



# RUNNING REX-EBIS FOR HIE-ISOLDE

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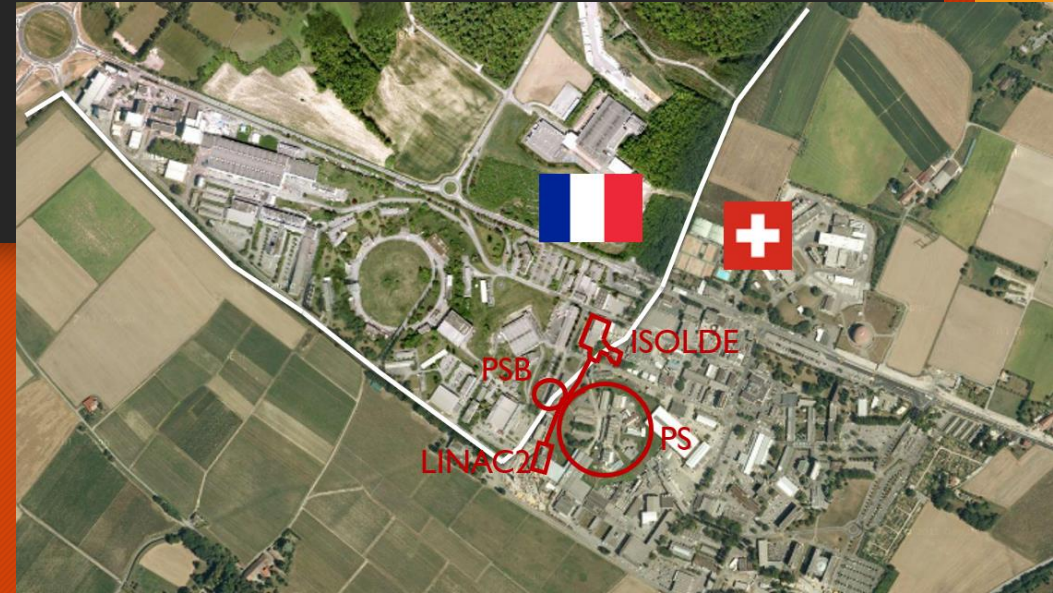


# Topics

- What is ISOLDE?
- Constuction/processes
  - Production
  - Selection
  - Accelerating system
- What did we do?
  - Mass-spectroscopy
    - 45 ms
    - Comparison 45-195 ms
  - The calibration of a radiofrequent quadrupole

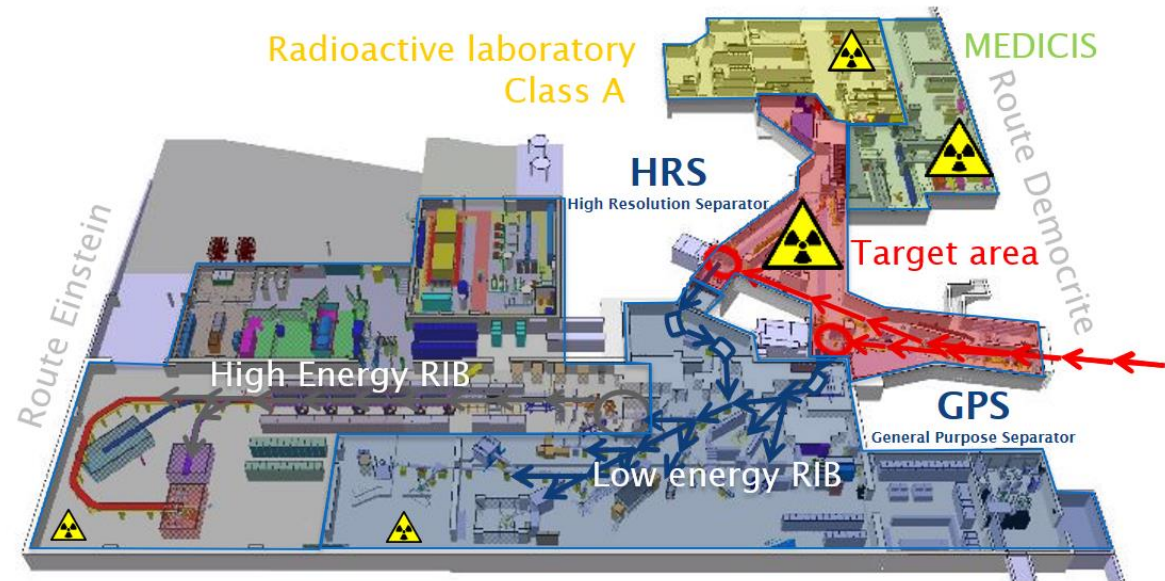
# WHAT IS ISOLDE?

