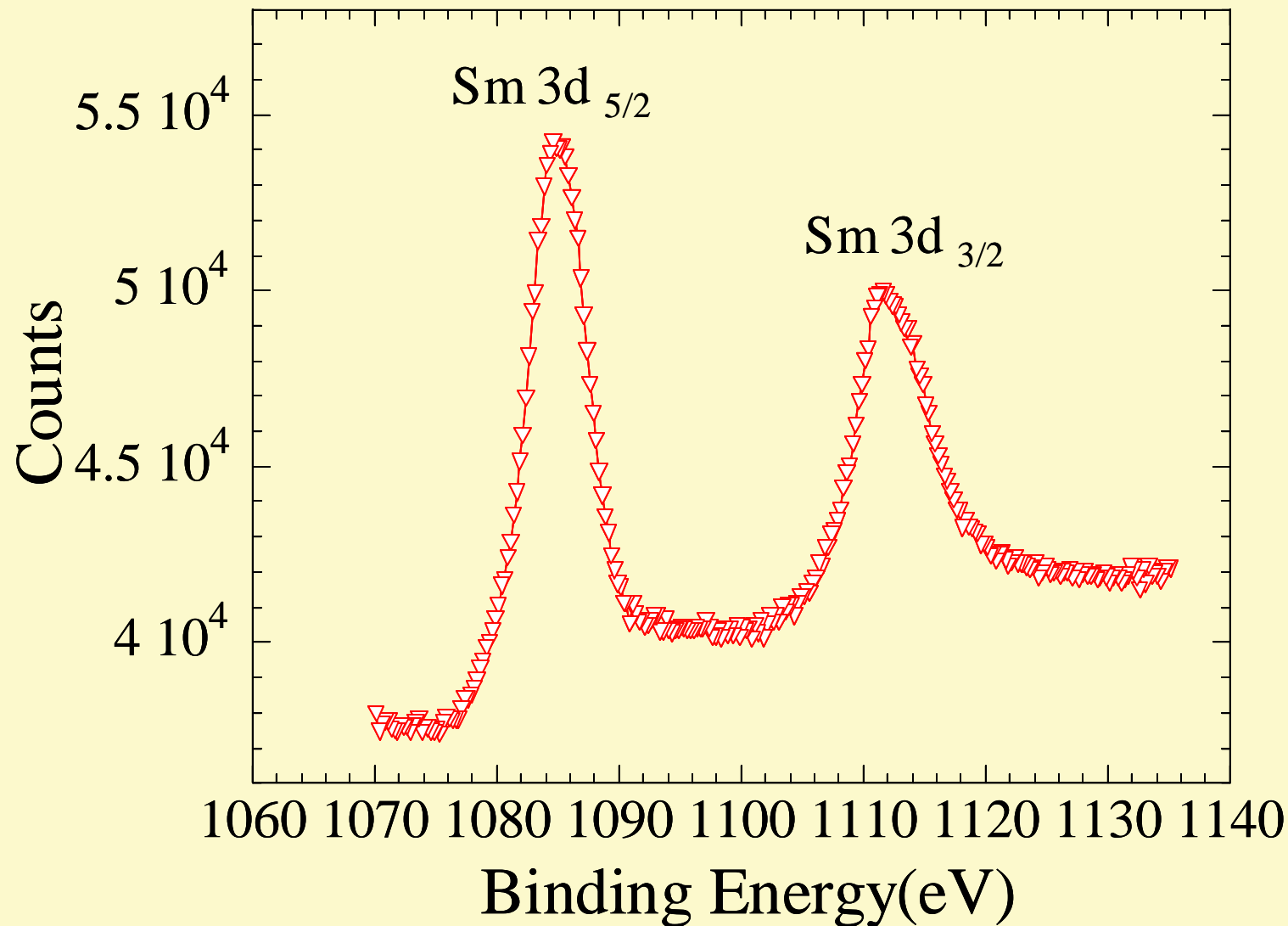
Pd	Pd ⁴⁰ Ca
102(1%)	142
104 (11%)	144
105 (22%)	145
106 (27%)	146
108 (26%)	148
110 (12%)	150

Ba	Ba ¹⁶ O
130(0.1%)	146
132(0.1%)	148
134(2.4%)	150
135(6.6%)	151
136(7.8%)	152
137(11.3%)	153
138(71.7%)	154

No Molecular Ions for 149.

¹¹⁰Pd(12%)Ca and ¹³⁴Ba(2.4%)O for mass 150, however their effects should be lower than ¹⁰⁶Pd(27%)Ca and ¹³⁸Ba(71.7%)O

XPS Spectrum for the detected Sm



Depth Profile of Cs and Pr by XPS(2)