- Isotope Separator OnLine Device
- Oldest running experiment
- 0.1% budget
- 50% protons
- Goal: creation of radioactive isotopes and sending them to different experiments



# Construction/processes

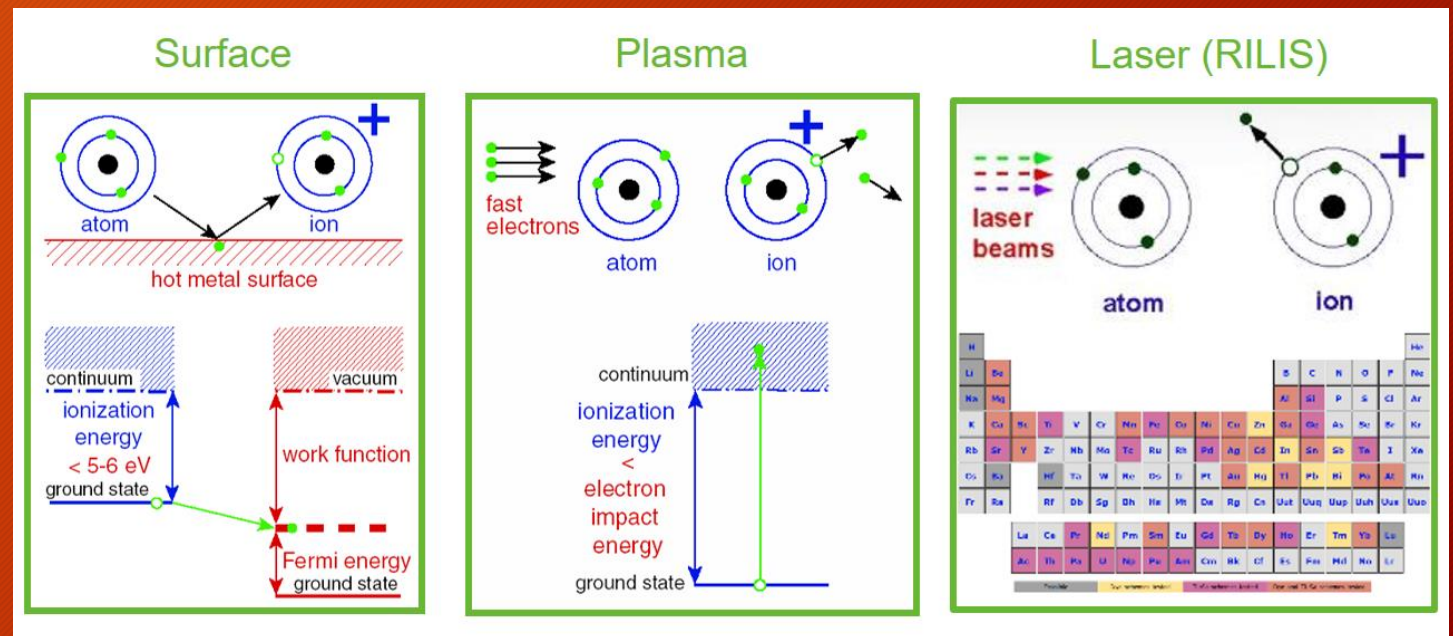
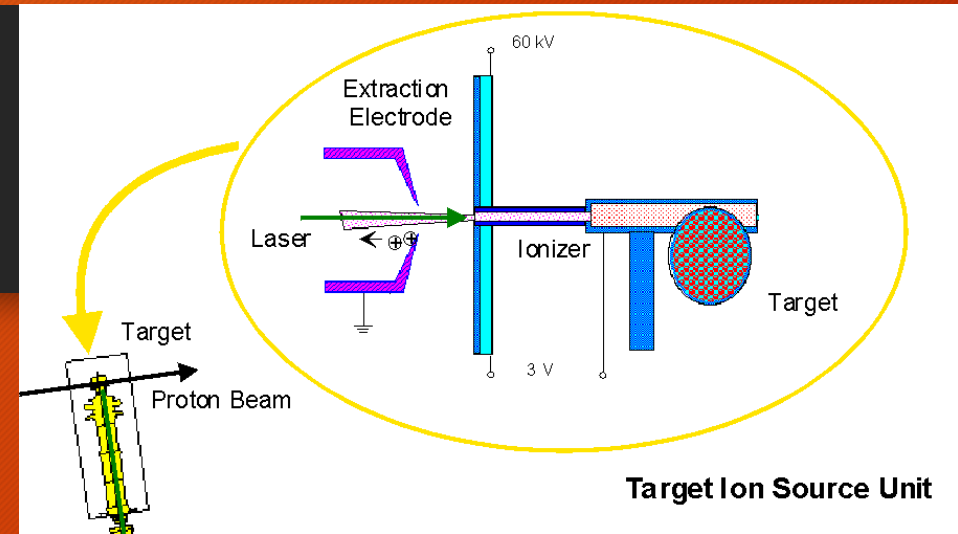
- Production
- Selection
- Accelerating system



- Protons (1.4 GeV)
- Low energy RIBs (up to 60 keV)
- High energy RIBs (up to 10 MeV/u)

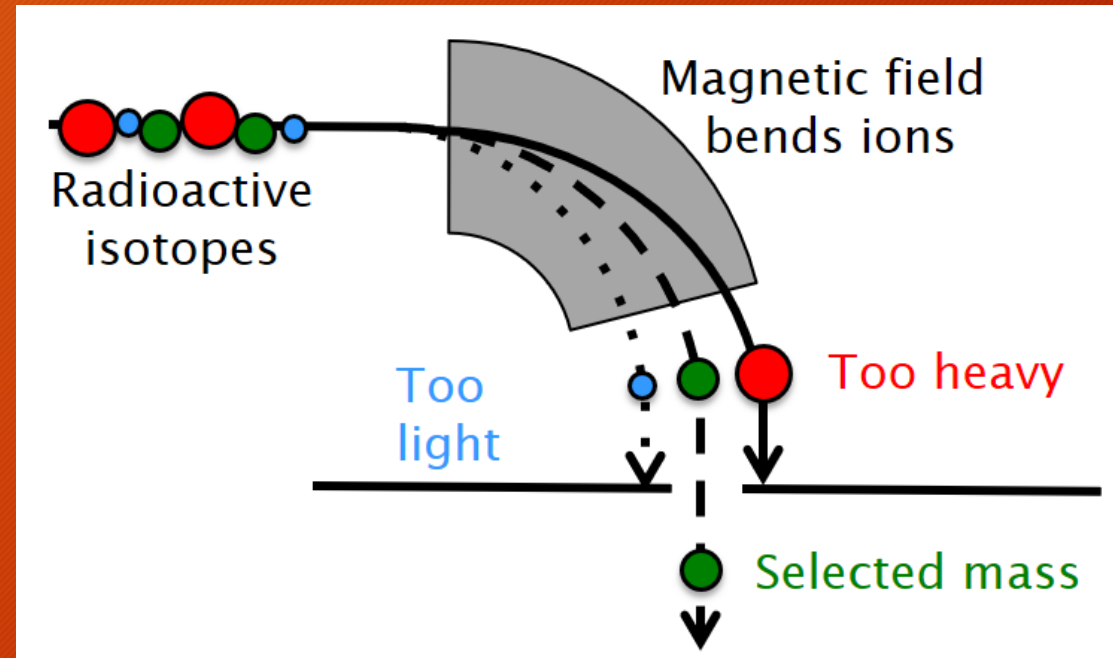
# Process: production

- Protons (1.4 GeV) -> target
- Ionization
  - Surface ionization
  - Plasma ionization
  - RILIS (lasers)
- Extraction by charge estate



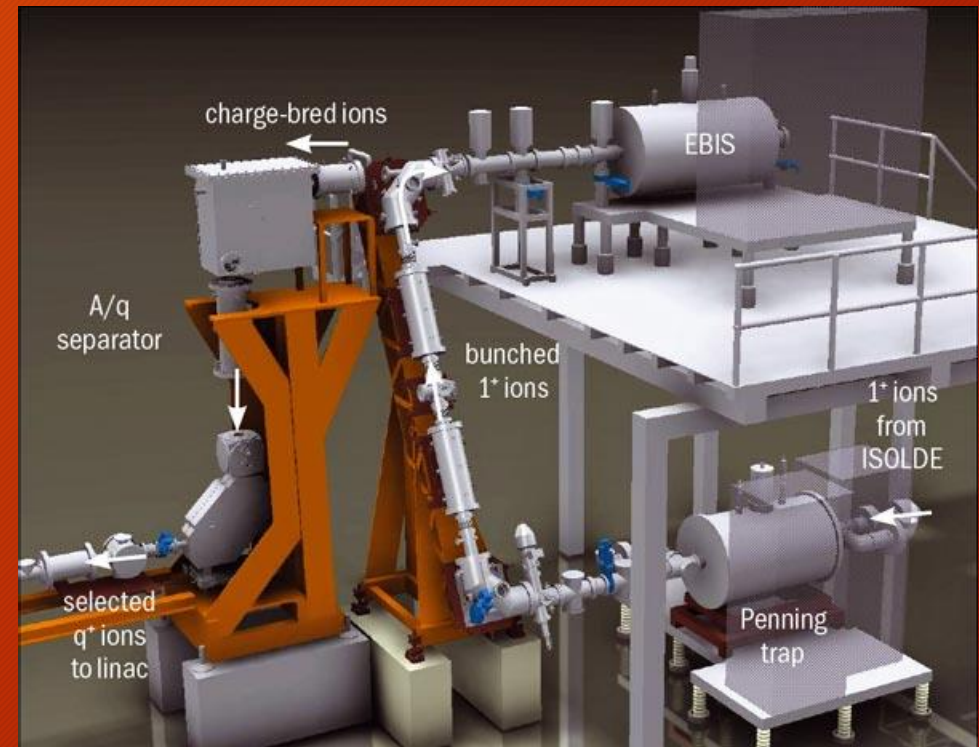
# Process: selection

- High Resolution Separator
- General Purpose Separator
- Bending radius
- $A/q$



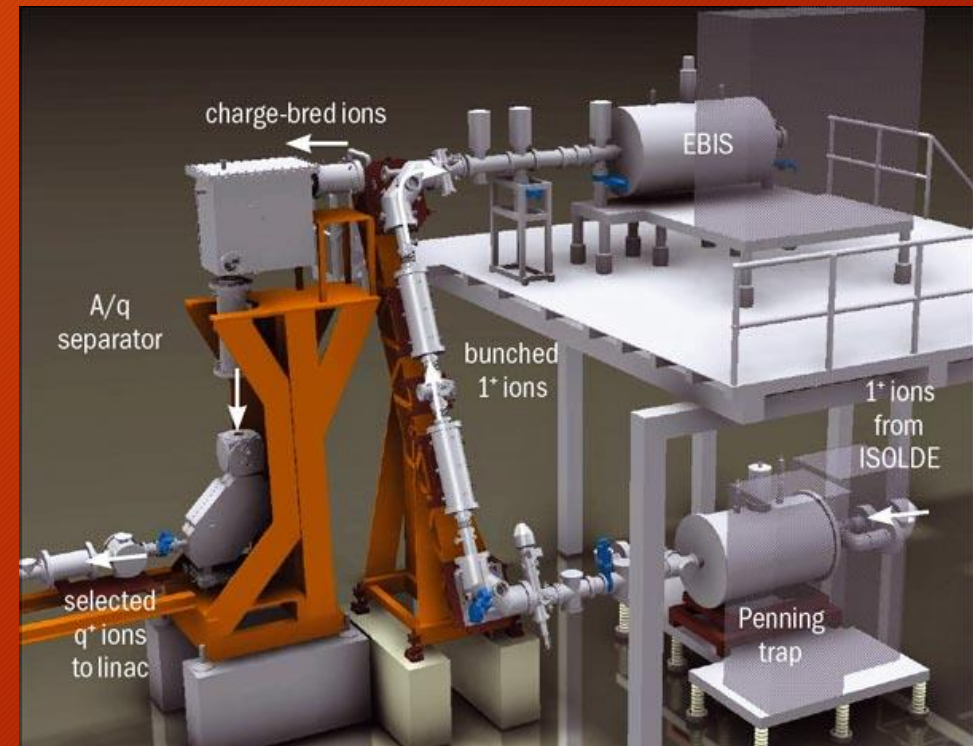
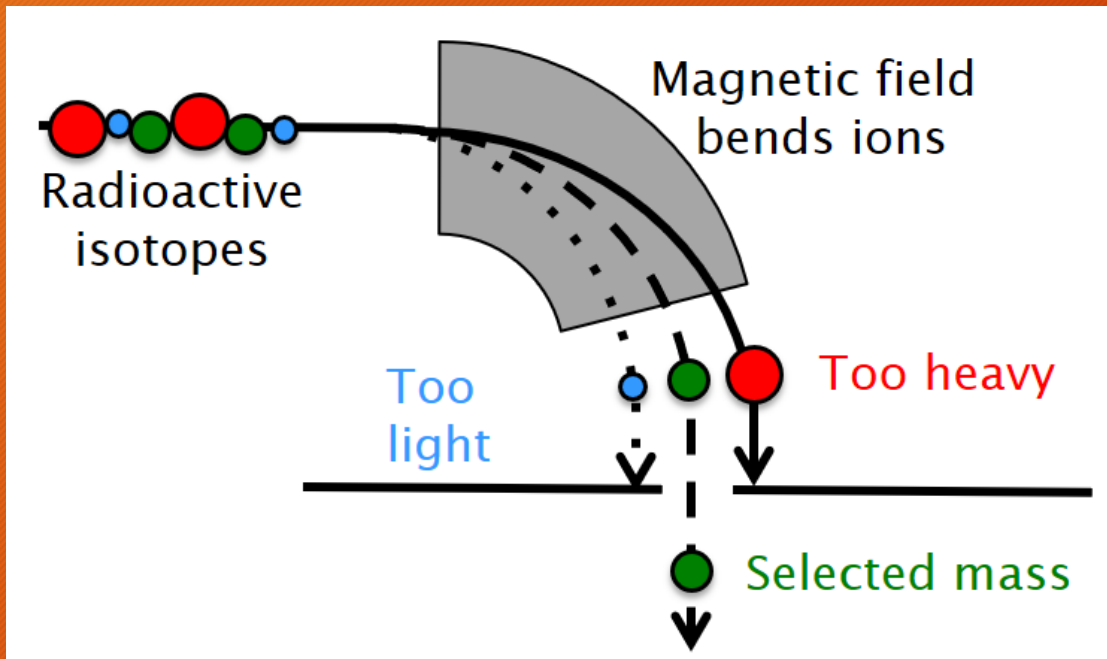
# Accelerating system

- REX-EBIS: Radioactive EXperiment-Electron Beam Ion Source
  - Charge breeder: electron canon
- REX: Radioactive EXperiment
  - Normal accelerator: 3 MeV/u
- HIE: High Intensity and Energy
  - Superconducting accelerator: 10 MeV/u



# Mass-spectroscopy

- Charge breeder -> separating magnet -> faradaycup

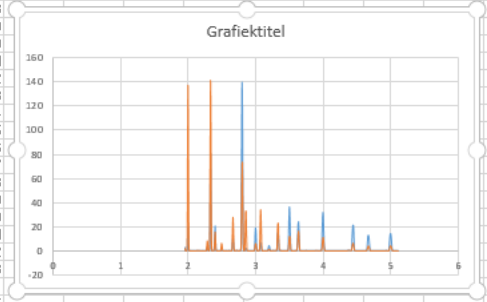




Excel ribbon: BESTAND, START, INVOEGEN, PAGINA-INDELING, FORMULES, GEGEVENS, CONTROLLEREN, BEELD, ONTWERPEN, INDELING. Includes icons for Klabbord, Lettertype, Uitlijning, Getal, Stijlen, Cellen, Bewerken, Nieuwe groep.

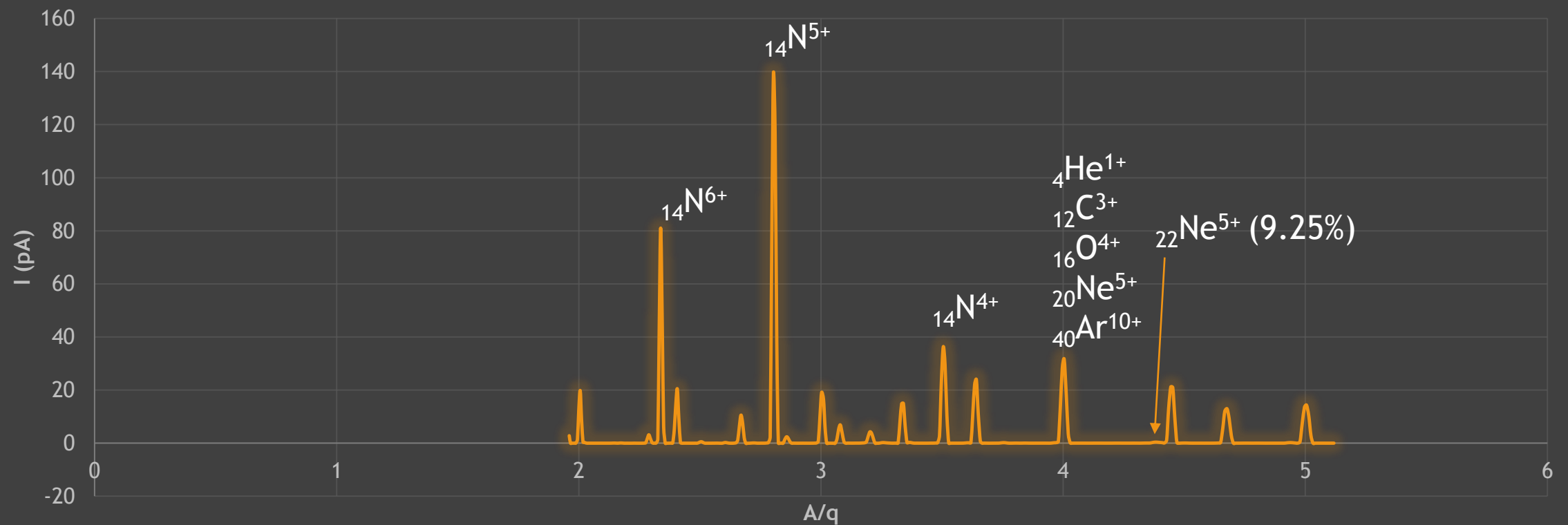
Worksheet header: Grafiek 2, XSEPE, RE, Current, Field, Beam intensity [a.u.] at XRFQ, BFC0200. Columns A through AA.

Main data table with columns A through AA and rows 1 through 51. Contains numerical data for various parameters.

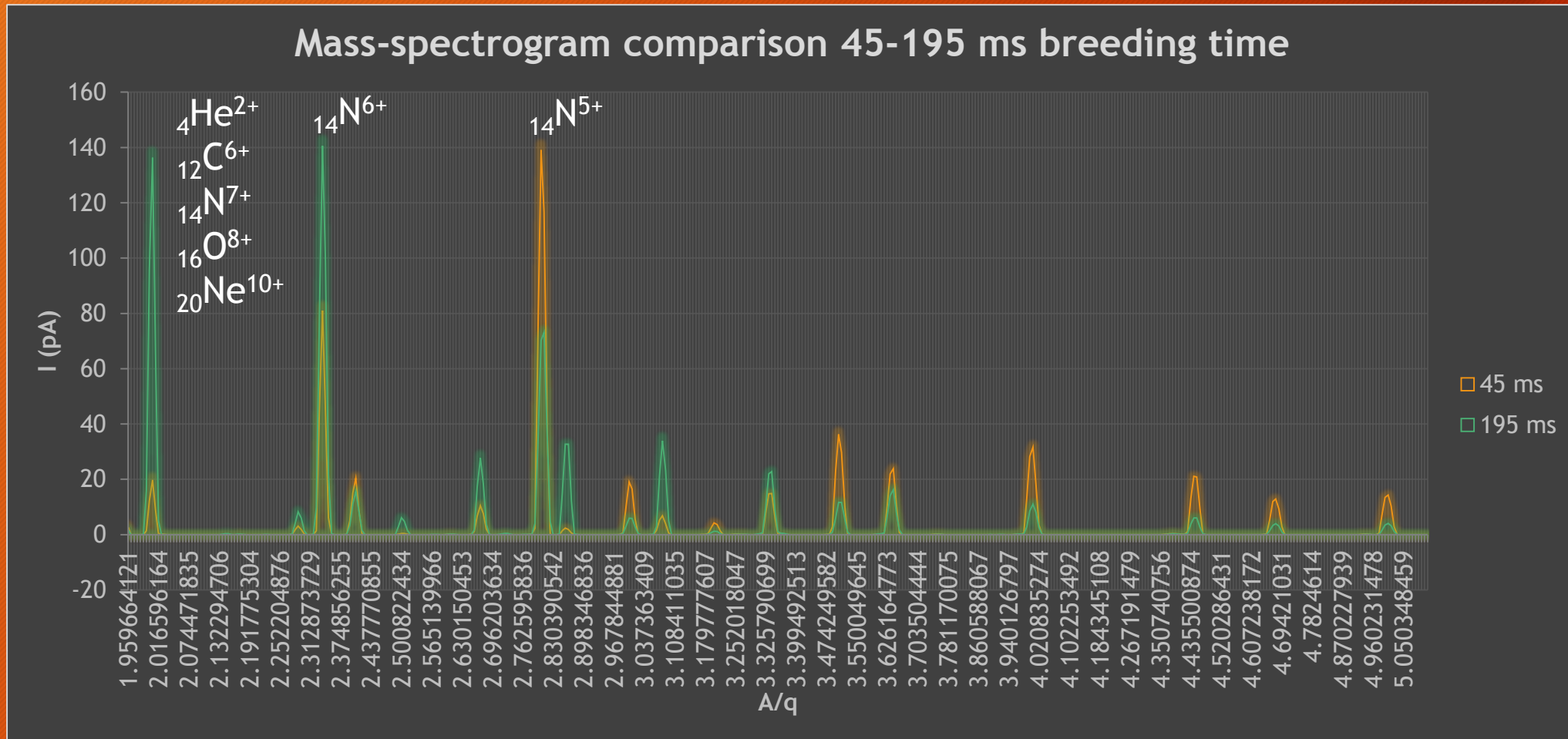


# Mass-spectrogram

Mass-spectrogram 45 ms breeding time

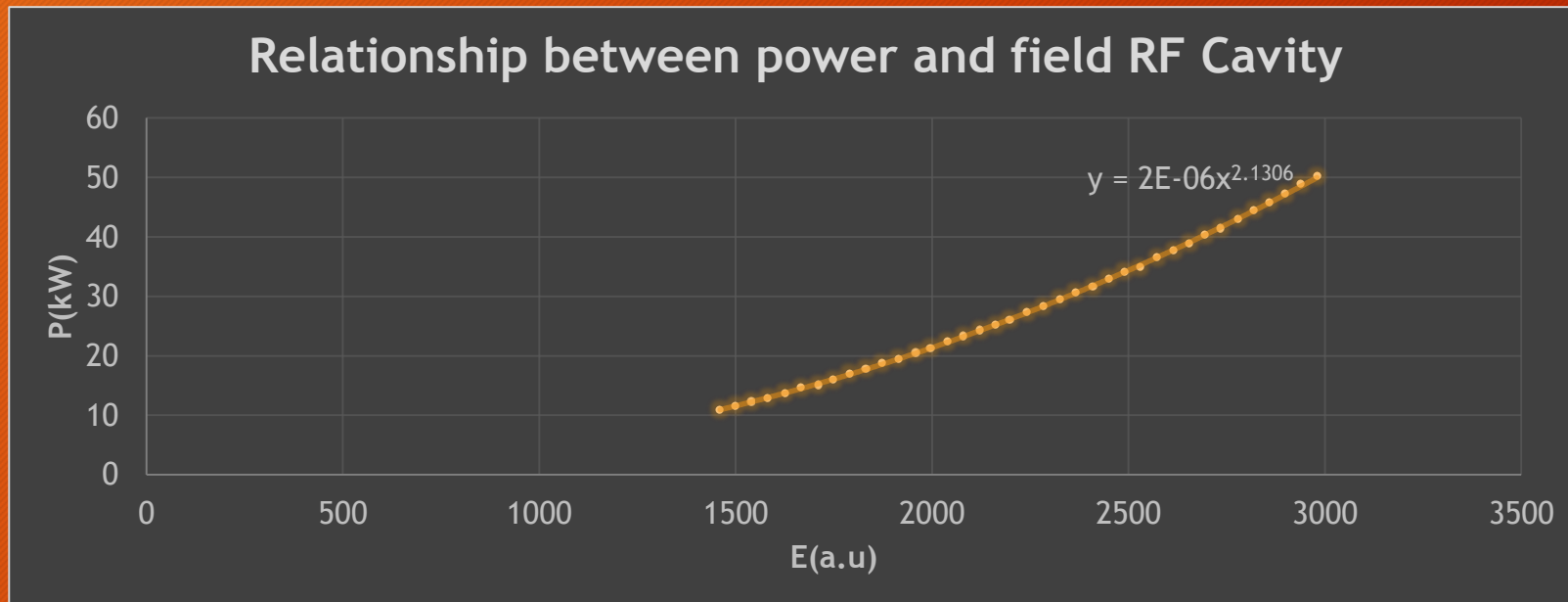


# Mass-spectrograms breeding time



# Radio Frequency Cavity

- Changed the requested electric field
- Measured the necessary RF power to generate this field
- Calculated relationship between them



# Questions?

